



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

AIT001 Atatürk's Principles and History of Turkish Revolution I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	AIT001	Atatürk's Principles and History of Turkish Revolution I	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is to teach the process from the late periods of the Ottoman Empire through to the establishment of the Republic and then how Mustafa Kemal Atatürk's principles and reforms were implemented.

Teaching Methods and Techniques:

Within the scope of this course, the period from the late stages of the Ottoman Empire to the proclamation of the Republic, the revolutions carried out and their reasons, their effects on political life, and their reflections up to the present day will be examined in detail.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Mehtap KAYA

Name of Lecturers:

Asist Prof.Dr. Mehtap KAYA

Assistants:

Recommended or Required Reading

Resources

Eric Jan Zürcher, "Modernleşen Türkiye'nin Tarihi", İletişim Publishing, İstanbul, 2012.,Feroz Ahmad, "Modern Türkiye'nin Oluşumu", Kaynak Publishing, İstanbul,1999.,Bü Ed. Eraslan C. (2018) Atatürk İlkeleri ve İnkılap Tarihi- I, Anadolu Üniversitesi Yayınları: Eskişehir

Bir ara sınav ve bir final sınavı yapılacaktır.

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	The Reasons That Prepared the Turkish Revolution - I		
2	The Reasons That Prepared the Turkish Revolution - II		
3	World War I		
4	World War I and Mudros Armistice Agreement		
5	Circulars and Congresses - I		
6	Circulars and Congresses - II		
7	Opening of the Turkish Grand National Assembly and Establishment of the New Turkish State - 1		
8	Midterm Exam		
9	TBMM'nin Açılışı ve Yeni Türk Devletinin Kuruluşu - 2		
10	War of Independence Period-I		
11	War of Independence Period-II		
12	Atatürk Period Domestic Policy - I		
13	Atatürk Period Domestic Policy - II		
14	Atatürk Period Turkish Revolution - I		
15	Atatürk Period Turkish Revolution - II		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Students will gain knowledge about the emergence and function of concepts such as revolution, reform, radical change, and the power-state, as well as about the concept of the constitution.
C02	Students investigate the reasons that prepared for the downfall of the Ottoman Empire and understand and compare the outcomes of the interactions among the positions of other states that consi
C03	Students will acquire a general knowledge about World War I and its effects on world politics.
C04	Students will gain knowledge about the founding conditions of the Republic of Turkey and the foundations upon which it was established.
C05	Students will gain knowledge about the effects of the reforms made during the Atatürk Era on the political, social, and economic structure.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes	
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	P03
C01	1
C02	1
C03	1
C04	1
C05	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

AIT002 Atatürk's Principles and History of Turkish Revolution II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	AIT002	Atatürk's Principles and History of Turkish Revolution II	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is to provide students with in-depth knowledge of the political, economic, social, and cultural dynamics of the historical period extending from 1923 to the present, to support their ability to evaluate historical events from a multidimensional perspective, and to familiarize them with the fundamental theoretical concepts, major debates, and thought methodologies of different social sciences, particularly history, within an interdisciplinary approach.

Teaching Methods and Techniques:

The scope of the course encompasses the fundamental academic interpretations of the political, economic, social, and cultural events of the historical period spanning from 1923 to the present day.

Prerequisites and co-requisites:**Course Coordinator:**

Asist. Prof. Dr. Mehtap Kaya

Name of Lecturers:

Asist. Prof. Dr. Mehtap Kaya

Assistants:**Recommended or Required Reading****Resources**

Şerafettin Turan, "Türk Devrim Tarihi-II", Bilgi Publishing, 2004., Şerafettin Turan, "Türk Devrim Tarihi-III-IV", Bilgi Publishing, 2004., Bülent Tanör, "Kurtuluş- Kurtuluş" Ed. Sayılır B. (2020) Atatürk İlkeleri ve İnkılap Tarihi- II, Anadolu Üniversitesi Yayınları: Eskişehir

Bir ara sınav ve bir final sınavı yapılacaktır.

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Turkish Revolution and Reform Movements (1923-1938)		
2	İsmet İnönü Period-I		
3	İsmet İnönü Period-II		
4	Demokrat Parti Period-I		
5	Demokrat Parti Period-II		
6	Inter-Two Military Coups Period-I (1960-1980)		
7	Inter-Two Military Coups Period-II (1960-1980)		
8	Midterm Exam		
9	From the 1980 Military Coup to the Coalition Period (1980-1990)		
10	Coalitions Period-I (1990-2002)		
11	Coalitions Period-II (1990-2002)		
12	Adalet ve Kalkınma Partisi Period-I		
13	Adalet ve Kalkınma Partisi Period-II		
14	Constitutions in Turkey		
15	General Revision		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Students will be informed about the revolutions carried out in the fields of law, education, economy, culture and daily life during the Atatürk Era.
C02	Students gain information about the political, economic and cultural policies of the Republic of Turkey from its foundation to the present.
C03	Students gain information about the developments in the multi-party life period of Turkish political history, with the Democratic Party coming to power.
C04	Students gain knowledge to evaluate the 1960s and 1980s Military Interventions politically, socially and economically.
C05	Students gain information about the political, economic and social developments from 1980 to the present.
C06	Students gain the ability to evaluate the political, economic and social history of the Republic of Turkey from its establishment to the present day from a multidimensional perspective.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes	
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	P03
C01	1
C02	1
C03	1
C04	1
C05	1
C06	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU091 Introduction to Civil Engineering					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	BAU091	Introduction to Civil Engineering	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is to introduce the Civil Engineering profession and its sub-specialities in general and to convey the historical background, current status and future challenges of the Civil Engineering profession to the students. It is aimed to develop students' ethical and professional responsibilities and to improve themselves in written and oral communication.

Teaching Methods and Techniques:

This course not only facilitates academic orientation for students but also comprehensively addresses the general definition, history, and evolution of civil engineering. The curriculum embraces the specialized fields of civil engineering, the dynamics of entrepreneurship, and engineering ethics, while also incorporating the development of research skills and presentation techniques within a significant branch of engineering.

Prerequisites and co-requisites:

Course Coordinator:

Associate Prof.Dr. Serdar Ulusoy

Name of Lecturers:

Associate Prof.Dr. Serdar Ulusoy

Assistants:

Recommended or Required Reading

Resources

Manuskript: Fertigungsverfahren in der Bauwirtschaft • Drees, G. / Krauß, S.: Baumaschinen und Bauverfahren, 3. Auflage, Expert-Verlag, 2002 ,König, H.: Maschinen im

yok

Course Category

Mathematics and Basic Sciences :	90	Education :	
Engineering :		Science :	
Engineering Design :	10	Health :	
Social Sciences :		Field :	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Civil Engineering	-	-
2	General Definition of Civil Engineering	-	-
3	Building Materials sub-speciality	-	-
4	Structural and Earthquake Engineering sub-speciality	-	-
5	Geotechnical Engineering sub-speciality	-	-
6	Building Management sub-speciality	-	-
7	Hydraulic and Transport Engineering sub-speciality	-	-
8	Midterm Exam	-	-
9	General Site Management	-	-
10	Entrepreneurship: Basic Concepts	-	-
11	Engineering Ethics: Basic Concepts	-	-
12	Student Presentations	-	-
13	Student Presentations	-	-
14	Student Presentations	-	-
15	Student Presentations	-	-
16	Final Exam	-	-

Course Learning Outcomes

No	Learning Outcomes
C01	Have knowledge about the working areas of the profession.
C02	Gain the ability to analyse and report an existing civil engineering practice.
C03	Gain teamwork, presentation and self-expression skills.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	2	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	2	1	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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	P01	P02	P03	P04	P05	P06	P07
C01	4	3	2	3	2	1	5
C02	5	4	3	4	3	5	4
C03	2	3	5	3	5	2	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU092 Scientific Study Methods					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	BAU092	Scientific Study Methods	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to enable students to effectively analyze written literature sources, comprehend scientific study concepts, and enhance their ability to integrate texts from the literature into their theses. It also seeks to teach report writing and presentation techniques in engineering projects while fostering research competencies through project and final assignments.

Teaching Methods and Techniques:

The course includes teaching students how to write a research project and develop a project thesis. It encompasses fundamental topics such as research methodology, research procedures, and the documentation of scientific studies. Additionally, it aims to enhance students' theoretical and practical knowledge of scientific research processes.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Enver Vural YAVUZ

Name of Lecturers:

Prof. Dr. Enver Vural YAVUZ

Assistants:**Recommended or Required Reading**

Resources Creswell, J. W., & Creswell, J. D. (2018). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (5th ed.). SAGE Publications., Doğan, C. (2015). Bilir

Course Category

Mathematics and Basic Sciences	: 20	Education	: 25
Engineering	: 20	Science	: 5
Engineering Design	: 5	Health	: 5
Social Sciences	: 5	Field	: 20

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		
2	Phase 1: Orientation and start of the project Study work.		
3	Phase 2: Implementation of the project, documentation, and submission		
4	Phase 3: Correction and feedback		
5	Purpose of research methodology and quality of research		
6	Types of research		
7	Preparing the state of the art of research		
8	Midterm Exam		
9	Derive research objectives, questions, and hypotheses		
10	Descriptive studies		
11	Elaboration of the solutions		
12	Evaluation of the solutions		
13	Requirements for good scientific texts		
14	Structure		
15	Basic rules of writing and language		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Analyzes subject-specific problems and evaluates solutions.
C02	Learns and applies universally accepted scientific study rules.
C03	Learns the stages of writing a scientific article.
C04	Analyses and interprets the study results obtained on the subject in a scientific way.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	1	14
Assignments	0	0	0
Presentation	9	1	9
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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	P01	P02	P03	P04	P05	P06	P07
C01	5	3	2	1	2	4	3
C02	4	2	2	3	1	4	4
C03	3	2	3	2	1	5	4
C04	4	3	5	2	3	4	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU102 Fundamentals of Structural Systems and Structural Design					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	BAU102	Fundamentals of Structural Systems and Structural Design	4	3,5	6

Recommended or Required Reading

Resources	Billington, David P. (1983). Der Turm und Die Brücke. Verlag Wilhelm Ernst & Sohn.,Addis, Bill (1999). 3000 Years of Bridges. Thames & Hudson.,-
-	-
-	-

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:	50	Science	:	
Engineering Design	:	50	Health	:	
Social Sciences	:		Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	İnşaat mühendisliği tarihi hakkında bilgi verilmesi		Providing information about the history of
2	İnşaat mühendisliği tarihi hakkında bilgi verilmesi		Providing information about the history of
3	İnşaat tarihi ve inşaat mantığının verilmesi		Providing the history of construction and
4	İnşaat tarihi ve inşaat mantığının verilmesi		Providing the history of construction and
5	İnşaat mühendisinin sosyal rolünün verilmesi		Providing the social role of the civil engin
6	İnşaat mühendisinin sosyal rolünün verilmesi		Providing the social role of the civil engin
7	İnşaat mühendisinin sosyal rolünün verilmesi		Providing the social role of the civil engin
8	Ara sınav		Midterm Exam
9	İnşaat mühendisliğinde yaratıcılığın ve teknolojinin yan yana durduğu bilinci verilmesi		Providing the awareness that creativity a
10	İnşaat mühendisliğinde yaratıcılığın ve teknolojinin yan yana durduğu bilinci verilmesi		Providing the awareness that creativity a
11	Yapıların yapısal davranışları hakkında bilgi verilmesi		Providing information about the structur
12	Yapıların yapısal davranışları hakkında bilgi verilmesi		Providing information about the structur
13	Önemli yapı tiplerinin yük aktarımı ve basit boyutlandırma hakkında bilgi verilir		Information will be provided on load tra
14	Önemli yapı tiplerinin yük aktarımı ve basit boyutlandırma hakkında bilgi verilir		Information will be provided on load tra
15	Önemli yapı tiplerinin yük aktarımı ve basit boyutlandırma hakkında bilgi verilir		Information will be provided on load tra
16	Yarıyıl Sonu Sınavı		Final Exam

Course Learning Outcomes

No	Learning Outcomes
C01	In this module, students will be able to understand the fundamentals of structural science and why the challenging topics of mathematics and mechanics are necessary.
C02	Students will become familiar with the history of buildings, from the Greek temple to modern skyscrapers, important master builders, and their structures.
C04	Students will learn the fundamentals of the structural behavior of arches, beams, cables, and domes.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	9	108
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	1	14
Laboratory	0	0	0
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					
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	P01	P02	P04	P05
C01	4	3	3	3
C02	4	3	3	3
C04	4	3	3	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU107 Technical Drawing					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	BAU107	Technical Drawing	4	2,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to equip students with knowledge of technical drawing, including dimensioning, tolerancing, and standards. Additionally, it seeks to enable students to independently participate in 3D computer-aided design and modeling processes.

Teaching Methods and Techniques:

This course comprises the fundamentals of technical drawing as a source of information in design and manufacturing. It includes methods for creating and dimensioning components. It covers design hierarchy in the manufacturing process, an introduction to design methodology, the construction process, and production modularization. It also encompasses knowledge of standards and norms in technical drawing, as well as tolerancing. The course includes applications such as manually creating technical drawings of given elements while considering boundary and connection conditions. Additionally, it incorporates modeling studies using a three-dimensional computer-aided design (CAD) environment. Laboratory activities involve detailing the design with all necessary drawings. Furthermore, they comprise modeling applications within a three-dimensional computer-aided design environment.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. E. Vural Yavuz

Name of Lecturers:

Prof. Dr. E. Vural Yavuz

Assistants:

Research Assist. Ozan Subaşı / Research Assist. Uğur Günay

Recommended or Required Reading

Resources

Labisch, S., Wählich, G., Labisch, S., & Wählich, G. (2017). CAD: Technisches Zeichnen in der Praxis. Technisches Zeichnen: Eigenständig lernen und effektiv üben, 18-

Course Category

Mathematics and Basic Sciences	:		Education	:	:
Engineering	:		Science	:	:
Engineering Design	:	50	Health	:	:
Social Sciences	:		Field	:	50

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Fundamentals of technical drawing as a means of information for construction and manufacturing		
2	Fundamentals of technical drawing as a means of information for construction and manufacturing		
3	Representation and dimensioning of components		
4	Representation and dimensioning of components		
5	Introduction to Design Hierarchy and Design Methodology in Production Process		
6	Introduction to Design Hierarchy and Design Methodology in Production Process		
7	Introduction to Standard / Norm Information		
8	Midterm		
9	Introduction to Standard / Norm Information, Midterm Exam.		
10	Introduction to Standard / Norm Information		
11	Use of tolerance information and fits		
12	Use of tolerance information and fits		
13	Creating Manual Technical Drawings of the Given Elements Considering Boundary and Connection Conditions		
14	Elaborating the Design with All Necessary Drawings		
15	Modeling with 3D Computer Aided Design		
16	Final Examination		

Course Learning Outcomes

No Learning Outcomes

- C01 Gain the ability to utilize the fundamentals of technical drawing as an information source in design and manufacturing processes.
- C02 Apply basic methods for creating and dimensioning components to produce technical drawings.
- C03 Independently perform basic modeling processes within a three-dimensional computer-aided design environment.
- C04 Implement engineering approaches and use appropriate working techniques for simple designs.
- C05 Prepare production-ready documentation by detailing designs according to technical drawing principles.

Program Learning Outcomes

No Learning Outcome

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	1	14
Hours for off-the-c.r.stud	12	9	108
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	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							
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	P01	P02	P03	P04	P05	P06	P07
C01	5	4	5	4	3	5	5
C02	5	4	5	4	3	5	5
C03	5	4	5	4	3	5	5
C04	5	4	5	4	3	5	5
C05	5	4	5	4	3	5	5



BAU109 Statics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	BAU109	Statics	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to provide an understanding of the fundamental mechanical concepts and equilibrium equations used in the analysis of static systems. It seeks to enable students to comprehend the principles of force and moment, construct free-body diagrams, and determine static equilibrium conditions. Furthermore, students are expected to develop analytical and systematic approaches to engineering problems.

Teaching Methods and Techniques:

This course encompasses the fundamental concepts and equations of mechanics for static systems. It covers the equilibrium conditions of supports, load-bearing and truss systems, as well as the calculation of reaction forces in rigid systems. Additionally, it includes the analysis of internal forces in complex geometrical systems under bending and twisting conditions.

Prerequisites and co-requisites:

Course Coordinator:

Associate Prof.Dr. Ahmet Onur Pehlivan

Name of Lecturers:

Associate Prof.Dr. Ahmet Onur Pehlivan

Assistants:

Research Assist. Ferit Yardımcı/Research Assist. Uğur Günay

Recommended or Required Reading

Resources
Hibbeler, R. C. (2013). Technische Mechanik/2 - Festigkeitslehre (8. aktualisierte Aufl.). Pearson Studium.,Müller, W. H., & Ferber, F. (n.d.). Technische Mechanik für Inge
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Course Category

Mathematics and Basic Sciences	: 40	Education	:
Engineering	: 30	Science	:
Engineering Design	: 30	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to basic concepts, Forces acting on the same point of application, Equilibrium of rigid bodies		
2	Moment concept, Vector meaning of moment, Center of gravity		
3	Force groups, Force groups		
4	Moment balance, Vector meaning of moment, Center of gravity		
5	Center of mass of a volume, Volumetric, superficial and linear center of gravity		
6	Support reactions, Center of gravity		
7	Headstock, carrier and cage systems, Lattice systems, Ritter cutting method, Tilt bar		
8	Midterm Exam		
9	Truss systems, Intrinsic effects in bending beams		
10	Cross-section effects, Boundary and transition conditions		
11	Internal Influences		
12	Calculation of section effects in frame systems, Curved beam		
13	Calculation of section effects in frame systems, Curved beam		
14	Section effects, Section Effects		
15	Section effects, Section Effects		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	The students know the basic relationships of the technical mechanics of the rigid body (statics).
C02	They are familiar with the interdependencies of forces, moments and load transfer in components and are able to carry out static analyzes on structures (bars and beams) themselves.
C03	Based on what they have learned, the students are able to familiarize themselves independently with other areas of technical mechanics and to take the aspects of technical mechanics into account

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	5	70
Assignments	1	22	22
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
	P01	P02	P06	P07	
C01	5	3	4		
C02	5	3	4		
C03	5	3	4	4	



BAU112 Strenght of Materials					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	BAU112	Strenght of Materials	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to enable the stress analysis of bending and torsional moments for beam cross-sections under normal and shear forces. It seeks to develop an understanding of the relationship between cross-sectional geometry, normal, and shear stresses. It aims to equip students with the ability to independently calculate or approximate axial and polar moments of inertia as well as section modulus moments for simple and composite cross-sections. Furthermore, it seeks to provide an understanding of the relationship between the two-dimensional Mohr's circle and comparative stress concepts. The fundamentals of finite elements in linear elastic bodies are introduced to apply these concepts to relevant problems. Students are expected to recognize other fields of technical mechanics independently and consider the principles of technical mechanics in future projects.

Teaching Methods and Techniques:

This course includes the concepts of stress and strain. It encompasses statically determinate and indeterminate stress concepts. It covers shear and normal stresses as well as statically determinate and indeterminate bar systems. Additionally, it includes bending stress, Steiner's theorem, and the differential equation of the bending line. The course also comprises Mohr's analogy, the superposition principle, torsion, and twisting, while incorporating the stress tensor.

Prerequisites and co-requisites:

(BAU109)

Course Coordinator:

Asist Prof.Dr. Serdar Ulusoy

Name of Lecturers:

Asist Prof.Dr. Serdar Ulusoy

Assistants:

Research Assist. Ferit Yardımcı Research Assist. Halit Emre Uygun Research Assist. Uğur Günay

Recommended or Required Reading

Resources	
	Wolfgang H. Müller, Ferdinand Ferber, Technische Mechanik für Ingenieure, 4. Auflage, Hanser Verlag / Fachbuch Verlag Leipzig, „Martin Mayr: Technische Mechanik. Üb
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	-
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Course Category

Mathematics and Basic Sciences	: 40	Education	:
Engineering	: 30	Science	:
Engineering Design	: 30	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction; Terms		
2	Tensile and compressive stress and HOOKE's law		
3	Tensile and compressive stress and HOOKE's law		
4	Shear stress and HOOKE's law Exercise: internal forces, tension and compression in bars		
5	Bending stress on the beam		
6	Bending stress on the beam		
7	The elastic line of the bending beam (bending line)		
8	Midterm Exam		
9	The elastic line of the bending beam (bending line) Exercise: calculation of the bending line		
10	The elastic line of the bending beam (bending line) Exercise: calculation of the bending line		
11	Axial rotation / torsion		
12	Axial rotation / torsion Exercise: crooked bend, torsion		
13	Compound stress		
14	Compound stress		
15	Compound stress		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students perform stress analysis for bending and torsional moments of beams with any cross-section under normal and shear forces.
C02	Students learn the relationships between cross-sectional geometry, normal, and shear stresses.
C03	Students independently calculate the axial and polar surface inertia and section modulus moments for simple and composite cross-sections or evaluate them using approximate formulas.
C04	Students learn the relationships between the two-dimensional Mohr's circle and the concept of comparative stress.
C05	Based on what they have learned, students independently recognize other areas of technical mechanics.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	5	70
Assignments	2	11	22
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes					
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	P01	P02	P06	P07
C01	5	3	4	
C02	5	3	4	
C03	5	3	4	
C04	5	3	4	
C05	5	3	4	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU201 Construction Materials and Chemistry I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU201	Construction Materials and Chemistry I	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to provide students with fundamental knowledge of material classification, properties, and the production of binding materials such as cement. The course's goal is to teach the basic principles of material science, help students understand the chemical and physical properties of cement, and provide comprehensive information about the cement production process. Additionally, it seeks to enable students to grasp the role of material properties in engineering applications and to make informed decisions in material selection while considering environmental impacts.

Teaching Methods and Techniques:

The course begins with the classification and properties of materials, then explores atomic structure, mechanical properties of materials, and elastic-plastic deformation. An introduction to cement and binding materials will be given, covering cement types, production processes, chemical and mineralogical structures, and physical properties. The hydration process of cement and its environmental impacts will be discussed, along with information on alternative binders. The effects of chemical additives and fundamental concepts in material science will also be covered.

Prerequisites and co-requisites:**Course Coordinator:**

Associate Prof.Dr. Ahmet Onur Pehlivan

Name of Lecturers:

Associate Prof.Dr. Ahmet Onur Pehlivan

Assistants:

Research Assist. Ali Banş KATRANCI

Recommended or Required Reading

Resources Properties of Concrete, Prentice Hall, Fourth Edition, London, 2000, A. M. Neville, Concrete: Microstructure, Properties and Materials, McGraw-Hill Professional, Third Edition

Course Category

Mathematics and Basic Sciences : 10	Education Science : 10
Engineering : 60	Health Field : 10
Engineering Design : 10	
Social Sciences :	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction	-	-
2	Classification of Materials, Properties of Materials	-	-
3	Atomic structure, Atomic Arrangement	-	-
4	Mechanical properties of materials	-	-
5	Stress-deformation, elasticity	-	-
6	Elastic and plastic deformation, ductility, hardness, toughness, resilience	-	-
7	Dislocations	-	-
8	Midterm Exam	-	-
9	Introduction to Cement and Binding Materials	-	-
10	Cement Types and Production Process	-	-
11	Chemical and Mineralogical Structure of Cement	-	-
12	Physical Properties of Cement	-	-
13	Hydration Process of Cement	-	-
14	Environmental Impacts of Cement and Alternative Binders	-	-
15	Chemical Additives	-	-
16	Final Exam	-	-

Course Learning Outcomes

No	Learning Outcomes
C01	Understands the basic relationships between building materials and structure.
C02	Identifies construction materials, evaluates their properties, and demonstrates proficiency in metrological methods used in material testing
C03	Recognizes the range of materials used in construction and understands their basic characteristics.
C04	Identifies material properties, evaluates their relationship with construction practices, and selects appropriate materials.
C05	Learns basic working techniques in the laboratory and summarizes laboratory experiments in protocols.
C06	Develops theoretical and practical skills related to laboratory applications, independently evaluates results, and interprets them from a scientific perspective.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	3	%20
Assignment	3	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	5	70
Assignments	3	7	21
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	2	28
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
C01	5	4	3	4	2	3	4
C02	4	5	3	4	3	4	5
C03	3	3	5	3	3	4	3
C04	4	4	3	5	4	3	4
C05	2	3	3	3	5	3	3
C06	3	4	4	3	3	5	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU202 Structural Analysis I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU202	Structural Analysis I	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to equip students with the fundamental principles and working techniques of classical statics and enable them to apply these concepts to the typical calculations of statically determinate bar structures. It seeks to develop students' ability to systematically approach engineering problems by understanding force and equilibrium principles. Additionally, it intends to enhance their engineering skills by utilizing fundamental methods for the analysis and solution of structural systems.

Teaching Methods and Techniques:

This course encompasses the definition of essential elements for modeling bar structures and the explanation of the static and geometric properties of support systems. It includes the derivation of fundamental equations under static effects for calculations based on first-degree theory. The analysis of statically determinate bar structures is covered by addressing the principle of structure, the principle of section, and the principles of mechanics, along with methods such as the virtual displacement principle and the virtual force principle. Through these methods, students are expected to determine system conditions and calculate the deformations of statically determinate support systems. Additionally, it incorporates applications for determining force and displacement diagrams.

Prerequisites and co-requisites:

(BAU112)

Course Coordinator:

Prof. Dr. Murat Hamderi

Name of Lecturers:

Prof. Dr. Murat Hamderi

Assistants:

Research Assist. Ferit Yardımcı

Recommended or Required Reading**Resources**

Girgin, K., Aksoylu, M. G., Durgun, Y., & Danılmaz, K. (2011). Yapı Statiği, İzostatik Sistemler. Çözümlü Problemler, Birsen Yayınevi, İstanbul.
Dallmann, R. (2020). Baustatik 1: Berechnung statisch bestimmter Tragwerke. Carl Hanser Verlag GmbH Co KG.
Ders Notları

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:	60	Science	:	
Engineering Design	:	40	Health	:	
Social Sciences	:		Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Basic Principles and Techniques of Classical Statics	Lecture Notes	Lecture Notes
2	Statically determinate structures	Lecture notes	Lecture notes
3	Visual representations of moment, shear force and axial force	Lecture notes	Lecture notes
4	Statically determined frame structures	Lecture notes	Lecture notes
5	Displacements in statically determined truss systems using virtual work method	Lecture notes	Lecture notes
6	Displacements of statically determined beams using virtual work method	Lecture notes	Lecture notes
7	Displacements in statically determined frames using the virtual work method	Lecture notes	Lecture notes
8	Midterm Exam	Lecture notes	Lecture notes
9	Introduction to stiffness method, derivation of equations	Lecture notes	Lecture notes
10	Introduction to stiffness method, derivation of equations	Lecture notes	Lecture notes
11	Introduction to stiffness method, derivation of equations	Lecture notes	Lecture notes
12	Force and displacement calculations by stiffness method in articulated systems	Lecture notes	Lecture notes
13	Force and displacement calculations by stiffness method in articulated systems	Lecture notes	Lecture notes
14	Force and displacement calculations by stiffness method in articulated systems	Lecture notes	Lecture notes
15	Force and displacement calculations by stiffness method in articulated systems	Lecture notes	Lecture notes
16	Final Exam	Lecture notes	Lecture notes

Course Learning Outcomes

No	Learning Outcomes
C01	Students learn the basic principles and techniques of classical statics.
C02	The student learns the static calculations of certain bar structures.
C03	Students can make static modeling.
C04	The student gains the ability to select the right method for a static calculation, to interpret the results of the calculation and to evaluate critically.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	6	84
Assignments	1	10	10
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	1	14
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					
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bbb					
	P01	P02	P04	P06	
C01	5	4	1	4	
C02	5	4	3	5	
C03	5	4	3	5	
C04	5	4	1	4	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU203 Construction Engineering I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BAU203	Construction Engineering I	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to provide students with fundamental knowledge of the material strength properties of structural elements such as timber, steel, and reinforced concrete used in structural engineering. It seeks to enable students to understand and apply the design principles of structural models in accordance with Eurocode 2, 3, and 5 standards. Initially, it intends to classify steel sections that are not under stability risk and design them according to Eurocode 3 under various loading conditions (bending, shear, normal force, and combined effects). For reinforced concrete sections, the course aims to determine suitable sections under the effects of axial compression, eccentric compression and tension, bending, and shear forces. Finally, it is intended to equip students with the ability to analyze the behavior of reinforced concrete and steel structural elements under torsional moment effects.

Teaching Methods and Techniques:

This course includes information and applications on sectional design of steel and reinforced concrete structural elements.

Prerequisites and co-requisites:

(BAU202)

Course Coordinator:

Asist Prof.Dr. Serdar Ulusoy

Name of Lecturers:

Asist Prof.Dr. Serdar Ulusoy

Assistants:

Research Assist. Uğur Günay

Recommended or Required Reading

Resources

Standard, B. (1993). Eurocode 3—Design of steel structures—, BS EN, 1(1), 2005.
Standard, B. (2004). Eurocode 2: Design of concrete structures—. Part, 1(1), 230.

Course Category

Mathematics and Basic Sciences	:		:	
Engineering	:	50	:	
Engineering Design	:	50	:	
Social Sciences	:		:	
Education Science	:		:	
Health Field	:		:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	introduction"General information on structural engineering"	Lecture Notes	Lecture Notes
2	Assessment basis	Lecture Notes	Lecture Notes
3	Materials (Steel)	Lecture Notes	Lecture Notes
4	Materials (Reinforced Concrete)	Lecture Notes	Lecture Notes
5	Bond between steel and concrete	Lecture Notes	Lecture Notes
6	Cross-section design for steel components"Cross-sectional classification"	Lecture Notes	Lecture Notes
7	Cross-section design for steel components "Elastic-elastic design method"	Lecture Notes	Lecture Notes
8	Midterm Exam	Lecture Notes	Lecture Notes
9	Cross-section design for steel components "Elastic-plastic design method"	Lecture Notes	Lecture Notes
10	Cross-section design for reinforced concrete components "Cross-section design under compression and tension"	Lecture Notes	Lecture Notes
11	Cross-section design for reinforced concrete components "Section design under bending"	Lecture Notes	Lecture Notes
12	Cross-section design for reinforced concrete components "Section design under bending"	Lecture Notes	Lecture Notes
13	Cross-section design for reinforced concrete components "Cross-section design under shear force"	Lecture Notes	Lecture Notes
14	Torsion in steel construction	Lecture Notes	Lecture Notes
15	Torsion in reinforced concrete construction	Lecture Notes	Lecture Notes
16	Final Exam	Lecture Notes	

Course Learning Outcomes

No	Learning Outcomes
C01	Have knowledge about the regulations in Structural Engineering (Eurocode 2,3 and 5).
C02	Gains knowledge of building materials and their characteristic strength properties.
C03	Gains the knowledge and skills necessary for the design of steel structural elements that are not under stability hazard.
C04	Gains the knowledge and skills necessary for the cross-sectional design of reinforced concrete components applied under different loads.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P04	P06	P07	
C01	5	3	4			3
C02	5	1				3
C03	5			5		
C04	5			5		



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU204 Structural Analysis II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BAU204	Structural Analysis II	5	4	6

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Compulsory

Objectives of the Course:
This course aims to enable students to comprehend the theoretical foundations of statically indeterminate structures and learn the associated calculation methods. It seeks to develop their understanding of the fundamental principles for analyzing statically indeterminate systems and applying them to engineering problems. Additionally, it intends to equip students with the ability to determine internal forces and deformations in such structures using various solution techniques.

Teaching Methods and Techniques:
This course includes the presentation of the force-magnitude method and the displacement-length method in a classical context. It encompasses the application of these methods for the bidirectional identification of the static indeterminacy of bar structures through forces or displacements. Additionally, it covers the fundamental principles of system condition calculations, determining internal forces and displacements. The course also incorporates the study of how force and displacement diagrams are influenced using the force and displacement method or the rotation angle method.

Prerequisites and co-requisites:
(BAU202)

Course Coordinator:
Prof. Dr. Murat Hamderi

Name of Lecturers:
Prof. Dr. Murat Hamderi

Assistants:
Research Assist. Ferit Yardımcı

Recommended or Required Reading	
Resources	Dallmann, R. (2020). Baustatik 2: Berechnung statisch bestimmter Tragwerke. Carl Hanser Verlag GmbH Co KG. Dallmann, R. (2020). Baustatik 1: Berechnung statisch bestimmter Tragwerke. Carl Hanser Verlag GmbH Co KG.

Course Category			
Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 60	Science	:
Engineering Design	: 20	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	Influence Lines	Influence Lines	Fundamentals of Structural Analysis 5th
2	Introduction to hyperstatic systems		Fundamentals of Structural Analysis 5th
3	Introduction to force method		Fundamentals of Structural Analysis 5th
4	Solution of 1st order hyperstatic systems by force method		Fundamentals of Structural Analysis 5th
5	Solution of 1st order hyperstatic systems by force method		Fundamentals of Structural Analysis 5th
6	Solution of 1st order hyperstatic systems by force method		Fundamentals of Structural Analysis 5th
7	Introduction to cross method		Fundamentals of Structural Analysis 5th
8	Midterm Exam		Fundamentals of Structural Analysis 5th
9	Solution of beams by cross method		Fundamentals of Structural Analysis 5th
10	Solution of frame systems by cross method		Fundamentals of Structural Analysis 5th
11	Introduction to matrix methods		Fundamentals of Structural Analysis 5th
12	Analysing beams by matrix methods		Fundamentals of Structural Analysis 5th
13	Analysing beams by matrix methods		Fundamentals of Structural Analysis 5th
14	Analysing beams by matrix methods		Fundamentals of Structural Analysis 5th
15	Analysing beams by matrix methods		Fundamentals of Structural Analysis 5th
16	Final Exam		Fundamentals of Structural Analysis 5th

Course Learning Outcomes	
No	Learning Outcomes
C01	Students learn the force method and acquire the ability to analyze statically indeterminate structures.
C02	Students comprehend the displacement-length method and gain the competence to perform deformation analysis of structural systems.
C03	Students learn to construct static and kinematic influence lines and develop the ability to evaluate structural load transfer.
C04	Students conduct stability analysis of bar elements and gain the competence to interpret critical load and buckling behavior.
C05	Students learn energy methods in structural mechanics and acquire the ability to apply these methods in deformation calculations.
C06	Students learn the fundamental principles of the finite element method and gain the competence to apply it in engineering analyses.

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	8	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	6	84
Assignments	1	24	24
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
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						
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bbb						
	P01	P02	P04	P06	P07	
C01	5	3	5	3	5	
C02	5	3	5	3	5	
C03	5	3	5	3	5	
C04	5	3	5	3	5	
C05	5	3	5	3	5	
C06	5	3	5	3	5	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU205 Fluid Mechanics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BAU205	Fluid Mechanics	5	3,5	6

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Compulsory

Objectives of the Course:
This course aims to enable students to solve hydromechanical problems encountered in the planning and design of engineering projects such as river structures, coastal structures, water supply, and wastewater systems. It seeks to equip them with the theoretical and practical foundation needed to calculate hydrostatic pressure and hydromechanical forces generated by moving flows. Additionally, it intends for students to learn the fundamental principles of designing pipe and open channel systems and apply this knowledge in practical engineering contexts.

Teaching Methods and Techniques:
This course includes the fundamental properties of fluids and the concepts of hydrostatic pressure and forces. It encompasses the kinematic and kinetic analysis of fluids, including the application of mass, energy, and momentum conservation equations. The course covers real fluid flow, turbulence, boundary layer theory, and potential flow. It includes engineering approaches to groundwater movement and flow forces. Additionally, it encompasses the hydraulic analysis of pipelines and open channels while incorporating hydrodynamic similarity principles through physical and numerical modeling techniques.

Prerequisites and co-requisites:

Course Coordinator:
Asist Prof.Dr. Mehmet Adil AKGÜL

Name of Lecturers:
Asist Prof.Dr. Mehmet Adil AKGÜL

Assistants:
Research Assist. Furkan Sencer KAÇAR

Recommended or Required Reading	
Resources	Kirkgöz, M.S. (2013). Akışkanlar Mekaniği. Birsen Publishing.,White, F.M. (2011). Fluid Mechanics. MacGraw-Hill Publishing, Strömungsmechanik für Bauingenieure, M. A. Akgül, 2024.

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

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	Introduction, history, definitions. Physical properties of fluids.		
2	Hydrostatics. Pressure and its variation with depth. Hydrostatic forces.		
3	Hydrostatic forces. Equilibrium of floating bodies. Kinematics of fluids.		
4	Continuity equation for ideal fluids and its applications.		
5	Bernoulli equation for ideal fluids and its applications.		
6	Impulse-momentum equation and applications.		
7	Flow of real fluids: Turbulence and its effects, vorticity, circulation.		
8	Midterm exam.		
9	Potential flow, groundwater flow.		
10	Pipeline flow 1.		
11	Pipeline flow 2.		
12	Open channel flow 1.		
13	Open channel flow 2.		
14	Boundary layers. Hydrodynamic forces.		
15	Hydrodynamic similarity. Physical and numerical models.		
16	Final exam		

Course Learning Outcomes	
No	Learning Outcomes
C01	Students learn the physical properties of fluids and understand their effects on engineering problems.
C02	Students acquire the ability to solve problems related to pressure, pressure forces, and buoyancy in static fluids.
C03	Students can explain the interaction and behavior of turbulence, boundary layers, and hydrodynamic forces in real fluid flow.
C04	Students gain the competence to solve fundamental engineering problems related to pipeline design.
C05	Students can analyze and solve fundamental engineering problems related to the design of open channels.
C06	Students can calculate hydrodynamic forces acting on small structures such as piles, pier foundations, and chimneys.
C07	Students develop the ability to use hydrodynamic similarity in hydraulic model design and data evaluation.

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	6	%30
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	4	56
Assignments	6	6	36
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	14	1	14
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
	P01	P02	P06	P07	
C01	4	1	1	3	
C02	5	4	1	1	
C03	1	1	1	1	
C04	5	5	1	4	
C05	4	5	1	4	
C06	4	5	1	1	
C07	5	3	4	5	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU207 Constructional Materials and Chemistry II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BAU207	Constructional Materials and Chemistry II	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is to provide civil engineering students with a basic knowledge of mortar and concrete materials and to provide them with an understanding of the properties, uses and applications of these materials in structural engineering. Students will learn about the types and properties of aggregates, concrete mix calculations, fresh and hardened properties of concrete, durability of concrete and quality control methods. In addition, students will gain the ability to make sound decisions in material selection and mix design.

Teaching Methods and Techniques:

In this course, types and properties of aggregates for mortar and concrete will be examined, aggregate requirements and grain size distribution will be discussed. The properties of fresh concrete, hardened concrete properties, concrete mix calculations and concrete quality control tests will be studied in laboratory environment and the factors affecting the durability of concrete will be explained. Masonry, bituminous materials and fibres will also be covered.

Prerequisites and co-requisites:

(BAU201)

Course Coordinator:

Associate Prof.Dr. Ahmet Onur Pehlivan

Name of Lecturers:

Associate Prof.Dr. Ahmet Onur Pehlivan

Assistants:

Research Assist. Ali Banş KATRANCI

Recommended or Required Reading

Resources Properties of Concrete, Prentice Hall, Fourth Edition, London, 2000, A. M. Neville, Concrete: Microstructure, Properties and Materials, McGraw-Hill Professional, Third Edition

Course Category

Mathematics and Basic Sciences	: 10	Education	: 5
Engineering	: 50	Science	: 15
Engineering Design	: 5	Health	: 5
Social Sciences	:	Field	: 10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		
2	Aggregates for mortar and concrete (Types and properties of aggregates - requirements for aggregates)		
3	Aggregates for mortar and concrete (Particle size distribution and grading curves)		
4	Fresh Concrete Properties 1	-	
5	Fresh Concrete Properties 2	-	
6	Hardened Concrete Properties 1	-	
7	Hardened Concrete Properties 2	-	
8	Midterm Exam		
9	Durability 1	-	
10	Durability 2	-	
11	Concrete Mixture Calculations	-	
12	Concrete Quality Control Tests and Statistical Studies	-	
13	Bituminous Materials	-	
14	Masonry and Masonry Structures	-	
15	Fibres	-	
16	Final Exam	-	

Course Learning Outcomes

No	Learning Outcomes
C01	Recognise the types, properties and requirements of aggregates used for mortar and concrete.
C02	Define the physical and mechanical properties of fresh concrete and hardened concrete and relate the effects of these properties on concrete quality.
C03	Performs concrete mix calculations and applies the necessary methods to optimise the properties of different concrete mixes.
C04	Acquire theoretical and practical skills for laboratory work on building materials.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	3	%20
Assignment	3	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	5	70
Assignments	3	7	21
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	2	28
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	4	3	1	2	2	5	3
C02	5	4	2	3	3	5	4
C03	5	4	2	3	3	5	4
C04	4	3	2	3	3	5	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU209 Kinematics and Dynamics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU209	Kinematics and Dynamics	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to teach students the principles of kinematics and dynamics in civil engineering. It seeks to enable students to understand the applications of motion, forces, and energy in the context of civil engineering. Additionally, it aims to equip students with the competence to model and analyze the dynamic behavior of structures and construction systems. The course aims to develop students' abilities to perform engineering calculations and examine the kinematic motions of structural systems. Through this course, students will gain the ability to solve dynamic and kinematic problems encountered in civil engineering projects.

Teaching Methods and Techniques:

This course includes the principles of kinematics and dynamics in civil engineering. It covers the applications of motion, forces, and energy in engineering, as well as the dynamic behavior of structures. The course includes the processes of modeling and analyzing the kinematic motions of structures. Additionally, it encompasses the fundamental principles and methods for engineering calculations and dynamic analysis of structural systems. The course includes the competence to evaluate and solve the behavior of structures and construction systems under dynamic loads.

Prerequisites and co-requisites:

(BAU109)

Course Coordinator:

Asist Prof.Dr. Merve Teke Budak

Name of Lecturers:

Asist Prof.Dr. Merve Teke Budak

Assistants:

Recommended or Required Reading

Resources	
	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://mec
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Course Category

Mathematics and Basic Sciences	: 30	Education	:
Engineering	: 30	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	: 40

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Fundamentals of kinematics the terms force		
2	Torque		
3	Work, performance, energy,		
4	Power, energy, momentum, angular momentum		
5	Set of center of gravity and twist set elastic and not elastic shocks		
6	Set of center of gravity and twist set elastic and not elastic shocks		
7	The movement of the rigid body (angular velocity, inertial tensor, basic concepts of gyro theory)		
8	Midterm		
9	The movement of the rigid body (angular velocity, inertial tensor, basic concepts of gyro theory)		
10	The movement of the rigid body (angular velocity, inertial tensor, basic concepts of gyro theory)		
11	Theory of vibrations (free and forced vibrations, damping, resonance)		
12	Theory of vibrations (free and forced vibrations, damping, resonance)		
13	Theory of vibrations (free and forced vibrations, damping, resonance)		
14	Vibrations of systems with two degrees of freedom dynamic stability		
15	Vibrations of systems with two degrees of freedom dynamic stability		
16	Final Exam		

Course Learning Outcomes

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

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes				
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bbb				
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	P01	P03	P06
C01	4	4	5
C02	4		
C03		4	



BAU251 Numerical Methods in Civil Engineering					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BAU251	Numerical Methods in Civil Engineering	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The objective of this course is to provide students with fundamental knowledge of finite element analysis and how to utilize this knowledge to the solution of civil engineering problems at intermediate levels

Teaching Methods and Techniques:

At the end of this course, students should acquire knowledge of methods of formulating finite element equations, basic element types, the use of finite element methods for solving problems in structural, geotechnical and continuum analysis and the utilize of finite element software packages.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat Hamderi (Yerine)

Name of Lecturers:

Prof. Dr. Murat Hamderi (Yerine)

Assistants:

Recommended or Required Reading

Resources

Gandhi, C. P. Numerical Methods in Civil Engineering. University Science Press, 2015, Butcher, John Charles. Numerical methods for ordinary differential equations. John W. NUMERICAL METHODS IN CIVIL ENGINEERING

Course Category

Mathematics and Basic Sciences	: 30	Education	:	
Engineering	: 30	Science	:	
Engineering Design	: 30	Health	:	
Social Sciences	:	Field	:	10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction Solutions of Equations in One Variable		
2	Interpolation and Polynomial Approximation		
3	Numerical Differentiation		
4	Numerical Integration		
5	Initial Value Problems for Ordinary Differential Equations		
6	Initial Value Problems for Ordinary Differential Equations		
7	Boundary Value Problems for Ordinary Differential Equations		
8	Midterm Exam		
9	Numerical solutions to Partial Differential Equations		
10	Numerical solutions to Partial Differential Equations		
11	Analysis of One-Dimensional Problems		
12	Analysis of Two-Dimensional Elements		
13	Three Dimensional Analysis		
14	Case Studies		
15	Case Studies		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to understand and explain the basic principles of the Finite Element Method (FEM) and its application in solving structural engineering problems.
C02	Students will be able to apply the Finite Element Method to solve medium-level structural engineering problems, such as the analysis of beams, frames, and trusses under various load conditions, u
C03	Students will be able to model and solve structural problems by using the Finite Element Method, including the process of mesh generation, boundary condition application, and post-processing of r
C04	Students will be able to perform basic structural performance analysis, including stress, strain, and displacement analysis for medium-complexity structures. They will understand how to interpret th

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	2	28
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
C01	3	3	2	4	3	2
C02	4	4	3	4	2	2
C03	3	4	2	4	3	2
C04	4	4	2	4	2	2



BAU252 Structural Physics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BAU252	Structral Physics	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to provide an understanding of the fundamental principles and applications of building physics, enable the analysis of the physical and mechanical properties of building materials, evaluate the interaction of building elements with heat, moisture, sound, and light, and examine their impact on building performance.

Teaching Methods and Techniques:

The course covers the fundamental concepts of building physics, the physical and mechanical properties of building materials, principles of heat, moisture, and sound insulation, daylighting and lighting techniques, the evaluation of building elements in terms of energy efficiency, and building performance analysis. Additionally, it includes current regulations and standards related to building physics.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources	Mehta, P. K., Monteiro, P. J. M. (2014). Concrete: Microstructure, Properties, and Materials. McGraw-Hill., Heat and Mass Transfer: Fundamentals and Applications. Nobel Building Physics From physical principles to international standards Marko Pinteric
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Course Category

Mathematics and Basic Sciences : 10	Education :
Engineering : 30	Science : 20
Engineering Design : 30	Health :
Social Sciences :	Field : 10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Building Physics and Fundamental Concepts		
2	Physical and Mechanical Properties of Building Materials		
3	Principles of Heat Conduction, Convection, and Radiation		
4	Heat Insulation and Energy Efficiency in Buildings		
5	Moisture and Waterproofing Principles		
6	Acoustic Comfort and Sound Insulation		
7	Daylighting, Lighting, and Visual Comfort		
8	Midterm Exam		
9	Thermal Performance Analysis of Building Elements		
10	Applications of Building Physics in Sustainable Building Design		
11	Building Energy Modeling Methods in Terms of Building Physics		
12	Building Physics in the Context of Regulations and Standards		
13	Practical Building Performance Analysis		
14	New Technologies and Innovative Approaches in Building Physics		
15	General Evaluation and Case Studies		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can define the fundamental principles of building physics.
C02	Can analyze the physical and mechanical properties of building materials.
C03	Can evaluate the interaction of building elements with heat, sound, moisture, and light.
C04	Can interpret building physics principles in terms of energy efficiency and sustainability.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06
C01	4	3	2	3	4	2
C02	4	3	3	3	4	2
C03	4	3	3	3	4	2
C04	4	3	3	3	4	2



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU301 Construction Engineering II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU301	Construction Engineering II	6	5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to enable students to comprehend the stability problems of components subjected to compressive stress (buckling, lateral-torsional buckling, torsional buckling tendency, and the model column method). It seeks to develop their understanding of prestressing principles and their application in engineering practices. Additionally, it intends to equip students with the ability to determine and evaluate the ultimate load capacity of composite steel beams. The course also aims for students to learn the design principles of typical steel construction joints, including welded and bolted connections. Finally, it is intended that students grasp plate structure theory and the analysis methods of solid covering plates, applying them in structural design processes.

Teaching Methods and Techniques:

This course encompasses the fundamental principles of designing steel and reinforced concrete structural elements. It includes topics on cross-section design, connection details, and stability analysis of steel structural members. The course also covers the sizing of reinforced concrete elements, reinforcement arrangements, and calculation methods for determining load-bearing capacities. Additionally, it incorporates the design principles of these structural elements in compliance with international standards and regulatory requirements.

Prerequisites and co-requisites:

(BAU203)

Course Coordinator:

Asist Prof.Dr. Serdar Ulusoy

Name of Lecturers:

Asist Prof.Dr. Serdar Ulusoy

Assistants:

Research Assist. Uğur Günay

Recommended or Required Reading**Resources**

Zilch, K., Diederichs, C. J., & Katzenbach, R. (2002). Konstruktiver Ingenieurbau und Hochbau (pp. 595-1094). Springer Berlin Heidelberg.

Krauss, F., & Führer, W. (2011). Grundlagen der Tragwerkelehre: Band 2. Springer.

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Course Category**Mathematics and Basic Sciences** :

: 50

Engineering Design :

: 50

Social Sciences :

:

Education :

:

Science :

:

Health :

:

Field :

:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	introductionStability theory: bucklingconcept of buckling length		
2	Stability theory: N + MyBuckling lengths, pendulum supportsStability Theory: N (Replacement st.)Buckling lengths, pendul		
3	model support methodModel Column - Moment Curvature RelationStability Theory: N (Theo II. O.)Stability Theory: N+My		
4	Stability Theory: N+MyStability theory: N + My + Mzmodel support procedureStability theory: M+My+Mz		
5	model support methodother stability issuesStability theory: M+My+Mz		
6	Model support method (M-k)BDK, proof of the compression belt, tiltingmodel support method		
7	BDK, proof of the compression belt, tiltingBias : TheorypreloadBDK		
8	Midterm		
9	preload Construction, composite beamcomposite beam preload		
10	compound (pos. / neg. moment)Fasteners: screwsMeans of connection: weldingcomposite beam		
11	compound (pos. / neg. moment)Fasteners: screwsMeans of connection: weldingcomposite beam		
12	Means of connection: screws I (tension joint)Plates IPlates IIScrew connection & console connection		
13	Lanyards: Bolts II (beam splice)Means of connection: weldingPlates I welded joint		
14	Plates II dot platedot plate 1plate dimensioning		
15	Plates II dot platedot plate 1plate dimensioning		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01 Students acquire knowledge about structural engineering regulations such as Eurocode 2, 3, and 5.

C02 Students learn the characteristic strength properties of structural materials and gain knowledge of their load-bearing capacities.

C03 Students gain the necessary knowledge and skills to design cross-sections of steel elements that do not compromise stability.

C04 Students acquire the knowledge and skills to design cross-sections of reinforced concrete components under different loading conditions.

Program Learning Outcomes**No Learning Outcome**

P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.

P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact

P03 The ability to communicate effectively with diverse audiences.

P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,

P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.

P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.

P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	4	56
Hours for off-the-c.r.stud	13	6	78
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P05	P06	P07	
C01	5	4	4	5	5	
C02	5	4	4	5	4	
C03	5	4	4	5	4	
C04	5	4	4	5	5	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU302 Soil Mechanics and Foundations I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
6	BAU302	Soil Mechanics and Foundations I	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The course aims to define and assess the physical and mechanical properties of soil as a foundation material. It seeks to teach fundamental soil investigation procedures and methods for analyzing stresses and settlements in soil. The course also addresses the design, load assumptions, and stability verification of foundations and supporting structures for buildings and engineering projects. Additionally, a voluntary semester-long project is intended to help students develop practical skills in these areas.

Teaching Methods and Techniques:

The course includes the physical and mechanical properties of soil and their determination in laboratory settings. It covers geotechnical soil investigations, stresses in soil, and the shear and deformation behavior of soils. Additionally, it addresses potential and groundwater flows, structural design, and static calculations. The course also incorporates stability verification of shallow foundations and retaining walls, as well as the assessment of settlement-time behavior.

Prerequisites and co-requisites:

(BAU112)

Course Coordinator:

Prof. Dr. Murat Hamderi

Name of Lecturers:

Prof. Dr. Murat Hamderi

Assistants:

Research Assist. Recep Özkan Research Assist. Ozan Subaşı

Recommended or Required Reading

Resources	
	Lang, H. J., Huder, J., Amann, P., & Puzrin, A. M. (2011). Bodenmechanik und Grundbau: Das Verhalten von Böden und Fels und die wichtigsten grundbaulichen Konzepte
	Lecture Notes and Lecture Presentations
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Course Category

Mathematics and Basic Sciences	:		:	
Engineering	:	50	:	30
Engineering Design	:	10	:	
Social Sciences	:	10	:	
			:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction, formation of rocks and soil		
2	Physical properties of the soil		
3	Water in the subsoil		
4	Stresses in the soil		
5	Stress transformation and representation in Mohr's stress circle		
6	Settlement calculation		
7	Pressure and time-settlement behavior		
8	Midterm Exam		
9	Shear strength		
10	Introduction to earth pressure and earth pressure theories		
11	Distribution of the earth pressure and graphical methods of determining the earth pressure		
12	Basics of geotechnical design		
13	Geotechnical report and standards		
14	Stability Control		
15	Static failure and failure theories		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students learn to describe the physical properties of soil and assess its mechanical behavior as a building ground.
C02	Students can understand soil stresses and determine settlements.
C03	Students learn and apply settlement calculation methods in civil engineering structures.
C04	Students can design shallow foundations and retaining walls, analyze their stability, and assess their performance.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	6	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	4	56
Assignments	6	6	36
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	14	1	14
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	3	2	3	2	4	4
C02	5	3	1	3	2	5	4
C03	5	4	2	3	2	5	4
C04	5	5	2	4	3	5	4



BAU303 Transportation					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU303	Transportation	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to teach students the fundamental concepts and principles of transportation engineering. It seeks to convey the basic components of highway transportation. In addition, it aims to provide knowledge on the planning, design, operation, and management of transportation systems. The course also intends to build a basic level of awareness regarding transportation infrastructure and traffic engineering. Furthermore, it aims to enable students to evaluate transportation solutions by considering environmental, economic, and social impacts. Finally, it seeks to develop the competence to plan sustainable transportation in line with fundamental engineering principles.

Teaching Methods and Techniques:

This course includes the fundamental principles and concepts of transportation engineering. It covers the basic components of highway transportation. Additionally, it includes the processes of planning, design, operation, and management of transportation systems. It covers topics related to traffic flow theory and an introduction to traffic engineering. Moreover, it includes the classification of transportation infrastructures and design fundamentals. It covers the environmental, economic, and social impacts on transportation. Finally, it includes essential knowledge of sustainable transportation planning and intelligent transportation systems.

Prerequisites and co-requisites:**Course Coordinator:**

Asist. Prof. Dr. Ömer Faruk Aydın

Name of Lecturers:

Asist. Prof. Dr. Ömer Faruk Aydın

Assistants:**Recommended or Required Reading****Resources**

Yayla, N. (2011). Karayolu mühendisliği., Kök, B. V. (2019). Karayolu mühendisliği ve tasarımı. Nobel Akademik Yayıncılık., Treiber, M., & Kesting, A. (2013). Traffic flow dy

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Course Category

Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 40	Science	:
Engineering Design	: 40	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		
2	Transportation Fundamentals		
3	Network Planning		
4	Usage Rights		
5	Driving Dynamics		
6	Introduction to Methodology		
7	Design Flow		
8	Midterm		
9	Templates		
10	Nodes		
11	Nodes		
12	Design Elements in Site Plan		
13	Design elements in elevation plan and cross section		
14	Routing		
15	Road Construction		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can explain the fundamental concepts and principles of transportation engineering.
C02	Can identify the components of highway transportation systems.
C03	Can analyze the planning, design, and operation processes of transportation systems.
C04	Can use basic knowledge of traffic flow and traffic engineering to solve problems.
C05	Can develop sustainable transportation solutions considering environmental, economic, and social impacts.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	1	%30
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	10	8	80
Assignments	1	28	28
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	28
Laboratory	0	0	0
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				
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	P01	P02	P04
C01	4		
C02		3	
C03	4		
C04	4		
C05			4



BAU304 Soil Mechanics and Foundations II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BAU304	Soil Mechanics and Foundations II	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

To learn about the types and purposes of different foundation systems and structures. Additionally, evaluating the applicability of foundation solutions in changing soil conditions is among the objectives of the course. In addition, it is aimed to create the necessary theoretical background for the design and construction of foundation and retaining systems and to develop the ability to analyze the stability of slopes.

Teaching Methods and Techniques:

The course includes the execution and evaluation of lab tests. It covers the design of retaining structures and foundation systems. It addresses foundation design processes and slope stability analyses.

Additionally, it incorporates the design and assessment processes of pile foundation systems.

Prerequisites and co-requisites:

(BAU302)

Course Coordinator:

Prof. Dr. Murat Hamderi

Name of Lecturers:

Prof. Dr. Murat Hamderi

Assistants:

Research Assist. Recep Özkan Research Assist. Ozan Subaşı

Recommended or Required Reading

Resources

Braja M. Das, 2014. Principles of Geotechnical Engineering, 5th ed., PWS Publishing Company, Boston., Budhu, M., 2010. Soil Mechanics and Foundations. 3rd ed. John W
Grundbau und Bodenmechanik II Skript Prof. Dr.-Ing. F. Rackwitz
Fellin, W. (2007). Bodenmechanik und Grundbau Übung.

Course Category

Mathematics and Basic Sciences : 10	Education :
Engineering : 50	Science : 10
Engineering Design : 30	Health :
Social Sciences :	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to foundation engineering, geotechnical properties of soil		
2	Subsoil investigation, laboratory and in-situ testing, synthesis of laboratory and field data		
3	Bearing capacity analysis		
4	Stresses in the soil due to loading and settlement analysis of shallow foundations		
5	Design of shallow foundations and mat foundations, rigid methods, non-rigid methods		
6	Deep foundation types and definitions, load transfer		
7	External and internal stabilized systems, lateral earth pressures		
8	Midterm Exam		
9	Retaining wall systems		
10	Sheet pile walls, Supported Cuts		
11	Slope stability analysis		
12	Slope stability analysis		
13	Axial load capacity and elastic settlement of piles		
14	Pile group efficiency, settlement of pile groups, drilled shaft foundations		
15	Soil Improvements		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Understands the importance and methodologies of soil investigations, analyzes, and explains soil investigation data for foundation design.
C02	Formulates and solves settlement problems due to loading and calculates the bearing capacity of a foundation base soil.
C03	Designs shallow foundations by considering defined requirements and constraints and addressing uncertainties in the design process.
C04	Designs deep foundations by considering defined requirements and constraints and addressing uncertainties in the design process.
C05	Selects and applies appropriate techniques and tools to design retaining structures.
C06	Analyzes and evaluates slope stability.
C07	Develops and demonstrates self-learning skills
C08	Identifies, formulates, and evaluates solutions for geotechnical engineering problems; explains the impact of engineering solutions on contemporary issues.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	3	%10
Attendance	0	%0
Practice	0	%0
Project	1	%10
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	4	56
Assignments	3	7	21
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	28
Laboratory	14	1	14
Project	1	17	17
Final examination	1	2	2
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
C01	5	3	2	3	2	5	4
C02	5	3	1	3	2	5	4
C03	5	5	2	4	3	5	4
C04	5	5	2	4	3	5	4
C05	5	5	2	4	3	5	4
C06	5	4	1	3	2	5	4
C07	4	2	3	3	2	3	5
C08	5	5	3	5	3	4	4



Stochastic Systems					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BAU305	Stochastic Systems	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to provide an understanding of the fundamental principles of stochastic processes, analyze the relationship between probability theory, random variables, and stochastic systems, apply stochastic models to real-world problems, and evaluate uncertainties in engineering fields.

Teaching Methods and Techniques:

The course covers the fundamental concepts of stochastic processes, probability theory, properties of random variables, Markov processes, Gaussian processes, Poisson processes, stochastic differential equations, and stochastic modeling techniques in engineering applications. Additionally, it includes simulation methods and application areas of stochastic processes.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat Hamderi (Yerine)

Assistants:

Recommended or Required Reading

Resources
Papoulis, A., & Pillai, S. U. (2002). Probability, Random Variables, and Stochastic Processes. McGraw-Hill., Ross, S. M. (2014). Introduction to Probability Models. Academic
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Course Category

Mathematics and Basic Sciences	:	100	Education	:
Engineering	:		Science	:
Engineering Design	:		Health	:
Social Sciences	:		Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Stochastic Processes and Fundamental Concepts		
2	Probability Theory and Random Variables		
3	Markov Processes and Applications		
4	Gaussian Processes and Stochastic Properties		
5	Poisson Processes and Event Modeling Techniques		
6	Stochastic Differential Equations		
7	Applications of Stochastic Processes in Engineering		
8	Midterm Exam		
9	Stochastic Modeling Techniques		
10	Simulation and Analysis Methods of Random Processes		
11	Continuous and Discrete-Time Stochastic Models		
12	Stochastic Processes in Finance and Economics		
13	Stochastic Processes in Signal Processing and Communication		
14	Stochastic Processes in Artificial Intelligence and Machine Learning		
15	General Evaluation and Case Studies		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can define the fundamental concepts of stochastic processes.
C02	Can analyze the probability distributions of random variables.
C03	Can apply stochastic modeling techniques in engineering applications.
C04	Can evaluate the simulation methods of stochastic processes.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06
C01	5	5	3	5	5	4
C02	5	5	3	5	5	4
C03	5	5	3	5	5	4
C04	5	5	3	5	5	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU350 Project I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU350	Project I	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of the Civil Engineering Project course is to enable students to apply the knowledge they have gained in previous courses within a multidisciplinary design team. Throughout this process, students will enhance their communication skills, teamwork abilities, and presentation techniques while testing their competence in solving engineering problems as a group. The course aims to equip students with the multifaceted skills necessary to effectively manage engineering projects within a team and to provide them with project management experience by taking on responsibilities in a professional environment.

Teaching Methods and Techniques:

The course covers topics such as project introduction, requirements analysis, design processes, project management, communication skills, teamwork, presentation techniques and reporting. The course also includes professional skills such as project management, resource planning and risk analysis.

Prerequisites and co-requisites:

(BAU203) and (BAU202)

Course Coordinator:

Prof. Dr. Murat Hamderi

Name of Lecturers:

Prof. Dr. Murat Hamderi (Yerine)

Assistants:

Research Assist. Recep ÖZKAN

Recommended or Required Reading

Resources

Construction Project Management: A Complete Introduction First Edition by Alison Dykstra, Schaufelberger, John, and Len Holm. Management of construction projects: a Civil Engineering Project Lecture notes
Ders notları

Course Category

Mathematics and Basic Sciences	: 25	Education	:
Engineering	: 25	Science	:
Engineering Design	: 25	Health	:
Social Sciences	: 25	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Description of the course, information about its operation.		
2	Introduction to the project		
3	Determination of project topics		
4	Presentation of students' project proposals		
5	Project Progress Report		
6	Project Progress Report		
7	Project Progress Report		
8	Midterm Report Presentation		
9	Project Progress Report		
10	Project Progress Report		
11	Project Progress Report		
12	Project Progress Report		
13	Project Progress Report		
14	Project Progress Report		
15	Project Progress Report		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C02	Students will acquire the ability to effectively manage time, resources, and costs in civil engineering projects. They will also develop the ability to identify and manage risks encountered during the project.
C03	Students will be able to present engineering projects clearly and effectively through technical reports and presentations. They will develop the ability to communicate technical information in a way that is understandable to a non-technical audience.
C04	Students will gain experience in taking leadership roles in projects, guiding the team, and sharing responsibilities. Additionally, they will improve their decision-making and problem-solving skills during the project.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%40

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	13	7	91
Assignments	9	2	18
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	14	2	28
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes							
---------------------------------------------------------	--	--	--	--	--	--	--

bbb							
	P01	P02	P04	P05	P06	P07	
C02	5	4	4	3	3	4	
C03	5	3	3	5	3	4	
C04	5	5	5	3	3	4	



BAU351 System Technics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU351	System Technics	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to provide a systematic understanding of physical, logical, and cyber-physical components for the design, construction, and sustainable operation of functional structures. It seeks to equip students with fundamental knowledge of model-based system philosophy and stochastic system analysis, enabling them to apply these concepts in construction industry applications. Additionally, it aims the analysis of building components using computer-aided simulation methods.

Teaching Methods and Techniques:

The course covers model-based system philosophy and system design. It includes the analysis of physical, logical, and cyber-physical building components using abstract system models. It addresses the fundamentals of stochastic systems, methods for analyzing stochastic systems, and programming statistical functions in R. It also incorporates computer-aided simulation techniques to examine various use cases from the construction industry.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Murat Hamderi

Name of Lecturers:

Prof. Dr. -Ing. Timo Hartmann

Assistants:**Recommended or Required Reading****Resources**

Engineering systems : meeting human needs in a complex technological world De Weck, Olivier L. ; Roos, Daniel ; Magee, Christopher L Cambridge, Mass. : MIT Press 20
Hedderich, J., & Sachs, L. (2016). Angewandte statistik. Springer Berlin Heidelberg.

Course Category

Mathematics and Basic Sciences : 25	Education : 25
Engineering : 25	Science :
Engineering Design : 25	Health :
Social Sciences :	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		
2	Philosophical foundations; Models in system design		
3	The systematic design process		
4	Computer Lab - 1st Project Assignment		
5	Model-based system development		Control of Technical Systems: Basic Prin
6	Model tabanlı sistem geliştirme		Evaluation of Technical Systems: Charac
7	Stochastic and theoretical modeling in construction		
8	Midterm Exam		
9	Probabilities in Civil Engineering / Stochastic Models		
10	Veriler ve dağılımlar		
11	Correlation and Regression		
12	Correlation and Regression		
13	Parameter spaces and the design of experiments		
14	Parameter spaces and the design of experiments		
15	Gender and diversity and the system design of civil engineering systems		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

- C01 Students learn basic techniques for simulating systems in construction and apply simulation-based analysis methods.
C02 Students develop the ability to design simulation models and conduct structured experiments with these models.
C03 Through a simulation project, students acquire the competence to create and analyze simulation models in R software.

Program Learning Outcomes**No Learning Outcome**

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03 The ability to communicate effectively with diverse audiences.
P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%50
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	9	108
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	28
Laboratory	0	0	0
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							
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bbb							
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	P01	P02	P03	P04	P05	P06	P07
C01	5	4	2	3	2	5	4
C02	5	5	2	3	3	5	4
C03	5	4	2	3	2	5	5



BAU352 Construction Management I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU352	Construction Management I	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The Construction Management course aims to enable students to understand the role of the construction sector within the economic system and the financial management of construction projects. The course targets topics such as the structures of the construction industry, tendering processes, awarding, invoicing, construction techniques, construction planning, construction management, and construction contract law.

Teaching Methods and Techniques:

The Construction Management course includes the role of the construction sector within the economic system. The course encompasses the structures of the construction industry, tendering, awarding, and invoicing processes. Additionally, it covers construction techniques, construction planning, construction management, and construction contract law.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. -Ing. Ulrich Neuhof

Name of Lecturers:

Prof. Dr. -Ing. Ulrich Neuhof

Assistants:

Research Assist. Mehmet Vefa İlgün Research Assist. Recep Özkan

Recommended or Required Reading

Resources	
	Lecture Notes
	Grundlagen der Baubetriebslehre Bd. 1-3; Fritz Berner, Bernd Kochendörfer, Rainer Schach, Teubner
	-
	-
	-

Course Category

Mathematics and Basic Sciences	: 10	Education	:
Engineering	: 50	Science	:
Engineering Design	: 30	Health	:
Social Sciences	: 10	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Topic BW:Part 1a: economic position and market participants- Section a1: economic classification, products, producers- Se		
2	Topic BW:Part 1a: Economic position and market participants- Section a3: Value-based recording of construction activityMe		
3	Topic BW:Part 1b: Production systems of the construction industry- Section b1: Fundamentals of production systems Differ		
4	Topic BW:Part 1b: Production systems of the construction industry- Section b2: Fundamentals of production systems Differ		
5	Topic BW:Part 1b: Construction industry production systems- Section b3: Objectives and constraints of construction project		
6	Topic BW:Part 2: Project organization- Section a1: Basics of the organizational structure directly planning and parties involv		
7	Topic BW:Part 2: Project organization- Section a2: Basics of organizational structure - continued indirectly Planning and Cor		
8	Midterm exam		
9	Subject area BW:Part 5: Project sequence planningSubject area BB I:Part 4: Production plan. in reinforced concrete constru		
10	Topic BB I:Part 4: Production plan. in reinforced concrete construction with in-situ concrete- Section b3: formwork for verti		
11	Topic BB I:Part 4: Production plan. in reinforced concrete construction with in-situ concrete (reinforcement technology, rein		
12	Subject area BB I:Part 4: Production plan in reinforced concrete construction with in-situ concrete (reinforcement technolog		
13	Subject area BB I:Part 4: Production plan in reinforced concrete construction with in-situ concrete (concrete technology, co		
14	Topic BB I:Part 4: Production plan for reinforced concrete construction with in-situ concrete (concrete technology, concreti		
15	Topic BB I:Exam preparation (live event)		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes	
C01	Acquire technical, economic and legal information about the processes and processes in construction companies from the acquisition of construction contracts to settlement.	
C02	Students will be able to effectively manage the financial aspects of construction projects by understanding the economic processes, tendering, and invoicing procedures in the construction sector.	
C03	Students will gain knowledge in construction management and contract law, enabling them to play an active role in the planning, execution, and supervision of construction projects.	

Program Learning Outcomes

No	Learning Outcome	
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.	
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact	
P03	The ability to communicate effectively with diverse audiences.	
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,	
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.	
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.	
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.	

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
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
C01	4	5	2	4	3	2	5
C02	3	2	4		3	2	
C03		4		3	3	3	1



BAU353 Construction Law					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU353	Construction Law	3	2,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to provide an understanding of the fundamental concepts and legal regulations of construction law, analyze the legal framework of construction projects, evaluate construction contracts and the rights and obligations of parties, and interpret dispute resolution methods in construction law.

Teaching Methods and Techniques:

The course covers the fundamental principles of construction law, building and zoning regulations, construction contracts, the legal relationship between contractors and employers, occupational health and safety regulations, expropriation and permit processes. Additionally, it includes dispute resolution methods in construction law and case study analyses within the scope of court decisions.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Murat Hamderi (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:**Recommended or Required Reading****Resources**

FIDIC (2017). Conditions of Contract for Construction (Red Book). International Federation of Consulting Engineers., Construction Law and Applications. Seçkin Publishing.
Grundlagen der Baubetriebslehre Bd. 1-3; Fritz Berner, Bernd Kochendörfer, Rainer Schach, Teubner

Course Category

Mathematics and Basic Sciences	:		Education	:
Engineering	:	60	Science	:
Engineering Design	:	20	Health	:
Social Sciences	:	20	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Construction Law and Fundamental Concepts		
2	General Principles of Building and Zoning Regulations		
3	Construction Contracts and Obligations of Parties		
4	Occupational Health and Safety Regulations		
5	Expropriation and Building Permit Processes		
6	Responsibilities in Construction Projects and Insurance Law		
7	Ethical Rules and Professional Responsibility in the Construction Sector		
8	Midterm Exam		
9	Types of Disputes and Resolution Methods in Construction Projects		
10	Arbitration and Court Procedures in Construction Law		
11	FIDIC Contracts and International Construction Law		
12	Public Procurement and Contractor Responsibilities		
13	Environmental Regulations and Sustainability in the Construction Sector		
14	Case Study Analysis within the Scope of Court Decisions		
15	General Evaluation and Discussions		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Can define the fundamental concepts and regulations of construction law.
C02	Can analyze the legal framework of construction contracts.
C03	Can evaluate the rights and obligations of parties in construction projects.
C04	Can interpret dispute resolution methods in construction law.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	10	120
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
C01	5	4	4	3	5	5
C02	5	4	4	3	5	5
C03	5	4	4	3	5	5
C04	5	4	4	3	5	5



BAU354 Structural Analysis III					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU354	Structural Analysis III	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to analyze hyperstatic structural systems, apply different solution methods, perform displacement calculations, and evaluate the static behavior of structural elements.

Teaching Methods and Techniques:

The course covers the fundamental principles of hyperstatic structural systems, force and displacement methods, matrix analysis techniques, stiffness and flexibility matrices, energy methods, and static analysis of structural elements. Additionally, it includes analytical studies of reinforced concrete and steel structures under various loading conditions.

Prerequisites and co-requisites:

(BAU204)

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources

McCormac, J. C. (2018). Structural Analysis: Engineering Fundamentals. Wiley., Hibbeler, R. C. (2020). Structural Analysis. Pearson Education.

Course Category

Mathematics and Basic Sciences :	Education :
Engineering : 100	Science :
Engineering Design :	Health :
Social Sciences :	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Hyperstatic Systems and Fundamental Concepts		
2	Structural System Analysis Using the Force Method		
3	Solution of Structural Elements Using the Displacement Method		
4	Matrix Analysis Techniques and Stiffness Matrix		
5	Flexibility Matrix and Its Applications		
6	Energy Methods and Behavior Analysis of Structural Systems		
7	Static Analysis of Reinforced Concrete and Steel Structures		
8	Midterm Exam		
9	Analysis of Structural Elements Under Different Loading Conditions		
10	Computer-Aided Analysis Methods and Software Applications		
11	Stability Analysis in Structural Systems		
12	Behavior of Structural Elements Under Dynamic Loads		
13	Advanced Methods in Structural Analysis		
14	Case Study Analyses Based on Real Projects		
15	General Evaluation and Discussions		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can analyze hyperstatic structural systems.
C02	Can apply force and displacement methods.
C03	Can solve structural elements using matrix analysis techniques.
C04	Can evaluate the behavior of structural systems using energy methods.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, environmental, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
---------------------------------------------------------	--	--	--	--	--	--

bbb						
	P01	P02	P03	P04	P05	P06
C01	5	5	4	5	5	4
C02	5	5	4	5	5	4
C03	5	5	4	5	5	4
C04	5	5	4	5	5	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU355 Geodesy and Geoinformatics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU355	Geodesy and Geoinformatics	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to apply geodesy and geoinformatics techniques for measuring, mapping, and analyzing the Earth's surface, utilize space-based measurement methods, manage geographic data, and integrate geodetic systems.

Teaching Methods and Techniques:

The course covers fundamental geodesy principles, surveying techniques, coordinate systems, remote sensing, and GPS technologies. Additionally, it includes geographic information systems (GIS), data analysis methods, the establishment of geodetic networks, and geodesy applications in engineering projects.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:**Recommended or Required Reading****Resources**

Wolf, P. R., & Ghilani, C. D. (2014). Elementary Surveying: An Introduction to Geomatics. Pearson., Hofmann-Wellenhof, B., Lichtenegger, H., & Collins, J. (2008). Global Introduction to Geometrical and Physical Geodesy: Foundations of Geomatics Illustrated Edition by Thomas H. Meyer (Author)

Course Category

Mathematics and Basic Sciences	: 25	Education	:
Engineering	: 50	Science	:
Engineering Design	: 20	Health	:
Social Sciences	: 5	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Geodesy and Geoinformatics		
2	Coordinate Systems and Transformations		
3	Basic Surveying Techniques and Instruments		
4	Remote Sensing and Satellite Imaging Technologies		
5	GPS and GNSS Systems		
6	Geographic Information Systems and Data Management		
7	Establishment of Geodetic Networks and Accuracy Analysis		
8	Midterm Exam		
9	Geodesy Applications in Engineering Projects		
10	Mapping Techniques and Data Visualization		
11	Terrain Modeling and Surface Analysis		
12	GIS Applications in Smart Cities		
13	Lidar and Photogrammetry Techniques		
14	Data Integrity and Error Analysis		
15	General Evaluation and Project Presentations		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Can explain geodesy and geoinformatics principles.
C02	Can collect data using modern surveying techniques.
C03	CBS ve uzaktan algılama sistemlerini analiz edebilmektedir.
C04	Can establish geodetic networks and integrate them into engineering projects.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
C01	5	5	3	5	3	3
C02	5	5	3	5	3	3
C03	5	5	3	5	3	3
C04	5	5	3	5	3	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU356 Geology for Civil Engineers					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
6	BAU356	Geology for Civil Engineers	5	4	6

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Compulsory

Objectives of the Course:
his course aims to provide students with an understanding of the fundamental principles of geology and its relationship with civil engineering. It seeks to explain the significance of rock science, soil mechanics, stress analyses, and groundwater in construction geology. Additionally, it plans to equip students with the necessary knowledge and skills for collecting, evaluating, and presenting geological data. The course also intends to develop analytical thinking and problem-solving skills in determining suitable ground and rock conditions for construction.

Teaching Methods and Techniques:
This course covers the fundamental principles of geology, rock science, soil mechanics, and stress analyses in mountainous regions. It includes methods for collecting and presenting geological data relevant to construction geology, as well as analyses of soil, rock, and groundwater. Additionally, the course examines evaluation criteria for soil and rock in terms of foundation durability and explores engineering solutions for construction applications.

Prerequisites and co-requisites:

Course Coordinator:
Prof. Dr. Enver Vural YAVUZ

Name of Lecturers:
Prof. Dr. Enver Vural YAVUZ

Assistants:
Research Assist. Ozan SUBAŞI

Recommended or Required Reading	
Resources	Baugeologie (Edwin Fecker) - Springer Spektrum (2019), Grotzinger, John, Thomas H. Jordan, and Thomas Jordan. Understanding Earth Lecture Notebook. Macmillan, 201

Course Category			
Mathematics and Basic Sciences	: 15	Education	:
Engineering	: 25	Science	: 25
Engineering Design	: 20	Health	:
Social Sciences	:	Field	: 15

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	Introduction	-	-
2	Fundamentals of Geology 1	-	-
3	Fundamentals of Geology 2	-	-
4	Rock science	-	-
5	Structure of Rocks and Mountainous Areas	-	-
6	Stress in Mountainous Areas 1	-	-
7	Stress in Mountainous Areas 2	-	-
8	Midterm Exam	-	-
9	Collection and Presentation of Construction Geology data	-	-
10	Material Properties of Soil, Rock and Mountainous Areas 1	-	-
11	Material Properties of Soil, Rock and Mountainous Areas 2	-	-
12	Groundwater in Ground and Rock 1	-	-
13	Groundwater in Ground and Rock 2	-	-
14	Evaluation Criteria in Soil and Rock	-	-
15	Collection and Presentation of Construction Geology Data	-	-
16	Final Exam	-	-

Course Learning Outcomes	
No	Learning Outcomes
C01	Gain knowledge about geological events, determine the structure of the earth and geological time, and apply the principles of relative dating.
C02	Identify metamorphic, igneous, sedimentary processes and compare corresponding common minerals and rock types.
C03	Understands the decomposition processes of the soil according to the particle size, the formation of the soil.
C04	Understands the differences between ground and rock, creates information about the structure of rock and mountainous areas.
C05	Interprets topographic maps and simple geological maps, uses information from geological and topographic maps to develop geological sections, and identifies basic geological structures in sections.
C06	Discusses the concepts of groundwater and surface water in geology, relates surface water to the ground, relates geological concepts to technical applications.
C07	Acts effectively as a member of a group to relate geology to one of its technical applications and to communicate in both written report and presentation formats.

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, environmental, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	3	%10
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	6	84
Assignments	2	4	8
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	3	3
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
C01	4	3	2	3	2	4	3
C02	4	3	2	3	2	4	3
C03	4	3	2	3	2	4	3
C04	4	3	2	2	3	3	4
C05	3	4	3	3	3	4	3
C06	4	3	2	3	2	4	3
C07	3	3	5	4	5	3	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU357 Construction Informatics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU357	Construction Informatics	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to utilize information technologies in construction engineering processes, apply digital data management methods, employ building information modeling (BIM) techniques, and integrate smart construction systems.

Teaching Methods and Techniques:

The course covers fundamental concepts of information systems in construction engineering, building information modeling processes, database management, and software applications. Additionally, it includes digital transformation practices in construction projects, cloud-based data sharing, and the use of emerging technologies such as artificial intelligence and the Internet of Things (IoT).

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources

Turk, Z. (2016). Construction Informatics: Applications in Engineering and Construction. Routledge., Eastman, C., Teicholz, P., Sacks, R., & Liston, K. (2011). BIM Handbook lecture notes provided in the class
Informationsverarbeitung in Bauunternehmen Struktur der Informationen zur Bearbeitung betriebswirtschaftlicher und baubetrieblicher Aufgaben Autoren: Huhnt, Wolfgang

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Construction Informatics		
2	Principles of Building Information Modeling (BIM)		
3	Data Management in Construction Projects		
4	Software Applications in Construction Engineering		
5	Digital Transformation and Smart Construction Systems		
6	Cloud-Based Data Sharing in the Construction Industry		
7	Artificial Intelligence and Internet of Things (IoT) Applications		
8	Midterm Exam		
9	Digital Twins and Simulations		
10	Data Analytics and Big Data Applications in Construction Engineering		
11	Construction Robots and Automation Systems		
12	Use of Virtual Reality (VR) and Augmented Reality (AR)		
13	Cybersecurity and Risk Management in Construction Projects		
14	Ethics and Regulatory Issues in Construction Informatics		
15	General Evaluation and Project Presentations		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Can explain the use of information technologies in construction engineering projects.
C02	Can develop building information modeling (BIM) processes.
C03	Can utilize digital data management and construction software.
C04	Can analyze smart construction systems and emerging technologies.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
C01	5	5	3	5	3	3
C02	5	5	3	5	3	3
C03	5	5	3	5	3	3
C04	5	5	3	5	3	3



BAU402 Civil Engineering Project					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU402	Civil Engineering Project	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to enable students to apply their prior learning within a multidisciplinary design team. It seeks to enhance their communication skills, teamwork abilities, and presentation techniques collectively. Additionally, it aims to facilitate the application and assessment of these competencies.

Teaching Methods and Techniques:

This course comprises independently organized group studies based on topics announced at the beginning of the semester. It includes an introduction to the project, covering task definitions and boundary conditions. It encompasses the fundamentals of project management, including the planning and execution of processes. Additionally, it covers communication within the project, focusing on working with project communication systems and ensuring team coordination.

Prerequisites and co-requisites:

(BAU302) and (BAU203) and (BAU201)

Course Coordinator:

Prof. Dr. -Ing. Ulrich Neuhof

Name of Lecturers:

Assistants:

Recommended or Required Reading

Resources	
	Pellicer, E., Yepes, V., Teixeira, J. C., Moura, H. P., & Catalá, J. (2013). Construction management. John Wiley & Sons., Dykstra, A. (2018). Construction project managem Ders notları

Course Category

Mathematics and Basic Sciences	: 25	Education	:
Engineering	: 25	Science	:
Engineering Design	: 25	Health	:
Social Sciences	: 25	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Application of the previous knowledge in a disciplined design team is the major aim. The students gain practice in team wo	Application of the previous knowledge ir	Construction Project Management: A Co
2	Introduction to the project	Introduction to the project	Construction Project Management: A Co
3	Foundations of project management	Foundations of project management	Construction Project Management: A Co
4	Communication in the project	Communication in the project	Construction Project Management: A Co
5	The outcome of the project work is presented in the class	The outcome of the project work is pres	Construction Project Management: A Co

Course Learning Outcomes

No	Learning Outcomes
C01	Apply their previous knowledge within a multidisciplinary design team and develop teamwork, communication, and presentation skills throughout the process.
C02	Analyze project requirements, define tasks, and establish boundary conditions.
C03	Implement the fundamental principles of project management, effectively planning and managing project processes.
C04	Utilize project communication systems, ensuring efficient communication within the team and with stakeholders.
C05	Analyze project-specific challenges, propose solutions, and professionally present the outcomes of their work.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%0

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	14	2	28
Laboratory	0	0	0
Project	1	112	112
Final examination	0	0	0
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	3	5	3	3	4
C02	5	5	3	5	3	3	4
C03	5	5	3	5	3	3	4
C04	5	5	3	5	3	3	4
C05	5	5	3	5	3	3	4



BAU425 Experimental Soil Mechanics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU425	Experimental Soil Mechanics	2	1	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach the fundamental principles of soil mechanics experiments, enable the analysis of laboratory experiments, and demonstrate how experimental data are used in engineering applications.

Teaching Methods and Techniques:

The course covers the theoretical foundations of soil mechanics laboratory experiments, experimental methods, and applications. Additionally, it includes the determination of the physical and mechanical properties of soils, data collection and analysis techniques in laboratory experiments, and evaluations for engineering projects.

Prerequisites and co-requisites:

(BAU302)

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources

Das, B. M. (2013). Principles of Geotechnical Engineering. Cengage Learning, Bowles, J. E. (1996). Foundation Analysis and Design. McGraw-Hill. Bardet, J.P., 1997, Experimental Soil Mechanics, Prentice Hall, USA.

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:
			30

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Soil Mechanics Laboratory and Experimental Methods		
2	Soil Classification Tests (Sieve and Hydrometer Analysis)		
3	Natural Water Content and Unit Weight Tests		
4	Consolidation Tests and Settlement Analysis		
5	Direct Shear and Triaxial Compression Tests		
6	Compaction and Permeability Tests		
7	Analysis of Experimental Data and Engineering Applications		
8	Midterm Exam		
9	Soil Strength and Bearing Capacity Tests		
10	Soil Dynamics and Seismic Tests		
11	Soil Liquefaction Potential and Evaluation		
12	Integration of Laboratory Data into Engineering Design		
13	Case Study and Preparation of Laboratory Reports		
14	Computer-Aided Analysis of Experimental Data		
15	General Evaluation and Project Presentations		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can explain the fundamental principles of soil mechanics laboratory experiments.
C02	Can determine the physical and mechanical properties of soils using experimental methods.
C03	Can analyze experiment results and apply them to engineering practices.
C04	Can interpret laboratory data and prepare technical reports.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	0	0	0
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	4	2	1	1	3	5	2
C02	4	2	1	1	3	5	2
C03	4	2	1	1	3	5	2
C04	4	2	1	1	3	5	2



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU451 Water Sources					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BAU451	Water Sources	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The course provides the scientific foundations and simple practical applications in various fields of water industry.

Teaching Methods and Techniques:

The Water Resources Engineering course includes fundamental topics related to the management and engineering applications of water resources. The course encompasses river morphology, river regulation, river transport, sediment movement in rivers, hydraulic structures, and the design principles of dams. It also covers the planning and design of water intake structures, hydropower plants, energy dissipators, flood protection structures, and irrigation and drainage systems. The course includes the operation, development, economic analysis, and water resource systems. Engineering hydrology topics such as the water cycle, infiltration, evaporation, filtration, groundwater, watershed modeling, flow models, system hydrology, unit hydrograph, translation and persistence models are included. Furthermore, agricultural hydraulic engineering and marine applications are part of the course content. The course also includes water industry projects, urban water management, and the interaction of hydrological and hydraulic engineering.

Prerequisites and co-requisites:

(BAU205)

Course Coordinator:

Asist Prof.Dr. M. Adil AKGÜL

Name of Lecturers:

Asist Prof.Dr. M. Adil AKGÜL

Assistants:

Research Assist. Furkan Sencer KAÇAR

Recommended or Required Reading

Resources Mays, L.W., 2011. Water Resources Engineering, 2nd Ed., John Wiley & Sons. Delleur, J.W., 2003, Civil Engineering Handbook, 2nd Ed., Section IV, Hydraulic Engineering „Hydraulik für Bauingenieure: Grundlagen und Anwendungen“, Robert Freimann

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:	20	Science	:	10
Engineering Design	:	30	Health	:	
Social Sciences	:		Field	:	40

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Scope of water resources engineering, sustainability in water resources management		
2	Hydrology, precipitation, flow, evaporation, flow models, hydrograph theory.		
3	River morphology 2		
4	Sediment transport in rivers		
5	River regulation, navigation in rivers		
6	Diversion weirs		
7	Dams 1		
8	Midterm exam		
9	Dams 2		
10	Intakes, spillways and energy dissipators		
11	Hydroelectric power plants		
12	Flood routing and flood control structures		
13	Fundamentals of irrigation and drainage		
14	Management of water resources, economical analysis, water resources systems.		
15	Management of water resources, economical analysis, water resources systems.		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Makes simple hydrological calculations for a basin.
C02	To be able to make solid matter movement calculations related to rivers and to gain knowledge about the interaction of solid matter with structures.
C03	Makes stability calculations of concrete weight type dam structures.
C04	Makes preliminary calculations of a hydroelectric power plant and related structures.
C05	Makes basic calculations related to basin and reservoir operation.
C06	Applies the unit hydrograph theory.
C07	Understands the importance of sustainable water resources management.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	6	%0
Attendance	0	%0
Practice	0	%0
Project	1	%30
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%70

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	6	2	12
Assignments	6	3	18
Presentation	0	0	0
Mid-terms	1	4	4
Practice	14	2	28
Laboratory	0	0	0
Project	12	5	60
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes							
---------------------------------------------------------	--	--	--	--	--	--	--

bbb							
	P01	P02	P04	P05	P06	P07	
C01	3	3	4	1	1	1	
C02	5	3	3	1	1		
C03	5	3	5	1	1	1	
C04	5	3	4	1			
C05	4	3	5	1	1	1	
C06	4	4	3	1	1		
C07	1	5	5	1			1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU452 Fundamentals of Water Management					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU452	Fundamentals of Water Management	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to equip students with knowledge on the planning and design of urban water supply systems, which constitute a major infrastructure component. Starting with the planning of water supply projects, it seeks to provide students with theoretical knowledge and practical experience in the planning and design of sources and intakes, transmission lines, and wastewater lines.

Teaching Methods and Techniques:

This course comprises topics related to hydraulic engineering, including hydrology, river engineering, dams, hydroelectric power plants, waterway engineering, and coastal engineering. Engineering hydrology covers fundamental concepts such as the water cycle and balance, precipitation, evaporation, infiltration, groundwater, and flow. Additionally, it includes theoretical and applied knowledge on watershed modeling, flow formation models, system hydrology, unit hydrograph method, routing and storage models, river models, and physically based hydrological models. The course also incorporates applications in agricultural hydraulic engineering and independent engineering studies related to water management. Furthermore, it encompasses water management projects, the interaction of urban water management, and aspects of hydrological and hydraulic engineering.

Prerequisites and co-requisites:

(BAU205)

Course Coordinator:

Asist Prof.Dr. M. Adil AKGÜL

Name of Lecturers:

Asist Prof.Dr. M. Adil AKGÜL

Assistants:

Research Assist. Furkan Sencer Kaçar

Recommended or Required Reading

Resources

Lecher, K., Lühr, H. P., & Zanke, U. C. (Eds.). (2003). Taschenbuch der Wasserwirtschaft. Vieweg, Friedr., et Sohn Verlagsgesellschaft mbH., Hurlimann, A., & Wilson, E. (Eds.). (2003). „Taschenbuch der Wasserwirtschaft“, Lecher, Kurt; Lühr, Hans-Peter; Zanke, Ulrich Grundlagen der Siedlungswasserwirtschaft 1956 von Hübner Helmut

Course Category

Mathematics and Basic Sciences	:	20	Education	:	10
Engineering	:	30	Science	:	10
Engineering Design	:	30	Health	:	10
Social Sciences	:	0	Field	:	40

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction, water supply and wastewater collection systems, history.		
2	Water demand, water quality, preparation of water for use. Estimation of project water demand.		
3	Water sources and types of acquirement.		
4	Transmission lines.		
5	Water tanks and distribution reservoirs.		
6	Water distribution networks.		
7	Collection of wastewater.		
8	Interm exam.		
9	Determination of wastewater quantity.		
10	Types and design of wastewater collectors.		
11	Rainwater drainage.		
12	Wastewater treatment. Mechanical treatment		
13	Wastewater treatment. Biological treatment.		
14	Wastewater disposal, marine discharges.		
15	Desalination plants, application of modern methods in urban water systems management.		
16	Final exam.		

Course Learning Outcomes

No	Learning Outcomes
C01	Performs flow calculations in water supply projects using appropriate methods.
C02	Define and apply quality standards and related processes in drinking and potable water supply.
C03	Designs pumping and gravity transmission lines in accordance with hydraulic principles.
C04	Analyzes and solves simple network and branch networks.
C05	Realizes the planning and design of wastewater channels in accordance with engineering criteria.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%15
Quizzes	0	%0
Assignment	3	%15
Attendance	0	%0
Practice	0	%0
Project	1	%30
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	9	4	36
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	14	2	28
Laboratory	0	0	0
Project	12	5	60
Final examination	1	2	2
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
C01	5	4	3	5	5	4	5
C02	5	4	3	5	5	4	5
C03	5	4	3	5	5	4	5
C04	5	4	3	5	5	4	5
C05	5	4	3	5	5	4	5



BAU453 3D Modelling in Civil Engineering					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BAU453	3D Modelling in Civil Engineering	5	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach three-dimensional computational methods in civil engineering, enable the numerical analysis of engineering problems, and develop 3D modeling skills using modern engineering software.

Teaching Methods and Techniques:

The course covers the fundamental principles of three-dimensional engineering computations, modeling techniques using the finite element method, and computer-aided analysis methods. Additionally, it includes structural analysis software, meshing processes, and verification techniques.

Prerequisites and co-requisites:

(BAU304)

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources	
	Zienkiewicz, O. C., Taylor, R. L. (2013). The Finite Element Method: Its Basis and Fundamentals. Butterworth-Heinemann.,Bathe, K. J. (2006). Finite Element Procedures. MIDAS GTS NX Online Manual, Youtube videos
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Course Category

Mathematics and Basic Sciences	:	100	Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:		Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to 3D Computations and Basic Concepts	-	-
2	Introduction to Finite Element Method and Basic Principles	-	-
3	3D Modeling Techniques and Meshing Processes	-	-
4	Mathematical Modeling for Structural Analysis	-	-
5	Usage of Computer-Aided Engineering Software	-	-
6	Error Analysis and Verification in Finite Element Method	-	-
7	Applications of 3D Simulations in Civil Engineering	-	-
8	Midterm Exam	-	-
9	3D Modeling Techniques in Static and Dynamic Analyses	-	-
10	Parametric Modeling Approaches in Civil Engineering	-	-
11	Finite Element Analysis for Complex Structural Systems	-	-
12	Data Management and Optimization Techniques in 3D Computations	-	-
13	Advanced Simulations in Structural Analysis	-	-
14	Industrial Applications of 3D Engineering Computations	-	-
15	Project Presentations and General Evaluation	-	-
16	Final Exam	-	-

Course Learning Outcomes

No Learning Outcomes

C01	Can explain the fundamental principles of three-dimensional computations.
C02	Can analyze engineering problems using the finite element method.
C03	Can perform 3D modeling using computer-aided analysis software.
C04	Can interpret structural analysis results and integrate them into engineering projects.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06
C01	5	5	5	5	5	5
C02	5	5	5	5	5	5
C03	5	5	5	5	5	5
C04	5	5	5	5	5	5



BAU454 Construction Engineering III					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BAU454	Construction Engineering III	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach construction processes in detail, introduce advanced construction techniques, and evaluate the applicability of modern building systems.

Teaching Methods and Techniques:

The course includes construction techniques of reinforced concrete and steel structures, site management and work planning, and the use of advanced building materials. Additionally, it covers sustainable construction practices, quality control processes, and occupational health and safety measures.

Prerequisites and co-requisites:

(BAU301)

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources	Chudley, R., & Greeno, R. (2021). Building Construction Handbook. Routledge.,Emmitt, S., & Gorse, C. (2018). Barry's Advanced Construction of Buildings. Wiley-Blackwe Grundlagen der Tragwerklehre, Band 226. September 2011 von Franz Krauss und Wilfried Führer - - -
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Course Category

Mathematics and Basic Sciences :	Education :	
Engineering :	Science :	
Engineering Design :	Health :	
Social Sciences :	Field :	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Construction Processes	Lecture Notes	Lecture Notes
2	Reinforced Concrete Structural Systems and Construction Techniques		
3	Design and Assembly Methods of Steel Structures		
4	Site Organization and Work Planning		
5	Modern Building Materials and Their Applications		
6	Quality Control and Inspection Processes in Construction		
7	Occupational Health and Safety Standards		
8	Midterm Exam		
9	Prefabricated Building Elements and Assembly Techniques		
10	Sustainable Construction Practices and Green Building Certifications		
11	Site Logistics and Material Management		
12	Smart Building Systems and Digital Construction Technologies		
13	Challenges in Large-Scale Construction Projects		
14	Legal and Ethical Responsibilities in Construction Processes		
15	Project Presentations and General Evaluation		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can explain advanced construction techniques.
C02	Can evaluate site management and work planning processes.
C03	Can analyze the properties of modern building materials.
C04	Can interpret sustainable construction practices and occupational safety standards.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic facto
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	42	2	84
Hours for off-the-c.r.stud	28	2	56
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	2	3,5	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

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
C01	5	5	4	5	4	5
C02	5	5	4	5	4	5
C03	5	5	4	5	4	5
C04	5	5	4	5	4	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU456 Construction Management II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BAU456	Construction Management II	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The Construction Business course aims to provide students with an understanding of the role of the construction industry in the economic system and the financial management of construction projects. The course targets key topics such as the structures of the construction industry, tendering processes, awarding, billing, construction techniques, construction planning, construction management and construction contract law.

Teaching Methods and Techniques:

The Construction Management course includes the role of the construction sector within the economic system. The course encompasses the structures of the construction industry, tendering, awarding, and invoicing processes. Additionally, it covers construction techniques, construction planning, construction management, and construction contract law.

Prerequisites and co-requisites:

(BAU352)

Course Coordinator:

Prof. Dr. -Ing. Ulrich Neuhof

Name of Lecturers:

Prof. Dr. -Ing. Ulrich Neuhof

Assistants:

Research Assist. Mehmet Vefa İlgün

Recommended or Required Reading

Resources

Project Management Institute. "A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Seventh Edition and The Standard for Project Management." P1 Grundlagen der Baubetriebslehre Bd. 1-3; Fritz Berner, Bernd Kochendörfer, Rainer Schach, Teubner

Course Category

Mathematics and Basic Sciences	: 10	Education	:
Engineering	: 40	Science	:
Engineering Design	: 30	Health	:
Social Sciences	:	Field	: 20

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Project management	Lecture Notes	Lecture Notes
2	Fundamentals of the construction sector and the construction industry		
3	Project participants in the construction sector		
4	Basics of tendering for construction services		
5	Quantity surveying and project management		
6	Basic information for the calculation of construction services and project control		
7	Basics for costing construction services and project management		
8	Midterm Exam		
9	Basic information on costing of construction services and project management		
10	Provision of construction services and fundamentals of project management		
11	Construction services billing and project management basics		
12	Control of construction services and fundamentals of project management		
13	Construction scheduling based on costing and project management		
14	Project delivery, Presentation and colloquium preparation		
15	Project presentation with colloquium		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will learn about the industrial sector as well as industry-specific market players.
C02	Acquire technical, economic and legal information about the processes and processes in construction companies from the acquisition of construction contracts to settlement.
C03	Students will have knowledge of the economic functioning of the construction industry, bidding processes, awarding and invoicing and manage the financial aspects of construction projects.
C04	Students acquire knowledge in basic areas such as construction management and contract law and take an active role in the planning, implementation and supervision of construction projects.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	6	84
Hours for off-the-c.r.stud	14	4	56
Assignments	4	4	16
Presentation	0	0	0
Mid-terms	2	4	8
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
C01	3	5	4	4	5	5
C02	5	5	4	4	5	5
C03		3				3
C04		4			3	2



BAU457 Construction Chemistry and Material Testing					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BAU457	Construction Chemistry and Material Testing	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach the fundamental principles of construction chemistry, understand the chemical properties of building materials, and the methods for testing these materials. It also aims to develop the ability to assess the durability and performance of construction materials.

Teaching Methods and Techniques:

The course includes the chemical components of building materials, durability tests, material properties, and the interpretation of test results. Additionally, it covers the physical and chemical analysis of various building materials, testing methods, and applications.

Prerequisites and co-requisites:

(BAU201)

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources

Meyer, C. (2009). The Chemistry of Construction Materials. Wiley., Follard, K. J., & Giannini, E. A. (2011). Concrete Materials and Methods. Pearson.
Dietmar Stephan, Baustoffchemie, Beuth, 7. Auflage 2014, 224 S.
Roland Bendix, Bauchemie (als e-book in der Bib)
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Course Category

Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 60	Science	: 20
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Week 1: Introduction to Construction Chemistry and Basic Concepts	Ders Notları	Lecture Notes
2	Chemical Components of Construction Materials		
3	Chemistry of Concrete and Cement		
4	Chemistry of Ceramic and Glass Materials		
5	Chemical Properties of Metal Materials		
6	Durability Tests and Methods		
7	Material Analysis Techniques		
8	Midterm Exam		
9	Application of Chemical Tests and Results		
10	Application of Physical Tests and Evaluation		
11	Laboratory Work and Test Applications		
12	Sustainable Material Use and Environmental Impact		
13	Industrial Applications of Material Testing		
14	Quality Control and Inspection of Construction Materials		
15	Recent Developments in Material Testing		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Can identify the chemical composition of construction materials.
C02	Can perform durability tests for construction materials.
C03	Can interpret test results and assess material performance.
C04	Can perform physical and chemical analyses of various building materials.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06
C01	5	5	4	5	3	5
C02	5	5	4	5	3	5
C03	5	5	4	5	3	5
C04	5	5	4	5	3	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU458 Stuctral Dynamics I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BAU458	Stuctral Dynamics I	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach students to understand the dynamic behavior of structures. It seeks to equip students with the skills to analyze and model how structures respond to dynamic loads. Additionally, students will gain the competence to evaluate the vibration behavior of structures in terms of engineering design and safety. The course aims to teach the fundamental principles and analysis methods of structural dynamics. Through this course, students will be able to model and analyze the dynamic behavior of structures accurately, leading to safer and more efficient structural designs.

Teaching Methods and Techniques:

This course includes the fundamental principles of understanding the dynamic behavior of structures. It covers topics such as how structures respond to dynamic loads and how vibration analysis is performed. Additionally, the course includes subjects such as the frequency response of structures, modal analysis, and forced vibrations. The seismic behavior of structures and its impact on design are also within the scope of the course. By learning structural dynamics analysis methods, students will gain the competence to design safe and efficient structures by considering dynamic effects in construction projects.

Prerequisites and co-requisites:

(BAU209)

Course Coordinator:

Prof.Dr. Erkan Çelebi

Name of Lecturers:

Prof.Dr. Erkan Çelebi

Assistants:**Recommended or Required Reading****Resources**

"Baudynamik-Praxis: Mit zahlreichen Anwendungsbeispielen (Bauwerk)", Björn Haag und Lothar Stempniewski, Lecture Notes

Elektronik ortamda ders notları ve alıştırmalar (indirilebilir)

Course Category

Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 50	Science	: 10
Engineering Design	: 20	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Structure Dynamics		
2	Introduction to Linear Systems with One Degree of Freedom		
3	Free Vibrations: Natural Vibration Analysis of Undamped Systems with One Degree of Freedom		
4	Free Vibrations: Natural Vibration Analysis of Damped Systems with One Degree of Freedom		
5	Forced Vibrations: Harmonic Excitation Analysis of Undamped Systems with One Degree of Freedom		
6	Forced Vibrations: Harmonic Excitation Analysis of Damped Systems with One Degree of Freedom (Undamped Systems) - I		
7	Forced Vibrations: Impulse Excitation and General Loading Analysis of Damped Systems with One Degree of Freedom - D _y		
8	Midterm Exam		
9	Equivalent Static Earthquake Load and Response Spectrum Analysis for Systems with One Degree of Freedom		
10	Introduction to Linear Systems with Multiple Degrees of Freedom		
11	Natural Vibration Analysis of Undamped Systems with Multiple Degrees of Freedom (Undamped Multi-Degree of Freedom S		
12	Natural Vibration Analysis of Damped Systems with Multiple Degrees of Freedom (Rayleigh Method)		
13	Seismic Behavior of Systems with Multiple Degrees of Freedom (Forced Vibration Response: Earthquake Excitation)		
14	Classical Modal Analysis Methods		
15	Response Spectrum Method with Modal Analysis		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01 Students learn to interpret and critically evaluate the results from simple dynamic calculations.

C02 Students can analyze the building under dynamic loads.

C03 Determine the dimensions of the structural elements under dynamic loads.

Program Learning Outcomes**No Learning Outcome**

P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.

P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.

P03 The ability to communicate effectively with diverse audiences.

P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,

P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.

P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.

P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	2	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	6	84
Assignments	1	10	10
Presentation	0	0	0
Mid-terms	2	1	2
Practice	14	1	14
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				
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	P01	P02	P03	P04
C01	4		4	
C02		4	4	
C03	4			4



BAU459 Fundamentals of Rail Transport					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU459	Fundamentals of Rail Transport	4	3	6

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
This course aims to teach the fundamental principles of railway transportation and provide basic knowledge about the design, structure, and operation of railway systems. It also aims to promote the efficient use of infrastructure and technologies in railway transportation.

Teaching Methods and Techniques:
The course includes the historical development of railway transportation systems, the design of railway tracks and infrastructure, train operations, safety measures, and environmental impacts. Additionally, it covers technologies used in railway transportation, innovative systems, and future developments.

Prerequisites and co-requisites:

Course Coordinator:
Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:
Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading	
Resources	Glover, S., & Williams, G. (2018). Railway Engineering. McGraw-Hill., Hutchinson, S. (2015). Railway Transportation Systems: Design, Construction, and Operation. Wiley.

Course Category			
Mathematics and Basic Sciences	:	Education	:
Engineering	: 50	Science	:
Engineering Design	: 50	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	Historical Development of Railway Transportation		
2	Design of Railway Tracks and Infrastructure		
3	Railway Networks and Operations		
4	Signaling and Communication Systems in Railway Transportation		
5	Safety Measures in Railway Transportation		
6	Railway Operations and Management		
7	Environmental Impacts and Sustainability of Railway Transportation		
8	Midterm Exam		
9	Technological Innovations in Railway Transportation		
10	Railway Rolling Stock and Technologies		
11	Economic and Cost Analysis in Railway Transportation		
12	International Railway Transportation and Global Systems		
13	Future Developments in Railway Transportation		
14	Sustainability and Green Transportation in Railway Systems		
15	Latest Technological Applications in Railway Transportation		
16	Final Exam		

Course Learning Outcomes	
No	Learning Outcomes
C01	Can explain the historical development of railway transportation systems.
C02	Can understand railway infrastructure and design principles.
C03	Can have knowledge of railway operations and safety measures.
C04	Can analyze innovative technologies in railway transportation and future developments.

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	9	108
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	28
Laboratory	0	0	0
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					
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bbb					
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	P01	P03	P04	P06
C01	5	3	4	1
C02	5	3	4	1
C03	5	3	4	1
C04	5	3	4	1



BAU460 Building Information Modeling					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU460	Building Information Modeling	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The course aims to teach the theoretical framework, applications, and technologies related to Building Information Modeling (BIM) in the AEC (Architecture, Engineering, and Construction) industries. It seeks to illustrate the role of BIM in the building life cycle and its impact on digital transformation. Additionally, it provides an understanding of the fundamental components and functionality of BIM.

Teaching Methods and Techniques:

Today's construction industry is increasingly adopting new technologies, and one of the most influential is Building Information Modeling (BIM). BIM facilitates the planning, design, and construction of buildings and structures by digitally representing their physical and functional characteristics. As BIM has become an essential asset in the industry, students are introduced to its fundamentals and practical implementation in collaborative settings for facility management, design, and construction. The course also covers related technologies, standards, and theoretical knowledge.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Murat Hamderi

Name of Lecturers:

Prof. Dr. -Ing. Timo Hartmann

Assistants:

Research Assist. Begüm Aktaş

Recommended or Required Reading**Resources**

Eastman, C., Paul T., Rafael S., Kathleen L. (2008), BIM Handbook, "A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contract

Course Category

Mathematics and Basic Sciences : 30	Education : 15
Engineering : 30	Science : 15
Engineering Design : 30	Health : 10
Social Sciences : 15	Field : 10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to BIM		
2	Fundamentals and Components of BIM		
3	Fundamentals and Components of BIM		
4	BIM and Collaborative Design		
5	Support Sessions in Turkey		
6	BIM Workflows for Project Management		
7	BIM Modelling and Visualization		
8	Midterm Exam		
9	Visual Programming with Dynamo I		
10	Visual Programming with Dynamo II		
11	BIM Simulation and Analysis-Energy Simulations and Clash Detection		
12	BIM Simulation and Analysis-Energy Simulations and Clash Detection		
14	BIM Simulation and Analysis-Energy Simulations and Clash Detection		
15	Support Sessions in Turkey		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

- C01 Students acquire the necessary knowledge and skills for Building Information Modeling (BIM) in AEC industries.
 C02 Students develop theoretical and practical skills for BIM and apply their knowledge effectively in the field.
 C03 Students analyze the role of BIM in the building life cycle and its impact on digital transformation.

Program Learning Outcomes**No Learning Outcome**

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
 P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
 P03 The ability to communicate effectively with diverse audiences.
 P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and social contexts.
 P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
 P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
 P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	6	%30
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	5	70
Assignments	6	6	36
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	2	3	3	4	4
C02	5	5	2	3	3	4	4
C03	5	4	3	4	3	3	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU461 Masonry Construction					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU461	Masonry Construction	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach the fundamental principles of masonry construction, ensuring the correct selection and design of structural elements. It also aims to provide knowledge on the safety, durability, and efficient construction processes of masonry structures.

Teaching Methods and Techniques:

The course includes basic knowledge on masonry construction, covering the characteristics of structural elements such as load-bearing walls, columns, slabs, and foundations. It also encompasses methods used in structural analysis and design, as well as construction stages.

Prerequisites and co-requisites:

(BAU202)

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources Building Construction Illustrated by Francis D.K. Ching.,Masonry Design and Construction by J. R. McCormac and R. H. Brown.

Course Category

Mathematics and Basic Sciences	:		Education	:	30
Engineering	:	40	Science	:	
Engineering Design	:	30	Health	:	
Social Sciences	:		Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Masonry Structures and Their Historical Development		
2	Classification and Properties of Masonry Structural Elements		
3	Load-Bearing Walls and Their Load-Bearing Capacity		
4	Columns, Slabs, and Beams		
5	Design of Foundations and Their Load-Bearing Capacities		
6	Durability and Safety of Masonry Structures		
7	Analysis Methods for Masonry Structures		
8	Midterm Exam		
9	Construction Stages of Masonry Structures		
10	Site Analysis and Soil Investigation for Construction		
11	Construction Management and Health and Safety for Masonry Structures		
12	Material Selection and Usage for Masonry Structures		
13	Performance Criteria for Masonry Structures		
14	Innovative Applications in Masonry Construction		
15	Sustainability of Masonry Structures		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

- C01 Can explain the construction process of masonry structures and the necessary engineering calculations.
- C02 Can understand the characteristics and load-bearing capacity of masonry structural elements.
- C03 Can analyze the safety and durability of masonry structures.
- C04 Can apply calculation and analysis methods used in the design of masonry structures.

Program Learning Outcomes

No Learning Outcome

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
	P01	P03	P04	P07	
C01	4	3	3	4	
C02	5	4	5	5	
C03	5	4	5	5	
C04	5	4	5	5	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BAU462 Introduction to Flood Protection and Management					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU462	Introduction to Flood Protection and Management	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

Bu ders, taşkınların kontrolü ve yönetimi ile ilgili temel prensipleri öğretmeyi, taşkın risklerini değerlendirme ve taşkın öncesi, sırası ve sonrası yönetim stratejilerini geliştirmeyi hedeflemektedir. Ayrıca, taşkın koruma yapıları ve stratejilerinin tasarımı ve uygulanması konusunda öğrencilerin bilgi ve becerilerini arttırmayı amaçlamaktadır.

Teaching Methods and Techniques:

The course covers the basic causes of floods, the design of flood management systems, flood protection structures, and methods. It also includes information on flood risk analysis, flood modeling, and the application of these models.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HADMERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources Flood Risk Management: Hazards, Vulnerability and Mitigation Measures by S. H. Doorn, W. S. K. Leung, and G. T. T. Ho., Introduction to Flood Risk Management by P. L.

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	: 100	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Definition and Basic Causes of Floods		
2	Flood Risk and Flood Management Systems		
3	Methods and Strategies Used in Flood Management		
4	Flood Models and Their Application Areas		
5	Flood Protection Structures: Basics and Design		
6	Types of Flood Protection Structures		
7	Flood Scenarios and Risk Analysis		
8	Midterm Exam		
9	Flood Protection Strategies and Management		
10	Use and Applications of Flood Models		
11	Maintenance and Monitoring of Flood Protection Structures		
12	Flood Damage Reduction and Sustainable Management		
13	Social and Economic Impacts of Floods		
14	International Flood Management and Practices		
15	Innovations in Flood Protection and Management		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Can explain the basic causes of floods and the flood management processes.
C02	Can apply flood risk analysis and flood modeling techniques.
C03	Can understand the design and functions of flood protection structures.
C04	Can develop and evaluate flood management strategies.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
	P01	P02	P05	P06	
C01	4	5	4	1	
C02	4	5	4	1	
C03	4	5	4	1	
C04	4	5	4	1	



Turkish-German University

Faculty of Engineering
Department of Civil Engineering (German)

BAU463 Concrete and Formwork Construction					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BAU463	Concrete and Formwork Construction	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to enable students to plan and control complex construction tasks or processes from both technical and economic perspectives. After successfully completing the module, students will be equipped with the skills to evaluate and manage different stages of construction projects.

Teaching Methods and Techniques:

This course includes reinforced concrete structures, formwork construction, scheduling of concrete structures, optimization of formwork usage, and process and cost planning in formwork construction. It also encompasses process control in concrete and formwork construction, such as process and formwork planning with CAD, cycle and resource planning with MS Project, cost planning, process optimization, personnel planning, and quality assurance.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. -Ing. Ulrich Neuhof

Name of Lecturers:

Prof. Dr. -Ing. Ulrich Neuhof

Assistants:**Recommended or Required Reading****Resources**

Rupp lecture notes, Schalungsplanung im Baubetrieb von Malpricht, Hummel, A. (Year). Das Beton ABC: Schwerbeton, Leichtbeton. Verlag von Wilhelm Ernst & Sohn.

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:	100	Science	:	
Engineering Design	:		Health	:	
Social Sciences	:		Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Kalip inşaatının temelleri		
2	Beton ve kalıp yapımında döngüler Bölüm 1 Zemin döşemeleri ve duvarlar		
3	Beton ve kalıp yapımında döngüler Bölüm 2 Tavanlar		
4	MS projesi ve maliyet planlaması ile döngü planlaması		
5	Lojistik dahil beton dökümünün planlanması		
6	CAD ile süreç ve kalıp planlaması		
7	Proje örnekleri		
8	Ara Sınav		
9	Proje çalışması		
10	Proje çalışması		
11	Proje çalışması		
12	Proje çalışması		
13	Proje çalışması		
14	Proje teslimi ve sunumun hazırlanması		
15	Sunum ve kolokyum		
16	Yarıyıl Sonu Sınavı		

Course Learning Outcomes**No Learning Outcomes**

C01	Students create a schedule for reinforced concrete structures.
C02	Students create the necessary cycles for concrete formwork construction.
C03	Students create project schedules and cost planning using MS Project.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	1	%60
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	6	3	18
Assignments	0	0	0
Presentation	1	5	5
Mid-terms	0	0	0
Practice	14	3	42
Laboratory	0	0	0
Project	5	15	75
Final examination	0	0	0
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P05	P06	
C01	5	3	2	4	4	
C02	5	3		4	4	
C03	5	3		4	4	



BAU464 Port Design					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
6	BAU464	Port Design	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach students the basic principles and engineering calculations of port design. Students are expected to understand the design of port structures, port operations, the construction of port facilities, and their safety, environmental, and economic impacts.

Teaching Methods and Techniques:

The course includes topics such as engineering calculations used in port design, port structures, transport systems, port operations, environmental impacts, and safety considerations. It will also address the challenges faced in port design and solutions.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources Port Engineering: Planning, Design, and Operations by K.H. Wiegmann and J.D. Knoll., Introduction to Port Engineering: A Guide to Port Design and Operations by O. O'R

Course Category

Mathematics and Basic Sciences :		Education :	
Engineering :		Science :	
Engineering Design :		Health :	
Social Sciences :		Field :	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Port Design and Basic Concepts		
2	Port Structures and Types		
3	Design of Port Transport Systems		
4	Port Safety and Management Systems		
5	Port Operations and Working Principles		
6	Environmental Impacts and Sustainable Port Design		
7	Economic Analysis and Investment Decisions in Port Design		
8	Midterm Exam		
9	Structural Calculations in Port Design		
10	Simulation and Modeling in Port Design		
11	Technological Innovations in Port Management		
12	International Standards and Practices in Port Design		
13	Material Selection and Durability in Port Structures		
14	Integrated Management Approaches in Port Design		
15	Future Trends in Port Design		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can understand the basic design principles of port structures.
C02	Can design and optimize port transportation systems.
C03	Can comprehend port operations and safety issues.
C04	Can analyze the environmental and economic impacts of port design.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
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	P02	P03	P05	P07
C01	5	5	4	2
C02	5	5	4	2
C03	5	5	3	2
C04	5	5	4	2



BAU465 Introduction to Coastal Engineering					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BAU465	Introduction to Coastal Engineering	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach students the basic principles of coastal engineering. Students are expected to understand coastal structures, coastal erosion, wave effects, and other coastal engineering problems.

Teaching Methods and Techniques:

The course includes the basic topics of coastal engineering. These topics cover coastal structures, coastal erosion, wave theory, coastal protection techniques, and calculations used in coastal engineering. It will also discuss challenges encountered in coastal engineering projects and solutions.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources Introduction to Coastal Engineering and Management by J. R. Wright and S. E. Short, Coastal Engineering: A Manual for Practical Applications by P. A. Davies

Course Category

Mathematics and Basic Sciences	:	Education	:	
Engineering	:	Science	:	
Engineering Design	:	Health	:	
Social Sciences	:	Field	:	100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Coastal Engineering and Basic Concepts		
2	Coastal Structures and Their Functions		
3	Wave Theory and Coastal Effects		
4	Coastal Erosion and Protection Methods		
5	Coastal Protection Structures		
6	Coastal Protection Strategies and Applications		
7	Calculations Used in Coastal Engineering		
8	Midterm Exam		
9	Design and Calculations of Coastal Structures		
10	New Methods and Technologies in Coastal Engineering		
11	Environmental Impacts in Coastal Engineering		
12	Sustainability in Coastal Engineering		
13	Coastal Protection and Planning		
14	Future Developments in Coastal Engineering		
15	Applications and Outcomes		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can comprehend the basic principles of coastal engineering.
C02	Can understand coastal structures and coastal protection techniques.
C03	Can analyze wave theory and coastal erosion.
C04	Can solve challenges encountered in coastal engineering projects and develop solutions.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P04	P05	P06	
C01	2	4	3	5	2	
C02	2	4	3	5	2	
C03	2	4	3	5	2	
C04	2	4	3	5	2	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

Rock Mechanics: Engineering Works in/on Rock Masses					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
6	BAU466	Rock Mechanics: Engineering Works in/on Rock Masses	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to provide an understanding of the mechanical properties of rock mass types that make up a large part of the Earth's crust and their expected behavior based on rock formations. Students are expected to comprehend the differences in behavior between rocks and soil masses. Additionally, they will learn how discontinuities and weakness zones in rock masses may affect the load-bearing capacity of construction foundations despite rocks having higher strength values. The course will equip students with knowledge on engineering structures that can be built in and on rocks, the theories of rock mechanics, and the behavior of rocks. Students will gain an understanding of the behavior of rock masses according to their discontinuity content and how this relates to engineering structures. They will be able to perform rock stability analyses and conduct risk assessments related to hazards. Furthermore, the course aims to provide students with knowledge about rock stability parameters encountered during the excavation, construction, and use phases of slopes, foundations, tunnels, and civil underground openings in rock masses.

Teaching Methods and Techniques:

This course includes an introduction to rock types, stress and deformation within rocks, types of mechanical behavior, physical properties of rocks, and testing methods for rock materials and rock masses. It also encompasses rock classification systems, important civil engineering structures built in and on rocks, and the associated stress environments. The course covers discontinuities in rocks, stereonet drawings, rock fracture initiation, stability of rock columns (pillars), rock foundations, and stresses around rock voids, tunnels, urban underground spaces, and rock slopes. Additionally, rock stability analysis is included to evaluate and understand the behavior of rocks under various conditions.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Mehmet Kemal Gökay

Name of Lecturers:

Prof. Dr. Mehmet Kemal Gökay

Assistants:**Recommended or Required Reading****Resources**

Goodman, R.E. (1988) Introduction to rock mechanics., Bieniawski, Z.T. (1989) Engineering rock mass classifications., Zhao, J., Labiouse, V., Dudt, J.P., Mathier, J.F. (2010) Rock

Course Category

Mathematics and Basic Sciences	: 30	Education	:
Engineering	: 30	Science	:
Engineering Design	: 30	Health	:
Social Sciences	:	Field	: 10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction, basic differences of rocks according to their types & formation conditions		
2	Stress and deformation relations in solids, application in rocks.		
3	Physical properties of rocks, laboratory and field test methods		
4	Mechanical behavior properties of rocks, rock failure criteria.		
5	Purpose of rock classification methods, proposed approaches at the earlier periods		
6	Rock classification methods (complete) and their usage examples.		
7	Differences in mechanical behavior of rock and soil materials & masses.		
8	Midterm Exam		
9	Stresses and deformations around the underground rock spaces (tunnels, shelters, depots, etc.) and engineered surface rock		
10	Massive & discontinuous rocks, discontinuity determination, uncertainties in discontinuities.		
11	Analysis of discontinuities with Stereonet drawings, stereonet analysis in underground and surface rock projects.		
12	Rock fracture (discontinuity) propagation, basic information of fracture mechanics of rocks. Rock foundation stability, their		
13	Rock stability analyses for urban underground spaces, tunnels, and rock slopes. Reinforcement efforts to have safe undergr		
14	Rock mechanics considerations in civil engineering application.		
15	Rock mechanics considerations in civil engineering application.		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students comprehend the physical differences of rock types and formations by understanding them.
C02	Students evaluate laboratory and field tests based on the difference between rock material and rock mass.
C03	Students can classify rocks based on the properties affecting the durability of rock masses related to underground and above-ground construction structures and plan excavation and construction a
C04	Students interpret the discontinuities within rocks by drawing and analyzing stereonet graphs.
C05	Students examine potential stability issues that may occur in rock slopes and rock voids during the planning (design) phase and evaluate them according to the proposed stability analysis criteria.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	2	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	0	0	0
Assignments	6	15	90
Presentation	0	0	0
Mid-terms	1	4	4
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
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
C01	3	4	4	3	3	4	3
C02	4	4	4	3	3	5	4
C03	3	3	5	4	5	4	4
C04	3	4	4	4	4	4	5
C05	3	3	4	5	5	5	4



BAU492 Bachelor Thesis					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
8	BAU492	Bachelor Thesis	0	0	12

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The course aims to enable students to independently analyze, study, and develop solutions for a problem at the undergraduate level in civil engineering, guided by scientific methods.

Teaching Methods and Techniques:

The course encompasses students conducting independent research in civil engineering using scientific methodologies. It includes investigating, analyzing, and developing solutions for assigned problems. The study must be systematically carried out throughout the semester and completed within 15 weeks after the topic is assigned. Any necessary extensions are determined by the examination board.

Prerequisites and co-requisites:

(BAU301) and (BAU304) and (BAU201) and (BAU205) and (BAU303)

Course Coordinator:

Prof. Dr. Murat Hamderi

Name of Lecturers:

Prof. Dr. Murat Hamderi

Assistants:

Recommended or Required Reading

Resources	
	Marder, M. P. (2011). Research methods for science. Cambridge University Press., Tan, W. (2022). Research methods: A practical guide for students and researchers. Wo
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	-
	-

Course Category

Mathematics and Basic Sciences	:		:	
Engineering	:	25	:	
Engineering Design	:	50	:	
Social Sciences	:		:	25
			:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the Capstone Project: Process, requirements, and evaluation criteria	-	-
2	Selection of research topic and problem definition		
3	Literature review and research methods		
4	Research methodology: Data collection and analysis techniques		
5	Technical report writing and academic ethics		
6	Project planning: Time management and workflow creation		
7	Case study analyses and review of similar engineering projects		
8	Interim Report Presentation		
9	Engineering design processes and calculation methods		
10	Experimental studies or field applications		
11	Data analysis and evaluation of results		
12	Writing the technical report and project documentation		
13	Presentation techniques and preparation of visual materials		
14	Project presentation rehearsals and feedback sessions		
15	Final Report Submission and Presentation Rehearsal		
16	Capstone Project Presentation and Evaluation		

Course Learning Outcomes

No	Learning Outcomes
C01	Students independently identify, analyze, and develop solutions for a problem in civil engineering using scientific methods.
C02	Students acquire skills in technical reporting, academic writing, and effectively presenting engineering projects.
C03	Students develop the ability to plan and implement project processes with an awareness of ethical and professional responsibilities.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%0

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	0	0	0
Hours for off-the-c.r.stud	14	15	210
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	14	9	126
Final examination	0	0	0
Total Work Load			336
ECTS Credit of the Course			12

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	2	3	3	4	4
C02	5	5	2	3	3	4	4
C03	5	4	3	4	3	3	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BSP201 Construction Site Internship					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BSP201	Construction Site Internship	0	0	4

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to provide students with practical experience in construction projects within the site environment. It seeks to enable students to gain knowledge in areas such as site management, construction processes, occupational safety, and quality control. Additionally, it aims to develop practical skills in the use of construction equipment, material management, and worker health. The course aims to offer students the opportunity to manage daily operations and improve organizational skills in construction projects. It also seeks to enhance students' ability to solve problems encountered in construction projects.

Teaching Methods and Techniques:

This course includes the essential activities carried out in the site environment of construction projects. It covers site management, occupational safety, and quality control processes. The course includes material management and the use of equipment on the construction site. It also encompasses the basic procedures related to worker health and safety. The course aims to provide practical experience in solving technical and organizational issues encountered during the construction process. Additionally, it covers topics such as site supervision and workforce management.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Mehmet Adil Akgül

Name of Lecturers:

Asist Prof.Dr. Mehmet Adil Akgül

Assistants:

Recommended or Required Reading

Resources Internship Instructions

Course Category

Mathematics and Basic Sciences	:		:	Education	:
Engineering	:	50	:	Science	:
Engineering Design	:	50	:	Health	:
Social Sciences	:		:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Students visit the construction site and actively participate in the construction processes.		
2	Students visit the construction site and actively participate in the construction processes.		
3	Students visit the construction site and actively participate in the construction processes.		
4	Students visit the construction site and actively participate in the construction processes.		
5	Students visit the construction site and actively participate in the construction processes.		
6	Students visit the construction site and actively participate in the construction processes.		
7	Students visit the construction site and actively participate in the construction processes.		
8	Midterm Exam Week		
9	Students visit the construction site and actively participate in the construction processes.		
10	Students visit the construction site and actively participate in the construction processes.		
11	Students visit the construction site and actively participate in the construction processes.		
12	Students visit the construction site and actively participate in the construction processes.		
13	Students visit the construction site and actively participate in the construction processes.		
14	Students visit the construction site and actively participate in the construction processes.		
15	Students visit the construction site and actively participate in the construction processes.		
16	Project presentation		

Course Learning Outcomes

No	Learning Outcomes
C01	Gains basic knowledge and skills related to site management and organization in construction projects.
C02	Applies occupational safety and quality control processes in the site environment.
C03	Effectively manages material handling and equipment usage on the construction site.
C04	Generates solutions to technical and organizational problems encountered during the construction process.
C05	Implements basic procedures related to workforce management and worker health on the site.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, social, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%0

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	0	0	0
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	1	60	60
Laboratory	0	0	0
Project	1	52	52
Final examination	0	0	0
Total Work Load			112
ECTS Credit of the Course			4

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05
C01	4	4	5		3
C02				4	
C03	4				
C04	4				
C05		4			



BUP403 Professional Training					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	BUP403	Professional Training	0	0	4

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to teach students the activities carried out in the office environment of civil engineering. It seeks to enable students to gain knowledge in areas such as project design, engineering calculations, material selection, and budget planning. Additionally, it aims to develop the skills necessary to create and analyze technical drawings for construction projects. The course also targets to equip students with the competence to effectively use software and tools utilized in office engineering. It aims to provide students with practical experience in planning and managing engineering projects.

Teaching Methods and Techniques:

This course includes the fundamental activities carried out in the office environment of civil engineering. It covers topics such as project design, engineering calculations, and material selection. Additionally, the course includes the processes of preparing and analyzing technical drawings for construction projects. Students will also engage with practical applications such as using engineering software, budget planning, and project management. The course addresses the challenges faced in office engineering and focuses on planning, coordination, and management of engineering projects.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Mehmet Adil Akgül

Name of Lecturers:

Asist Prof.Dr. Mehmet Adil Akgül

Assistants:

Recommended or Required Reading

Resources Experiences in structure sites

Course Category

Mathematics and Basic Sciences :		Education :	
Engineering : 70		Science :	
Engineering Design : 30		Health :	
Social Sciences :		Field :	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
2	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
3	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
4	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
5	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
6	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
7	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
8	Midterm Week		
9	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
10	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
11	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
12	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
13	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
14	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
15	Students visit the office environment and actively participate in the design, calculation, and planning processes of construc		
16	Project Presentation		

Course Learning Outcomes

No	Learning Outcomes
C01	Gains the competence to carry out the design phases of construction projects and engineering calculations.
C02	Acquires knowledge and skills in preparing and analyzing technical drawings.
C03	Effectively use engineering software.
C04	Carries out office engineering practices such as project management, budget planning, and material selection.
C05	Actively participate in the planning, coordination, and management processes of construction projects.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%0

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	0	0	0
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	1	56	56
Laboratory	0	0	0
Project	1	56	56
Final examination	0	0	0
Total Work Load			112
ECTS Credit of the Course			4

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05
C01	4	4	5		3
C02				4	
C03	4				
C04	4				
C05		4			



BWL034 International Business					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	BWL034	International Business	2	1,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

It is aimed to ensure that the basic tools required for cross-border business activities are learned both in an applied, strategic and operational context and in a theoretical framework.

Teaching Methods and Techniques:

Internationalization theories, FDI (Foreign Direct Investment) theories from the perspective of businesses, Internationalization strategies of multinational enterprises (MNE), Organizational forms of MNE, International Finance and Accounting International Human Resources Management (HRM), Introduction to international logistics and production

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Hüseyin NUROĞLU

Name of Lecturers:

Asist Prof.Dr. Hüseyin NUROĞLU Prof.Dr. Albrecht Söllner

Assistants:

Research Assist. Umur Ejder HALHALLI

Recommended or Required Reading

Resources	Schmid, S. (Hrsg.) (2009): Management der Internationalisierung, Schmid, S.(2013): Strategien der Internationalisierung, München, 3. Aufl., Zentes, J. / Swoboda, B./ Mor Paul, J.(2015a): Foliensammlung „Internationale Betriebswirtschaftslehre“, TDU Kutschker, M. / Schmid, S. (2011): Internationales Management, München, 7. Aufl., relevante Kapitel
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Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	: 100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Internationalization from a business perspective- Introduction, Definitions, Terms- Conditions of the Global Economy		
2	Theories of Internationalization		
3	International Business Strategies: Basic principles, market entry strategies		
4	International Business Strategies: Strategic Direction		
5	Organizational Structure of International Businesses		
6	International materials management and production;International Supply Chain Management (SCM)		
7	Foreign trade operations and financing:- Conditions of foreign trade- Risks in foreign trade- Foreign trade financing		
8	Midterm Exam		
9	International Marketing		
10	Human ResourcesCross-cultural communication: Theories of cross-cultural communicationPersonnel management and lead		
11	International Finance and Accounting: Finance		
12	Investment and Corporate Control: Planning and Reporting, Analysis and Control		
13	Culture in International Firms, Intercultural Communication, Theories of Intercultural Communication		
14	Public Relations Management in International Companies		
15	International Research and Development Management		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	At the end of the course, students gain a basic knowledge of international business management.
C02	With the acquired substantive and methodological competences, students will be able to ask questions about international business management and structures and gain the ability to make business decisions.
C03	Students acquire the methods, tools and basic theoretical knowledge to solve strategic and operational problems in cross-border businesses.
C04	Students will gain an understanding of how companies operate in a global environment, both as a whole business and in the context of functional areas.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	1	14
Hours for off-the-c.r.stud	12	11	132
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	4	4
Practice	14	1	14
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
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
C01	4	4	5	2	4	2	2
C02	5		4	4	4		3
C03	3	5	2		5	2	
C04	5	4	4	3	4	1	3



BWL102 Organisation					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	BWL102	Organisation	2	2	3

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is for students to learn and apply various possibilities for the goal-oriented design of different organizations (e.g., companies, universities, non-profit organizations) based on a historical analysis. Students will develop the knowledge and skills to understand how organizations are influenced by environmental factors and propose specific design forms accordingly.

Teaching Methods and Techniques:

Contents include: "organization" as a concept, task analysis and synthesis, coordination of tasks, values (diversity, CSR ...) and organizational culture, situational influences on organizational design, balance: authority / control, specialization / coordination, strategies, innovation and cooperation.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Dilek ZAMANTILI NAYIR

Name of Lecturers:

Prof. Dr. Dilek ZAMANTILI NAYIR

Assistants:

Research Assist. Merve Ahter DEDE

Recommended or Required Reading

Resources Book "Wave of Effectiveness - The Model for Sustainably Successful Organizations in the Digital Age" (2020-2021 - changes every semester), Various texts from the "Harvard Textbook „Management“ (Robbins/Coulter – 14. Edition)

Course Category

Mathematics and Basic Sciences	:		:	
Engineering	:		:	
Engineering Design	:		:	
Social Sciences	:	70	:	30

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Presentation of lecturer - Overview of semester program - Presentation of schedule - Presentation of form of examination		
2	A 2: HistoryFilm - RWTH Aachen - Prof. Dr. Frank Piller https://learning.edx.org/course/course-v1:RWTHx+EBWL101+3T20		
3	VA 3: DecisionsGroup 1 - Presentation 1Group 2 - Presentation 2		
4	VA 4: Environment - Global EnvironmentGroup 3 - Presentation 3Group 4 - Presentation 4		
5	VA 5: Diversity "What is diversity management" https://www.youtube.com/watch?v=YL3obPmwJJ4		
6	VA 6: How do you write a scientific paper? (Midterm exam) - Announcement of topicsGroup 5 - Presentation 5Group 6 - Pr		
7	VA 7: Change 1 and Change 2Group 7 - Presentation 7Group 8 - Presentation 8		
8	Midterm Exam		
9	VA 8: PlanningGroup 9- Presentation 9Group 10 - Presentation 10		
10	VA 8: Planning Group 9- Presentation 9 Group 10 - Presentation 10		
11	VA 9: Strategy https://www.kraus-und-partner.de/wissen-und-co/wiki/strategieentwicklung-corona-krise-strategie-entwickel		
12	EntrepreneurshipGroup 3: Presentation from readingGroup 4: Presentation from reading		
13	Organization structureGroup 5: Presentation from readingGroup 6: Presentation from reading		
14	Staffing decisionsGroup 7: Presentation from readingGroup 8: Presentation from reading		
15	TeamsGroup 9: Presentation from readingGroup 10: Presentation from reading		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students acquire knowledge, skills and personal competences in the field of organisation.
C02	Students gain sensitivity to organisational issues in order to conceptually develop and implement integrated solutions as a specialist or manager.
C03	Students acquire advanced theoretical and practical expertise in organisational studies and a comprehensive and integrated knowledge of key theories and models (e.g. change management, business strategy).
C04	Students gain the ability to develop and reflect on solutions to existing problems.
C05	Students gain the ability to discuss and further develop organisational solutions to problems according to experts and non-experts.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%20
Quizzes	0	%0
Assignment	4	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	3	42
Assignments	4	2	8
Presentation	0	0	0
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
C01	2	3	4	2	3	2	3
C02	3		2	4		1	4
C03	4	4	4	2	2	2	3
C04	4	4	3	2			3
C05		3	4	2	2	2	2



Fundamentals of Marketing					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	BWL201	Fundamentals of Marketing	4	3	5

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of the course is to enable students to acquire knowledge about the fundamental principles of marketing, analyze companies' marketing plans, and create their own marketing strategies.

Teaching Methods and Techniques:

The course content encompasses topics such as marketing and management model as a company function, fundamental marketing processes, consumer behavior, strategic marketing decisions, operational marketing decisions, and marketing mix tools.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Moritz Martin BOTTIS

Name of Lecturers:

Asist Prof.Dr. Moritz Martin BOTTIS

Assistants:

Research Assist. Ömer HURMACI

Recommended or Required Reading

Resources

Kotler, P.; Keller, K.L.; Opresnik, M.O. (2015), Marketing-Management, 14 Aufl., Pearson Deutschland, Hallbergmoos.
Bruhn, M. (2016), Marketing: Grundlagen für Studium und Praxis, 13. Aufl., Springer Gabler, Wiesbaden.
Balderjahn, I. (2013), Nachhaltiges Management und Konsumentenverhalten, UVK Lucius, München.

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 100	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		Lecture Notes and Books
2	Marketing Planning 1		Lecture Notes and Books
3	Marketing Planning 2		Lecture Notes and Books
4	Marketing Research		Lecture Notes and Books
5	Consumer Behavior		Lecture Notes and Books
6	Marketing Strategy 1		Lecture Notes and Books
7	Marketing Strategy 2		Lecture Notes and Books
8	Midterm Exam		
9	Marketing Strategy 2		
10	Marketing Instruments 1: Product		Lecture Notes and Books
11	Marketing Instruments 2: Price		Lecture Notes and Books
12	Marketing Instruments 3: Place		Lecture Notes and Books
13	Marketing Instruments 3: Place		Lecture Notes and Books
14	Marketing Instruments 4: Promotion 1		Lecture Notes and Books
15	Marketing Instruments 4: Promotion 2		Lecture Notes and Books
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students define and understand modern marketing.
C02	Students become knowledgeable about consumer behavior.
C03	Students gain knowledge about marketing strategy.
C04	Students become knowledgeable about the marketing mix.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	9	9	81
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P07	
C01	5	3	3	2	2	2	
C02	3	5	5	2	1	2	
C03	4	4	4	3	2	2	
C04	4	4	5	2	2	3	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

BWL212 Strategic Management					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	BWL212	Strategic Management	4	3	5

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The main objective of the course is to impart methods used in the analysis and understanding of qualitative and quantitative concepts, as well as strategic marketing dimensions, enabling students to comprehend companies' strategic marketing activities and design their own strategic implementations.

Teaching Methods and Techniques:

The course content provides students with information about strategic marketing decisions at the management level in both theory and practical sessions. These decisions encompass strategies related to both demand and supply sides.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Moritz Martin BOTTIS

Name of Lecturers:

Asist Prof.Dr. Moritz Martin BOTTIS

Assistants:

Research Assist. Ömer HURMACI

Recommended or Required Reading

Resources

Backhaus, K./Schneider, H., Strategisches Marketing, 2. Auflage, Schäffer Poeschel, Stuttgart, 2009
Backhaus, K./Schneider, H., Strategisches Marketing, 3. Auflage, Schäffer Poeschel, Stuttgart, 2020

Course Category

Mathematics and Basic Sciences	:		:	
Engineering	:		:	
Engineering Design	:		:	
Social Sciences	:	40	:	
			:	60

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Strategic Marketing	Bibliography	Lecture script
2	Comparative Competitor Advantage (KKV) as the Basis for Strategic Marketing	Bibliography	Lecture script
3	Game Arena: Selection	Bibliography	Lecture script
4	Game Arena: Market Segmentation	Bibliography	Lecture script
5	Game Rules: Exogenous	Bibliography	Lecture script
6	Game Rules: Endogenous	Bibliography	Lecture script
7	Game Behavior: Information Basis	Bibliography	Lecture script
8	Midterm Exam		
9	Game Behavior: Behavior Options 1	Bibliography	
10	Game Behavior: Behavior Options 1	Bibliography	Lecture script
11	Game Behavior: Behavior Options 2	Bibliography	Lecture script
12	Price Leader Strategy	Bibliography	Lecture script
13	Quality Leader Strategy	Bibliography	Lecture script
14	Time Leader Strategy	Bibliography	Lecture script
15	Dynamic Perspective: Game Arena	Bibliography	Lecture script
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

- C01 Students can analyze and understand strategic marketing decisions based on acquired concepts and methods.
- C02 Students can make strategic marketing decisions independently with the learned framework.
- C03 Students can develop strategic marketing strategies in the business world.

Program Learning Outcomes

No Learning Outcome

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	9	9	81
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes							
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	P01	P02	P03	P04	P05	P07
C01	4	5	4	4	4	4
C02	5	3	5	5	3	5
C03	5	3	5	5	3	5



DEU121 Technical German I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	DEU121	Technical German I	2	2	2

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Compulsory

Objectives of the Course:
The Students should have german B1 level knowledge in reading, writing, speaking and grammar.

Teaching Methods and Techniques:
Provide students with the ability to write at the basic level (to introduce themselves and others physically / introduce themselves and others as characters / write short stories / CV / e-mail / composition) • Ensure that students improve their B1 level speaking skills (verbal presentation of self and others / directions / directions

Prerequisites and co-requisites:

Course Coordinator:
Lecturer Selahaddin SOYUDOĞRU

Name of Lecturers:
Lecturer Selahaddin SOYUDOĞRU

Assistants:

Recommended or Required Reading

Resources Hutchinson, T. & Sherman, K. (2012). Network 3. Oxford University Press: New York

Course Category

Mathematics and Basic Sciences	:	Education	:	100
Engineering	:	Science	:	
Engineering Design	:	Health	:	
Social Sciences	:	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the course and the course materials		
2	Welcome to school! Introducing yourself/ Asking questions/ General introduction to English		
3	Let's introduce ourselves/ Welcoming others/Personal information/Present simple and present continuous		
4	Reading and writing: Ms Medina's Spanish Class/ The fashionable milliner		
5	Things happen/ Describing unexpected events/Expressions with 'get'/ Present perfect with 'for' and 'since'		
6	Reading and writing: The 90/10 Secret/ You can do it!		
7	Describing a location/ Describing housing/ Articles		
8	Midterm Exam		
9	Reading and writing: Sofa Surfing/ The Alhambra		
10	Seeing old friends/ Talking about an old friend/ Phrasal verbs/ Separable and non-separable phrasal verbs/ reading and sp		
11	Finding a lost friend/Unit 5: Congratulations!/Discussing events in the past		
12	Achievements/Present perfect and past simple/ Reading and Speaking: Want to win? Get Lin!		
13	Adventure seekers/Unit 6: Healthy Living: Planning to do something healthy/ Health and fitness/ Future/Reading and writin		
14	A healthy lifestyle/ Unit 7: What a pianist/Talking about being late/Transportation problems/Past perfect/Reading and writing		
15	A New York City Taxi Driver/ Unit 8: Eat up! Making suggestions/Describing food/ Tag questions/Reading and Writing: 46 F		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will have B1 level of English knowledge.
C02	Students will develop their reading comprehension skills at B1 level.
C03	Students will improve their ability to understand what they listen at B1.
C04	Students will be informed at B1 level and will be able to use it effectively.
C05	Students will learn vocabulary at B1 level and use them during reading, listening and speaking.
C06	Students will improve their writing abilities at the baseline level (to promote themselves and others physically / introduce themselves and others as characters / write short stories / CV / e-mail).
C07	Students will improve their speaking skills at B1 (verbally introducing themselves / others / asking directions / making directions / telling them what they have done in a past time / describing their

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes				
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	P01	P04	P07
All	3	5	5
C01	3	5	5
C02	3	5	5
C03	3	5	5
C04	3	5	5
C05	3	5	5
C06	3	5	5
C07	3	5	5



DEU122 Technical German II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	DEU122	Technical German II	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The Students should have german B2 level knowledge in reading, writing, speaking and grammar.

Teaching Methods and Techniques:

Provide students with the ability to write at the basic level (to introduce themselves and others physically / introduce themselves and others as characters / write short stories / CV / e-mail / composition) • Ensure that students improve their B1 level speaking skills (verbal presentation of self and others / directions / directions)

Prerequisites and co-requisites:**Course Coordinator:****Name of Lecturers:**

Okutman İknur KARADAĞLI DİRİK

Assistants:**Recommended or Required Reading****Resources** Hutchinson, T. & Sherman, K. (2012). Network 3. Oxford University Press: New York

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Course Category

Mathematics and Basic Sciences	:	Education	:	100
Engineering	:	Science	:	
Engineering Design	:	Health	:	
Social Sciences	:	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the course and the course materials		
2	Welcome to school! Introducing yourself/ Asking questions/ General introduction to English		
3	Let's introduce ourselves/ Welcoming others/Personal information/Present simple and present continuous		
4	Reading and writing: Ms Medina's Spanish Class/ The fashionable milliner		
5	Things happen/ Describing unexpected events/Expressions with 'get'/ Present perfect with 'for' and 'since'		
6	Reading and writing: The 90/10 Secret/ You can do it!		
7	Describing a location/ Describing housing/ Articles		
8	Reading and writing: Sofa Surfing/ The Alhambra		
9	Midterm exams		
10	Seeing old friends/ Talking about an old friend/ Phrasal verbs/ Separable and non-separable phrasal verbs/ reading and sp		
11	Finding a lost friend/Unit 5: Congratulations!/Discussing events in the past		
12	Achievements/Present perfect and past simple/ Reading and Speaking: Want to win? Get Lin!		
13	Adventure seekers/Unit 6: Healthy Living: Planning to do something healthy/ Health and fitness/ Future/Reading and writin		
14	A healthy lifestyle/ Unit 7: What a pian!/Talking about being late/Transportation problems/Past perfect/Reading and writing		
15	A New York City Taxi Driver/ Unit 8: Eat up! Making suggestions/Describing food/ Tag questions/Reading and Writing: 46 F		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will have B1 level of English knowledge.
C02	Students will develop their reading comprehension skills at B1 level.
C03	Students will improve their ability to understand what they listen at B1.
C04	Students will be informed at B1 level and will be able to use it effectively.
C05	Students will learn vocabulary at B1 level and use them during reading, listening and speaking.
C06	Students will improve their writing abilities at the baseline level (to promote themselves and others physically / introduce themselves and others as characters / write short stories / CV / e-mail).
C07	Students will improve their speaking skills at B1 (verbally introducing themselves / others / asking directions / making directions / telling them what they have done in a past time / describing their

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

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

Contribution of Learning Outcomes to Programme Outcomes		
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	P01	P04
All	3	5



EBT309 Introduction to Quantum Energy Systems					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	EBT309	Introduction to Quantum Energy Systems	4	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The main aim of the course to introduce and investigate the fundamental concepts of quantum energy systems. An introduction to quantum physics will be given and the governing laws of quantum thermodynamics will be presented to elaborate quantum energy systems.

Teaching Methods and Techniques:

This course covers fundamental concepts of quantum theory, quantum thermodynamic systems and their properties, quantum thermodynamical processes, work, heat for closed and open systems, quantum heat engines and refrigerators.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Elif Yunt

Name of Lecturers:

Asist Prof.Dr. Elif Yunt

Assistants:

Recommended or Required Reading

Resources Quantenmechanik: Einführung, W. Greiner Thermodynamik und Statistische Mechanik, W. Greiner Quantum Computation and Quantum Information, Micheal A. Nielsen and Martin A. Nielsen Quantum Entanglement, Quantum Thermodynamics in the Quantum Regime-Fundamental Aspects and New Directions, Felix Binder, Luis A. Correa, Gerardo Adesso, Fundamental Theories in Physics 195, Springer

Course Category

Mathematics and Basic Sciences :	30	Education :	70
Engineering :		Science :	
Engineering Design :		Health :	
Social Sciences :		Field :	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Fundamentals: Probability Theory and Linear Algebra		
2	Introduction to Quantum Theory: Vector Formalism		
3	Postulates of Quantum Theory		
4	Density matrix theory		
5	Overview of classical thermodynamics		
6	Introduction to quantum thermodynamics		
7	Quantum heat engines: Quantum Otto Cycle		
8	Midterm Exam		
9	Quantum heat engines: Other Cycles		
10	Non-equilibrium thermodynamic systems: Open Quantum Systems (Theory)		
11	Non-equilibrium thermodynamic systems: Open Quantum Systems (Example)		
12	Markovian Equations (Theory)		
13	3 Markovian Equations (Example)		
14	Non-Markovian Equations (Theory and Example)		
15	Non-Markovian Equations (Theory and Example)		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

- C01 Understands the fundamental concepts of quantum thermodynamics and can compare them with classical thermodynamics.
- C02 Can analyze energy systems using the principles of quantum thermodynamics.
- C03 Can integrate quantum thermodynamics applications into real-world problems and develop problem-solving skills in this field.

Program Learning Outcomes

No Learning Outcome

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	4	%20
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	9	108
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	1	14
Laboratory	0	0	0
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							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	5	5	5	3	1
C02	5	5	5	5	5	3	1
C03	5	5	5	5	5	3	1



EBT327 Statistical Methods for Data Analysis					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	EBT327	Statistical Methods for Data Analysis	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The participants of the module will be able to plan and carry out data surveys in a technical working environment, taking into account statistical principles and to evaluate the collected data. Based on the data collection and analysis, applicable key methods for problem identification and sustainable solutions are taught in company practice. ?Competence: 10% ?Method competence: 20% ?System competence: 40% ? Social competence: 30%

Teaching Methods and Techniques:

The course consists of the weekly 3-hour seminars with 1-hour practice and 1-hour lab. The students also get homework each week, which is worked out together with the tutor during the exercise.

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Asist Prof.Dr. Yaşanur Kayıkcı

Assistants:

Recommended or Required Reading

Resources Statistische Methoden der Datenanalyse https://www-zeuthen.desy.de/~kolanosk/smd_ss08/skripte/skript.pdf Sachs, L. (2004): Angewandte Statistik, 11.Auflage, Springer

Course Category

Mathematics and Basic Sciences	:	60	Education	:	
Engineering	:	40	Science	:	
Engineering Design	:		Health	:	
Social Sciences	:		Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	What is statistics? Types of statistics, basic terms of statistics		
2	Scale level, classification of data, typography of data graphics		
3	Reference distributions, measures: mode, media, mean, quartiles, variance, standard deviation, skew, IQR, box plot		
4	Random Sample and Parameters, Probability Distributions, Discrete and Continuous Distribution Models		
5	Special distributions: binomial distribution, multinomial distribution, Poisson distribution, uniform distribution, normal distrib		
6	Distributions of multiple variables, probability density, distribution function, boundary distribution, expectation values, corre		
7	Linear functions of several random variables		
8	Non-linear functions of random variables		
9	Random Variables, Samples and Estimates Transformations: Paired Samples, Independent Samples		
10	Statistical test methods: significance analysis distribution, t-distribution, Kolmogorov-Smirnov, F-distribution, Chi-square tes		
11	Confidence Intervals: Bayes Confidence Intervals, Classic Confidence Intervals		
12	The maximum likelihood method, least squares method		
13	Classification and statistical learning: decision trees; Monte Carlo methods		
14	Review		

Course Learning Outcomes

No	Learning Outcomes	
C01	Basics of statistics, methods of data collection, data analysis	
C02	Analyzing data via Excel Spreadsheet, SPSS, and R	

Program Learning Outcomes

No	Learning Outcome	
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.	
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact	
P03	The ability to communicate effectively with diverse audiences.	
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,	
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.	
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.	
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.	

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	6	84
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	15	15
Practice	14	3	42
Laboratory	14	2	28
Project	0	0	0
Final examination	1	15	15
Total Work Load			184
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes
bbb





ENG101 English I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	ENG101	English I	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of the course is to equip students with basic English knowledge and practice. In this context, necessary grammatical structures will be taught, and students are expected to use these structures effectively in both written and spoken communication.

Teaching Methods and Techniques:

The course includes integrated activities at the A2 level, focusing on grammar, vocabulary, and daily conversation skills.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer İlknur KARADAĞLI DİRİK

Name of Lecturers:

Lecturer Kübra ERDEMLecturer Vahap Sümer ÖZSÜER

Assistants:**Recommended or Required Reading**

Resources Dooley, J. & Evans, V. (2004). Grammarway 1, Express Publishing.,McCarthy, M. & O'Dell, F. (2019). English Vocabulary in Use -Elementary. Cambridge University Press.,

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	General information about the course. Unit 1- Me and you. 1A-Hi! 1B- Same but different. The Present Simple Tense		
2	1C- Let's meet. 1D- Family and friends. How to make suggestions. Possessive ('s)		
3	Revision of Unit 1 Grammar, vocabulary, reading, writing and speaking activities		
4	Unit 2-Lifestyle 2A- Can't live without it. 2B-Your lifestyle and you Countable and uncountable nouns (a-an-some-any) Advt		
5	2C- Eating out 2D- The Indian Relay How to order a meal in a restaurant. Like, hate, love + verb-ing		
6	Revision of Unit 2 Grammar, vocabulary, reading, writing and speaking activities		
7	General revision for the Midterm exams		
8	Midterm Exam		
9	Unit 3-Home 3A- Come in. 3B-Too much stuff. Demonstrative adjectives (this-that-these-those-here-there) To possess (ha		
10	3C- What can I bring? 3D- Your neighbourhood How to make invitations and offers. There is /There are		
11	Revision of Unit 3 Grammar, vocabulary, reading, writing and speaking activities		
12	Unit 4-This world 4A- What a decade! 4B- Life in number The Past Simple Tense (was-were) How much/ How many?		
13	4C- Where can I get ...? 4D-Sakura Time How to get help in shops Imperatives Advice (Should/Shouldn't)		
14	Revision of Unit 4 Grammar, vocabulary, reading, writing and speaking activities		
15	Preparation for the Final Exam		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will acquire English proficiency at the A1-A2 level.
C02	Students will develop reading comprehension skills at the A2 level.
C03	Students will improve their listening comprehension skills at the A2 level.
C04	Students will acquire A2-level grammar and will be able to use it effectively.
C05	Students will learn A2-level vocabulary and will be able to use it during reading, listening, and speaking activities.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic facto
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	1	12
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
	P01	P03	P04	P07	
All	3		5		
C01		1		1	
C02		1		1	
C03		1		1	
C04		1		1	
C05		1		1	



ENG102 English II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ENG102	English II	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is to help learners improve their English language level to A2 with the help of integrated four skills and grammar, vocabulary and everyday life activities.

Teaching Methods and Techniques:

The course includes integrated activities in A2 level along with a focus on grammar, vocabulary and daily conversational skills.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer İknur KARADAĞLI DİRİK

Name of Lecturers:

Lecturer Vahap Sümer ÖZSÜER Lecturer Kübra ERDEM

Assistants:**Recommended or Required Reading****Resources**

Dooley, J. & Evans, V. (2004). Grammarway 1, Express Publishing., McCarthy, M. & O'Dell, F. (2019). English Vocabulary in Use -Elementary. Cambridge University Press. Eales, F., & Oakes, S. (2022). Speakout (3. Ed.). Pearson

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Unit 5- The past5A- Then and now5B- What went wrong?The Past Simple Tense		Eales, F., & Oakes, S. (2022). Speakout
2	5C- Sorry, I'm late5D- My weekend was ...How to apologise and make excusesAdjectives and Modifiers		Eales, F., & Oakes, S. (2022). Speakout
3	Revision of Unit 5Grammar, vocabulary, reading, writing and speaking activities		
4	Unit 6-Out and about6A- Meet me in town6B-My wayThe Present Continuous TenseComparative Adjectives		Eales, F., & Oakes, S. (2022). Speakout
5	Revision of Unit 6Grammar, vocabulary, reading, writing and speaking activities		Eales, F., & Oakes, S. (2022). Speakout
6	Speaking activities		Eales, F., & Oakes, S. (2022). Speakout
7	General Revision for Midterm Exam		
8	Mid-term Exams		Eales, F., & Oakes, S. (2022). Speakout
9	Unit 7-Work7A- Odd jobs7B- An extra dayArticles The Present Simple vs. The Present Continuous Tenses		Eales, F., & Oakes, S. (2022). Speakout
10	7C- I'm calling to check ...7D- Would you like to ...?How to phone for informationVerbs and to infinitive		Eales, F., & Oakes, S. (2022). Speakout
11	Revision of Unit 7Grammar, vocabulary, reading, writing and speaking activities		Eales, F., & Oakes, S. (2022). Speakout
12	Unit 8-Travellers8A- Trip advice8B- Surprise travelSuperlative AdjectivesBe going to		Eales, F., & Oakes, S. (2022). Speakout
13	8C- At a hotel8D- Artctic AcademyHow to make requests and offersAdverbs of manner		Eales, F., & Oakes, S. (2022). Speakout
14	Revision of Unit 8Grammar, vocabulary, reading, writing and speaking activities		Eales, F., & Oakes, S. (2022). Speakout
15	General Revision for Final Exam		
16	Final Exams		Eales, F., & Oakes, S. (2022). Speakout

Course Learning Outcomes

No	Learning Outcomes
C01	Students will achieve English proficiency at the A2 level.
C02	Students will be able to improve their reading comprehension skills to A2 level.
C03	Students will be able to improve their listening comprehension skills to A2 level.
C04	Students will be able to gain grammatical knowledge at A2 level and effectively put it into practice
C05	Students will be able to obtain lexical competency at A2 level and efficiently utilise this competency in their reading, listening and speaking.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	1	12
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes		
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bbb

	P03	P07
C01	1	1
C02	1	1
C03	1	1
C04	1	1
C05	1	1



ENG201 English III					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ENG201	English III	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is to help learners improve their English language level to B1.1 with the help of integrated four skills and grammar, vocabulary and everyday life activities.

Teaching Methods and Techniques:

The course consists of integrated activities in B1.1 level along with a focus on grammar, vocabulary and daily conversational skills.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer İknur KARADAĞLI DİRİK

Name of Lecturers:

Lecturer İknur KARADAĞLI DİRİK Lecturer Gökçe ŞALTAN

Assistants:**Recommended or Required Reading****Resources**

Clarke, S. (2008). Macmillan English Grammar in Context-Essential. ,Dooley, J. & Evans, V. (2004). Grammarway 1. Express Publishing. , Redman, S. (1997). English Voc
Eales, F., & Oakes, S. (2022). Speakout (3rd Ed.). Pearson

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	General information about the course.Unit 1- People (The Present Simple Tense)1A-Who are you?		
2	1B- Good people (The Present Continuous Tense)1C- Let's Talk! (Verb Patterns)		
3	1D- Lifestyle (Modifiers)Street Interviews about lifestyles Revision of Unit 1Grammar, vocabulary, reading, writing and spee		
4	In-class Writing checkUnit 2 – Tale Tellers 2A - What happened? (-ed/-ing Adjective Endings)2B - Storytelling (Past Simple;		
5	2C- A Likely Story (Collocations with get and make)2D- The Story of a Place (Prepositions of Time)		
6	Revision of Unit 2Grammar, vocabulary, reading, writing and speaking activitiesWriting: Write a story about a memorable e		
7	Unit 2: Documentary Mediterranean with Simon Reeve In-class Writing checkGeneral revision for the Midterm exams Vocab		
8	Midterm Exam		Hughes, J. & Stephenson, H. (2012). Lif
9	Unit 3 - Questions3A- Facts and Figures (Questions Forms)3B – Decisions (Future Plans and Intentions)		
10	3C - Can I ask you ... ? (How to make polite inquiries)3D – What matters most? (Phrasal Verbs)		
11	Revision of Unit 3Street Interviews about what's important in lifeGrammar, vocabulary, reading, writing and speaking activi		
12	Unit 4 – Winners 4A – Success (Modals for rules and advice)4B – First! (Articles)		
13	4C - Taking part (Can and Can't)4D – Top Gear: Nepal (Present Perfect + Superlative)		
14	Revision of Unit 4Writing: Write an email/letter giving adviceGrammar, vocabulary, reading, writing and speaking activities		
15	General Revision for Final Exam		
16	Final Exam		Hughes, J. & Stephenson, H. (2012). Lif

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to increase their existing vocabulary knowledge to B1.1 level.
C02	Students will be able to increase their existing grammar knowledge to B1.1 level.
C03	Students will be able to improve their reading and listening comprehension skills.
C04	Students will be able to learn and practice how to write emails, short paragraphs, and notices.
C05	Students will be able to carry out social activities such as giving advice, inviting, accepting or declining invitations, etc.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic facto
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	1	12
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes		
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bbb		
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	P03	P07
C01	1	1
C02	1	1
C03	1	1
C04	1	1
C05	1	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ENG202 English IV					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ENG202	English IV	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of this course is to help learners improve their English language level to B1.2 with the help of integrated four skills and grammar, vocabulary and everyday life activities.

Teaching Methods and Techniques:

The course includes integrated activities in B1.2 level along with a focus on grammar, vocabulary and daily conversational skills.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer İknur KARADAĞLI DİRİK

Name of Lecturers:

Lecturer Gökçe ŞALTAN Lecturer Kübra ERDEM

Assistants:**Recommended or Required Reading**

Resources Dooley, J. & Evans, V. (2004). Grammarway 1. Express Publishing., Dooley, J. & Evans, V. (2004). Grammarway 2. Express Publishing. , Redman, S. (1997). English Voca Eales, F., & Oakes, S. (2022). Speakout (3rd Ed.). Pearson

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	General Information about the CourseUnit 5-NewsUnit 5A-Fake NewsRelative Clauses		
2	5B-Newsmakers (Reported Speech)5C-Good News (How to give abd respond to personal news)		
3	5D- The future of news (will-might and be going to)Unit 5-RevisionGrammar, vocabulary, reading, writing and speaking act		
4	In-class writing check Unit 6-Creators6A- The two Pablos (used to)6B- Be creative. (Comparatives and Superlatives)		
5	6C-Why do you think that? (How to ask for and give opinions)6D- An artist work (for, since and yet)		
6	Revision of Unit 6Grammar, vocabulary, reading, writing and speaking activities.Writing task: Write a nomination for an aw		
7	In-class writing check Unit 6/Documentary: What do artists do all day?		
8	Midterm Exam		
9	Unit 7-Travel7A-Good tourists (First and Second Conditionals)7B-Globetrotters (Quantifiers)		
10	7C- You must see.! (How to make and respond to recommendations)7D- Go solo? (Reflexive Pronouns)		
11	Revision of Unit 7Grammar, vocabulary, reading, writing and speaking activities.Street Interviews about travellingWriting tz		
12	In-class writing check UNİT 8-Know-how8A- Doers and dreamers (Can, could, be able to)8B- Video everywhere (Active anc		
13	8C- Help! (How to describe a problem and make recommendations)8D- A gifted learner (-ing form)Writing Task: Write a fo		
14	In-class writing check Revision of Unit 8Grammar, vocabulary, reading, writing and speaking activities.		
15	Unit 8-Documentary: Inside the Human Body		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to increase their existing vocabulary knowledge to B1.2 level.
C02	Students will be able to increase their existing grammar knowledge to B1.2 level.
C03	Students will be able to improve their reading and listening comprehension skills.
C04	Students will be able to learn and practice how to write emails, short paragraphs, and notices.
C05	Students will be able to carry out social activities such as giving advice, inviting, accepting or declining invitations, etc.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic facto
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	1	12
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes		
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bbb		
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	P03	P07
C01	1	1
C02	1	1
C03	1	1
C04	1	1
C05	1	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ENG301 Advanced English I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	ENG301	Advanced English I	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

This course aims to improve students' English in terms of academic reading and writing.

Teaching Methods and Techniques:

The course includes Academic Reading, Academic Writing, Academic Vocabulary and Academic Listening activities.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer İknur KARADAĞLI DİRİK

Name of Lecturers:

Lecturer Burçin BAYTUR Lecturer İknur KARADAĞLI DİRİK Lecturer Kübra ERDEMLER Lecturer V. Sümer ÖZSÜER Lecturer Gökçe ŞALTAN Lecturer Nuray GÜLEÇ

Assistants:**Recommended or Required Reading**

Resources	
	Schmitt, D., Schmitt, N., & Mann, D. (2011). Focus on vocabulary I. Pearson Longman: New York, Anderson, N. J. (2013). Active Reading 2. National Geographic. Bailey, S. (2011). Academic writing: A handbook for international students. Routledge: New York

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 100	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Revision of how to write a paragraph (cause and effect, advantage and disadvantage, opinion, comparison)	Academic Vocal	
2	Writing a paragraph about happiness in the class. Use of articles		
3	Reading: "Happiness in Bhutan" HM: Writing the summary of the text		
4	Writing a summary. HM: Reading, "Into the Flow"		
5	Conjunctions Writing a summary of the Chapter 2 "Into the flow"		
6	Writing formal e-mails and letters HM: Reading, "What are you thinking?"		
7	Quiz Reading: "What color is your laugh?"		
8	Midterm Exam		
9	Paraphrasing Synonyms HM: Paraphrasing of one paragraph of the text "What color is your laugh?"		
10	Writing a CV HM: Reading, "Did you have trouble getting up this morning?"		
11	Prepositions Punctuation		
12	How to avoid plagiarism? HM: Vocabulary revision of Units 1 and 2		
13	Reading: "Science Fiction Into Reality"		
14	References and Quotations		
15	Revision for Final Exam		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to learn about academic vocabulary through reading texts.
C02	Students will be able to read and comprehend general reading texts at B2 level.
C03	Students will be able to carry out basic writing tasks (paragraph writing, summary writing, CV writing).
C04	Students will be able to learn about academic writing (plagiarism, paraphrasing, reference writing).
C05	Students will be able to practice academic listening skills.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%40
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	1	12
Assignments	1	1	1
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes		
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bbb		
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	P03	P07
C01	1	1
C02	1	1
C03	1	1
C04	1	1
C05	1	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ENG302 Advanced English II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
8	ENG302	Advanced English II	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The course aims to improve students' English proficiency through reading and writing tasks.

Teaching Methods and Techniques:

The course includes Academic Reading, Academic Writing, Academic Listening and Academic Vocabulary activities.

Prerequisites and co-requisites:

Course Coordinator:

Lecturer İknur KARADAĞLI DİRİK

Name of Lecturers:

Lecturer Kübra ERDEMLecturer Nuray GÜLEÇLecturer Gökçe ŞALTANLecturer Burçin BAYTURLecturer Vahap Sümer ÖZSÜRLecturer İknur KARADAĞLI DİRİK

Assistants:

Recommended or Required Reading

Resources Folsie, K. S., Muchmore-Vokoun, A. & Solomon, E. V. (2020). Great Writing 4. National Geographic Learning. ,Lougheed, L. (2013). IELTS Practice Exams. Barron's Ed Bailey, S. (2011). Academic writing: A handbook for international students. Routledge.

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the courseWhat's an essay?How to write the introduction paragraph of an essay?HM1: Writing an introduct		
2	- HW check-Writing the body and the conclusion paragraphs of an essay- TEDx Talk: "What keeps us happy and healthy?"		
3	- HW check-How to do presentations in English. - Talking about the topics for presentations. - How to form research questi		
4	- HW check- Listening practice- Writing an argument essay (the introduction paragraph)		
5	- HW check- Writing an argument essay (the main body + the conclusion)		
6	- HW check- Listening practice- Writing a narrative essay		
7	- HW check- Reading: Nineteenth Century Paperback Literature-Talking about the progress of the presentations.		
8	Midterm Exam		
9	- Reading: Georges Perec- Creative writing		
10	- Listening practice-Creative writing in the classPresentation Week 1		
11	- HW check- Listening practice IIIPresentation Week 2		
12	- HW check- Looking at different types of essays: For & Against EssayPresentation Week 3		
13	- HW check- Looking at different types of essays: Cause and Effect essay.		
14	Listening comprehension activity		
15	General Revision for Final Exam		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to write essays (cause and effect, for and against, descriptive).
C02	Students will be able to read academic texts in B2 level.
C03	Students will be able to learn new academic vocabulary.
C04	Students will be able to make presentations in English.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic facto
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%40
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	0	0	0
Assignments	4	3	12
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes		
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	P03	P07
C01	1	1
C02	1	1
C03	1	1
C04	1	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ETE091 Introduction to Electrical and Electronics Engineering					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	ETE091	Introduction to Electrical and Electronics Engineering	3	2,5	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to provide students with an overview of the history of Electrical-Electronics Engineering, to enable them to perform operations with complex numbers, and to develop their ability to solve engineering problems using the Matlab programming language. It is targeted that students will acquire the necessary competencies to understand fundamental engineering concepts and effectively apply mathematical analysis and simulation techniques.

Teaching Methods and Techniques:

This course encompasses the history of Electrical-Electronics Engineering, complex numbers, and the Matlab programming language.

Prerequisites and co-requisites:**Course Coordinator:**

Asist Prof.Dr. Mehmet Gökhan HABİBOĞLU

Name of Lecturers:

Asist Prof.Dr. Mehmet Gökhan HABİBOĞLU

Assistants:

Research Assist. Osman Taha KütükResearch Assist. Cihan Katar

Recommended or Required Reading**Resources**

Moeller, K.: Wertschöpfung in Netzen. Vahlen Verlag, 2006.
An electronic script will be provided.

Course Category

Mathematics and Basic Sciences	: 30	Education	:
Engineering	: 50	Science	:
Engineering Design	: 10	Health	:
Social Sciences	:	Field	: 10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Elektrik-Elektronik mühendisliğinin tanımı ve kapsamı		
2	Elektrik mühendisliğinin tarihsel gelişimi		
3	Elektronik mühendisliğinin doğuşu ve gelişimi		
4	Elektrik mühendisliğinin erken dönemi: Telgraf, elektrikli aydınlatma		
5	Matlab yazılımının tanıtımı ve kullanıcı arayüzü		
6	Matlab'ın temel fonksiyonları		
7	Vektörler ve matrisler ile çalışma		
8	Midterm Exam		
9	Kompleks sayıların tanımı ve özellikleri		
10	Elektrik mühendisliğinde kompleks sayıların kullanımı		
11	Matlab ile kompleks sayılarla işlem yapma		
12	Elektrik devrelerinde kompleks sayılarla analiz yapma		
13	Karmaşık sayıların görselleştirilmesi		
14	Kompleks Sayılar: Uygulamalar ve İleri Konular		
15	Matlab ile elektriksel devre analizinde kompleks sayılar kullanımı		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	To have presentation and reporting skills
C02	Fundamentals of Engineering Sciences
C03	Understand current trends in engineering

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	10	1	10
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	1	14
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
C01					3	5	
C02	5	4	5	5			
C03	5	4	5	5		4	3



ETE101 Digital Design					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	ETE101	Digital Design	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The goal of this course is for students to learn the mathematical foundations, analyses, syntheses, and minimizations of numerical systems.

Teaching Methods and Techniques:

The course covers the topics of number systems, Boolean Algebra, minimization methods, MUX, DEMUX, comparators, adders, incrementers, subtractors, multipliers, arithmetic logic unit, memory units, counters, RAM.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Sanam MOGHADDAMNIA

Name of Lecturers:

Asist Prof.Dr. Sanam MOGHADDAMNIA

Assistants:

Recommended or Required Reading

Resources Grundlagen der Technischen Informatik, dirk w. Hoffmann, Hanser, 2007

Course Category

Mathematics and Basic Sciences	:	20	Education	:	
Engineering	:	20	Science	:	
Engineering Design	:		Health	:	
Social Sciences	:		Field	:	60

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Number systems		
2	Bool Algebra 1		
3	Bool Algebra 2		
4	Minimization 1		
5	Minimization 2		
6	MUX, DEMUX, Comparators		
7	Collectors, enhancers, extractors		
8	Midterm Exam		
9	Multipliers, Barrel-Shift, Arithmetic Logic Unit,		
10	Memory units 1		
11	Memory units 2		
12	Register		
13	Counter		
15	Other Memory Units		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	The bases of digital design and computer engineering
C02	Gaining the ability to operate in different types of algebra
C03	Gaining the ability to perform transactions in different number systems
C04	the ability to express logic operators, bool functions and logic formulas in different formations
C05	Minimization in circuit design, KV-Diagram solving
C06	Creation of basic circuits such as MUX, DEMUX, comparator, adder
C07	Design of digital storage units with simple logic circuits
C08	Access to Register and RAM from storage units

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%80

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	7	98
Assignments	4	2	8
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P04	P05	P06	P07
C01	5	5		5		
C02	5	4			5	
C03	4	4				
C04	4	5				
C05	4	5				
C06	4	4	5			
C07	4	5				
C08	5	4				5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

HUK175 Ethic					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	HUK175	Ethic	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

It is aimed to teach the basic philosophical and ethical concepts required for a critical perspective on ethical issues and to illuminate various dimensions of ethical debates.

Teaching Methods and Techniques:

This course includes basic ethical theories and subjects of practical Ethics.

Prerequisites and co-requisites:**Course Coordinator:**

Asist Prof.Dr. Engin Arıkan

Name of Lecturers:

Asist Prof.Dr. Güneş Çap Asist Prof.Dr. Engin Arıkan

Assistants:

Research Assist. Başak Berkün Research Assist. Alize Ergun

Recommended or Required Reading**Resources**

Bennett Christopher, Ahlak Felsefesi Nedir? (Çev: Muhammet Enes Kala), Episteme Yayınları, 2021.,Cevizci Ahmet, Uygulamalı Etik, Say Yayınları, İstanbul 2016.

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-**Course Category**

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	The Presentation of the Course and Introduction		
2	Virtue Ethics		
3	Utilitarian Ethics and Duty-Based Ethics		
4	Theories of Social Contract		
5	The Rule of Law		
6	Social Justice		
7	Individual Freedom		
8	Midterm		
9	Punishment		
10	Gender		
11	Abortion		
12	Euthanasia		
13	Obligation to Obey the Law		
14	Foreigners and Refugees		
15	Environment and Animal Rights		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Learning ethical theories
C02	Have knowledge about the topics of practical ethics and to improve critical thinking on these topics
C03	Learning the debates on the place of ethical theories in legal reasoning

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	1	1	1	1	2	1	2
C02	2	1	1	1	3	1	2
C03	2	1	2	1	4	1	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

HUK176 Woman in Law					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	HUK176	Woman in Law	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to presentation of Key Elements in the Relationship between Law and Gender.

Teaching Methods and Techniques:

In this course sexual identity, sexuality, femininity-masculinity, gender, feminist legal theory, and method will be examined.

Prerequisites and co-requisites:**Course Coordinator:**

Asist Prof.Dr. Güneş Çap

Name of Lecturers:

Asist Prof.Dr. Güneş Çap

Assistants:

Research Assist. Başak BerkünResearch Assist. Alize Ergun

Recommended or Required Reading**Resources**

Donovan Josephine, Feminist Teori:Entelektüel Gelenekler, (Çev: Aksu Bora, Meltem A. Gevrek, Fevziye Sayılan), İletişim Yayınları, İstanbul 2021.,Tong Rosamarie, Femin

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-**Course Category**

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Presentation of the course		
2	Ancient Greece and Women		
3	Social Contractors and Women		
4	Liberal Feminism	Okuma: Wollstonecraft, Mary: Kadın Hal	
5	Cultural Feminism	Okuma: Bakım Kolektifi, Bakım Manifesto	
6	Marxist Feminism	Okuma: Engels, Friedrich, Ailenin, Özel İ	
7	Radical Feminism		
8	Mid-Term Exam (Assignment)		
9	Abortion		
10	Violence Against Women		
11	The Battered Women Syndrome		
12	Discrimination Against Women		
13	Trafficking in Women		
14	The Third Wave of Feminism		
15	Tartışma		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Discussing sexual identity
C02	Gains discussion skills about the concept of sexuality.
C03	Discussing femininity and masculinity
C04	Have knowledge about the conceptualization of gender in law
C05	Learning about feminist legal theory
C06	Understanding the feminist legal methodology

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	1	%20
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	11	2	22
Assignments	1	2	2
Presentation	1	2	2
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	2	1	2	1	3	1	3
C02	2	1	2	1	3	2	3
C03	2	1	2	1	3	1	3
C04	4	2	3	1	3	2	3
C05	3	2	3	1	4	2	3
C06	1	2	3	1	4	2	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

HUK177 Consumer Law					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	HUK177	Consumer Law	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

To provide comprehensive information about consumer protection.

Teaching Methods and Techniques:

The general principles of consumer protection, the seller and the provider, and the responsibility of the manufacturer and the manufacturer shall be ensured for the formation of the student.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Zafer Zeytin

Name of Lecturers:**Assistants:****Recommended or Required Reading****Resources**

Prof. Dr. Murat Aydođdu-Tüketici Hukuku Dersleri 6502 Sayılı Tüketicinin Korunması Hakkında Kanun / Prof. Dr. Aydın Zevkililer, Prof. Dr. Çağlar Özel-Tüketicinin Korunması Hakkında Kanun / Prof. Dr. Murat Aydođdu-Tüketici Hukuku Dersleri
6502 Sayılı Tüketicinin Korunması Hakkında Kanun / Prof. Dr. Aydın Zevkililer, Prof. Dr. Çağlar Özel-Tüketicinin Korunması Hukuku

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Scope of the Law on Consumer Protection		
2	Scope of the Law on Consumer Protection		
3	Consumer Rights In The Event Of Defective Goods Sale		
4	Consumer Rights In The Event Of Defective Goods Sale		
5	Consumer Rights in case of Defective Service Delivery		
6	Consumer Rights in case of Defective Service Delivery		
7	Avoidance of Sales and Unfair Terms		
8	Midterm Exam		
9	Unfair terms		
10	Avoidance of Sales and Unfair Terms		
11	Consumer Rights in Installment Sales		
12	Consumer Rights in Installment Sales		
13	Consumer Rights in Circuit Holiday and Package Tour		
14	Consumer Rights in Circuit Holiday and Package Tour		
15	Consumer Rights in Campaign Sales		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Understands the concept of consumer and the place and development process of consumer law in the law at a minimum level.
C02	Understands the sources of enforcement of consumer law at a good level, learns the application of laws at a good level.
C03	Learns the concepts of consumer concept and consumer protection at a good level.
C04	Learns how to protect the consumer in a good way.
C05	Have a good general knowledge about consumer law.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
---------------------------------------------------------	--	--	--	--	--	--	--

bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	5	5	5	2	5
C02	4	5	3	5	5	5	5
C03	5	2	4	5	5	2	4
C04	5	2	5	1	5	3	4
C05	5	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

HUK184 Law of Medical Malpractice					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	HUK184	Law of Medical Malpractice	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to examine medical law through its interdisciplinary dimensions, enabling students to understand the intersection of medicine and law. It seeks to develop students' theoretical knowledge and analytical thinking skills within the framework of legal regulations, ethical principles, and legal responsibilities encountered in healthcare services. By analyzing contemporary practices in medical law and its relationship with national and international legislation, it intends to enhance students' legal awareness.

Teaching Methods and Techniques:

This course encompasses fundamental concepts of medical law, the legal responsibilities of physicians and other healthcare professionals, patient rights, and legal processes encountered in healthcare services. It also includes medical ethics principles, the functioning of ethics committees, and the connection between health law and recent developments. Covering topics such as medical malpractice, informed consent, confidentiality, and data protection within the framework of national and international legislation, the course seeks to provide students with a comprehensive perspective on health law.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Zafer Zeytin

Name of Lecturers:

Prof. Dr. Zafer Zeytin

Assistants:**Recommended or Required Reading****Resources**

Tip Hukuku 7196 sayılı Kanun ile Yapılan Değişiklikler Eklenmiş Prof. Dr. Hakan Hakeri Şubat 2020 / 19. Baskı /
During this course, extra case studies will be made for the students.

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Patient Rights with its Ethical and Legal Dimension		
2	Patient Rights with its Ethical and Legal Dimension		
3	Legal Bases of Medical Practices		
4	Legal Aspects of Patient-Physician Relationship		
5	Legal Aspects of Patient-Physician Relationship		
6	Responsibilities of Healthcare Professionals in the Context of Private Law		
7	Malpractice		
8	Midterm Exam		
9	Malpractice		
10	Malpractice		
11	Informed consent		
12	Health Worker Occupational Financial Liability Insurance		
13	Health Worker Occupational Financial Liability Insurance		
14	Legal Responsibilities of Private Hospitals		
15	Legal Responsibilities of Private Hospitals		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Students are able to comprehend medical law at an adequate level with its dimensions in different legal disciplines.
C02	Students have sufficient knowledge about the concepts of medical ethics and law.
C03	Students have sufficient knowledge about the legal responsibilities of doctors and other health professionals.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
bbb							

	P01	P02	P03	P04	P05	P06	P07
C01	3	5	4	5	5	5	2
C02	5	4	4	1	5	5	5
C03	5	5	5	5	5	5	5



Turkish-German University

Faculty of Engineering
Department of Civil Engineering (German)

HUK290 Social Media Literacy					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	HUK290	Social Media Literacy	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The main objective of this course is to provide students an understanding of the functioning and legal grounds of social media platforms; to gain awareness of the legal consequences of digital content production and especially the crimes that can be committed through social media.

Teaching Methods and Techniques:

Within the scope of the course, the definition, development and functioning of social media platforms, the legal responsibility of social network managers, the production of content through these platforms and the sharing of other people's content, the crimes committed due to these shares and the measures against these contents will be discussed.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Ali Kemal Yıldız

Name of Lecturers:

Asist. Prof. Dr. Bilal Osmanoğlu

Assistants:

Research Assist. Aslı Ekin Yılmaz Research Assist. Rüyeyda Yavuz Research Assist. Dr. Kazım Furkan Ağkuş Research Assist. Can Eralp Elibo Research Assist. Sabah Mine Cangil Akmansayar

Recommended or Required Reading**Resources**

Law No. 5187, Law No. 5651, Turkish Penal Code, Personal Data Protection Law

- 5651 Sayılı İnternet Yayınları Hakkında Kanun, KVKK, TMK ve TBK Bağlamında Sosyal Medya Hukuku - Doç. Dr. Sinan Sami Akkurt

- Dijital Ceza Muhakemesi Hukuku - Prof. Dr. Bahri Öztürk, (Ed.) Prof. Dr. Durmuş Tezcan, (Ed.) Prof. Dr. Mustafa Ruhan Erdem (Ed.)

- İnternet Hukuku – Dr. Mehmet Bedii Kaya

Course Category

Mathematics and Basic Sciences :

Engineering :

Engineering Design :

Social Sciences :

: 100

Education :

Science :

Health :

Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Explanation of the Course Structure, Introduction to Social Media Literacy: The Concept of Social Media		
2	The Concept of Rights, Hierarchy of Norms, Fundamental Rights and Freedoms		
3	Internet Subjects: Content Provider, Hosting Provider, Access Provider, Mass Use Provider		
4	The Legal Nature of Social Media Platforms		
5	Freedom of Speech		
6	Freedom of the Press		
7	The Regime of Restrictions on Freedom of Speech and Freedom of the Press		
8	Social Media Monitoring I – Blocking Access in the Context of Crimes Regulated under Article 8 of Law No. 5651		
9	Social Media Monitoring II - Blocking Access Against Violations of the Right to Privacy		
10	Procedure for Blocking Access		
11	Assignment Presentation - I		
12	Assignment Presentation - II		
13	Assignment Presentation - III		
14	Assignment Presentation - IV		
15	Social Media Literacy - Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students acquire the ability to evaluate social media content within the legal framework and learn the responsibility arising from digital content production.
C02	Have knowledge about the crimes that can be committed through the use of social media platforms.
C03	Gain basic knowledge about the measures within the scope of Law No. 5651.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%40
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	2	28
Assignments	1	2	2
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
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	P01	P02	P03	P04	P05	P06	P07
All	5	5	2	4	2	5	2
C01	5	5	2	4	2	5	2
C02	4	4	4	5	5	4	4
C03	5	4	4	5	4	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

Intellectual Property Law					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	HUK477	Intellectual Property Law	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course objective is to have a general knowledge about authors', trademark holders', patent right holders', industrial designers', utility model owners' protection in the light of international agreements.

Teaching Methods and Techniques:

Protection of intellectual rights and conventions regarding intellectual rights, especially Bern Convention, WIPO, WTO, TRIPPs conventions, types of intellectual rights and protections.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. İrfan Akın

Name of Lecturers:

Prof. Dr. İrfan Akın

Assistants:

Research Assist. Gülnihal Dündar

Recommended or Required Reading**Resources**Prof. Dr. Henning ROSENAU, Materialien zur Vorlesung Ausgewählte Delikte aus dem Besonderen Teil des Strafrechts (İleri Alman Hukuku) im Wintersemester 2016/2017
Tekinalp Ünal, Fikri Mülkiyet Hukuku, İstanbul, 2012; Suluk Cahit/Karasu Rauf/Nal Temel, Fikri Mülkiyet Hukuku, Seçkin, Ankara 2023.**Course Category**

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Notion of work, author, author's rights		
2	Agreements related to the work		
3	Infringements, legal and criminal actions		
4	Trademark, types, registration and registration impediments		
5	Protection scope of trademarks		
6	Patent law, Notion of invention, rights related to patent		
7	Rescission of the patent and expiration of the patent rights, case of infringement, legal and criminal actions		
8	Midterm Exam		
9	Conditions of the protection, right of design holder, expiration of the design, infringements, legal and criminal actions		
10	Utility model law, notion of utility model		
11	Protection and invalidity		
12	Topology of networks, ownership of right, expiration and invalidity		
13	Plant breeders' right holder		
14	Protection of the biotechnological inventions		
15	Utility Model Law		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	The Students will examine legal and criminal actions in case of infringement of author's rights
C02	The Students will examine literary and artistic work agreements
C03	The Students will examine legal and criminal actions in case of infringement of author's rights
C04	The Students will examine the legal characteristic in case of competitive edge in patent rights

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P07	
C01	5		5	5	5	
C02	5		5	5	5	
C03	5		5	5	5	
C04	5	4	5	5	5	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

INF101 Introduction to Computer Science and Programming					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	INF101	Introduction to Computer Science and Programming	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The students who successfully complete this course are expected to be able to define the basic concepts and methods of computer science, to have knowledge about programming and basic data structures, to be able to algorithmically transform problems into programs and to be able to use C and C++ programming languages.

Teaching Methods and Techniques:

In this course, students will learn data representation in computers, coding theory, algorithm, program concepts, data types, variables, operators, logical expressions, flow control, loops, functions, validity fields, pointers, enumerations, structures, fields, microprocessor programming with Arduino (optional for interested students).

Prerequisites and co-requisites:

Course Coordinator:

Dr.-Ing Eike Schlahn

Name of Lecturers:

Dr.-Ing Eike Schlahn

Assistants:

Research Assist. Halit Canap Demir

Recommended or Required Reading

Resources	
	Ernst, Jochen Schmidt Hartmut, and Gerd Beneken. Grundkurs Informatik. Springer Fachmedien Wiesbaden, 2016, Erlenkötter, Helmut. C, Programmieren von Anfang an.
	Ernst, Jochen Schmidt Hartmut, and Gerd Beneken. Grundkurs Informatik. Springer Fachmedien Wiesbaden, 2016
	Erlenkötter, Helmut. C, Programmieren von Anfang an. Rowohlt-Taschenbuch-Verlag, 1999

Course Category

Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 20	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	: 60

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to computer science, history, data display in computers	-	-
2	Number systems and binary arithmetic	-	-
3	Programming in C (basic terms: algorithm, flow chart)	-	-
4	Programming in C (data types, variables)	-	-
5	Programming in C (mathematical and logical operators)	-	-
6	Programming in C (if statements, flow control)	-	-
7	Programming in C (goto loop construction)	-	-
8	Midterm Exam	-	-
9	Programming in C (loops)	-	-
10	Coding and encryption	-	-
11	Programming in C (arrays and structures)	-	-
12	Programming in C (functions and scope of variables)	-	-
13	Programming in C (recursive functions)	-	-
14	Programming in C (functions, call-by-value, call-by-reference)	-	-
15	Programming in C (pointer)	-	-
16	Final Exam	-	-

Course Learning Outcomes

No	Learning Outcomes
C01	Know how different types of data are displayed in computers.
C02	Knowledge of number arithmetic in computers.
C03	Knowledge of fault-tolerant, compressing and encrypting coding methods
C04	Independent development of algorithms in pseudo code and implementation in the programming language C.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and social contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	9	108
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	14	2	28
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						
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bbb						
	P01	P02	P05	P06	P07	
C01	5	5	4	3	1	
C02	5	5	4	3	1	
C03	5	5	4	3	1	
C04	5	5	4	3	1	



INF102 Object Oriented Programming					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	INF102	Object Oriented Programming	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to provide students with basic knowledge and skills in object-oriented programming and basic data structures. Students will understand and apply basic structuring and processing mechanisms such as object orientation, modularization and recursion.

Teaching Methods and Techniques:

This course introduces object-oriented programming using Java as an object-oriented programming language, object-oriented programming concepts, representation in UML, general programming, input/output operations, exception handling, and data structures (including lists, stacks, queues, trees). In order to reinforce these topics, students complete the learning process by independently solving, programming, and submitting predetermined, related programming assignments.

Prerequisites and co-requisites:

Course Coordinator:

Dr.-Ing Christian Braune

Name of Lecturers:

Dr.-Ing Christian Braune

Assistants:

Recommended or Required Reading

Resources	
	Concepts of Programming Languages, Robert W. Sebesta, Pearson Education, 2012., Ullmann C. Java ist auch eine Insel. Galileo Computing, 2014., Grundkurs Programmieren
	-
	-
	-

Course Category

Mathematics and Basic Sciences	:	40	Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:		Field	:	60

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to object-oriented programming (explanation of the advantages in terms of quality and reusability)	-	-
2	Introduction to object-oriented data modeling, class diagrams in UML	-	-
3	Introduction to object-oriented data modeling, class diagrams in UML	-	-
4	Creation of classes and objects, constructor methods	-	-
5	Inheritance and polymorphism	-	-
6	Method overloading	-	-
7	Type queries and conversions	-	-
8	Midterm exam	-	-
9	Genericity	-	-
10	Abstract classes and interfaces	-	-
11	Interface programming	-	-
12	Input / Output operations	-	-
13	Exception handling	-	-
14	Introduction to GUI programming with Java (Java Swing, JavaFX)	-	-
15	General review	-	-
16	Final Exam	-	-

Course Learning Outcomes

No	Learning Outcomes	
C01	Ability to analyze problems, taking into account the required and generated data.	
C02	Ability to perform object-oriented modeling with UML elements.	
C03	Knowledge of principles of object-oriented programming.	
C04	Ability to perform object-oriented programming in Java.	

Program Learning Outcomes

No	Learning Outcome	
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.	
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.	
P03	The ability to communicate effectively with diverse audiences.	
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.	
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.	
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.	
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.	

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%25
Quizzes	0	%0
Assignment	12	%25
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	4	48
Assignments	12	5	60
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	14	2	28
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							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	5	5	5	3	1
C02	5	5	5	5	5	3	1
C03	5	5	5	5	5	3	1
C04	5	5	5	5	5	3	1



ING404 Entrepreneurship					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
8	ING404	Entrepreneurship	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The engineering profession is a serious is transformed. To instill the spirit of entrepreneurship with examples and to inform about the legislation.

Teaching Methods and Techniques:

Examples from the world, examples from Turkey, legislation

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Dr. Pinar Bilge

Assistants:

Recommended or Required Reading

Resources	Moeller, K.: Wertschöpfung in Netzen. Vahlen Verlag, 2006. Seliger, G.; Weinert, N.; Zettl, M.: Module Configurator for the Development of Products for Ease of Remanuf Moeller, K.: Wertschöpfung in Netzen. Vahlen Verlag, 2006. Seliger, G.; Weinert, N.; Zettl, M.: Module Configurator for the Development of Products for Ease of Remanufacturing. In: Proceedings of 14th CIRP International Conference on Life Cycle Engineering, Tokyo, Japan, June 11-13, 2007. S. 47-52. Sauer, G.: Handbuch der Fertigungstechnik – EFBetrieb. Carl Hanser
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Course Category

Mathematics and Basic Sciences : 30	Education :
Engineering : 50	Science :
Engineering Design : 10	Health :
Social Sciences :	Field : 10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Requirements for university research		
2	Requirements for university		
3	Sustainable industrial value-added production		
4	Sustainable industrial value-added production		
5	Requirements for aerospace industry		
6	Requirements for aerospace industry		
7	Case studies from the fields of production logistics, automation and product-service systems		
8	Case studies from the fields of production logistics, automation and product-service systems		
9	Requirements for the automotive industry		
10	Requirements for the automotive industry		
11	Disputes between technology and management in manufacturing technologies		
13	Continuous improvement projects		
14	Continuous improvement projects		

Course Learning Outcomes

No	Learning Outcomes
C01	To have presentation and reporting skills
C02	Fundamentals of Engineering Sciences
C03	Understand current trends in engineering

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%0
Quizzes	0	%40
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

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

Contribution of Learning Outcomes to Programme Outcomes						
---------------------------------------------------------	--	--	--	--	--	--

bbb						
	P01	P02	P03	P04	P05	P06
All	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ING406 Law for Engineers					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	ING406	Law for Engineers	4	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

In the module, students will learn about the industry, the industry-specific law as well as the economic system.

Teaching Methods and Techniques:

- Construction as part of the economic system - Structures of the construction industry - Tender, rewarding and billing - Construction Management - Construction planning - Construction management - Construction Contract Law

Prerequisites and co-requisites:

Course Coordinator:

Undefined Tanimsiz

Name of Lecturers:

Assistants:

Recommended or Required Reading

Resources Grundlagen der Baubetriebslehre Bd. 1-3; Fritz Berner, Bernd Kochendörfer, Rainer Schach, Teubner

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:	50	Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	50	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		

Course Learning Outcomes

No	Learning Outcomes
C01	In the module, students will learn about the industry, market players as well as the economic system about the construction industry.
C02	They will also learn technical, economic and legal information about processes and processes in construction companies from the acquisition of construction contracts to settlement.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	42	2	84
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	7	7
Practice	28	2	56
Laboratory	0	0	0
Project	0	0	0
Final examination	1	21	21
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
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	P01	P02	P03	P04	P05	P06
C01	3	3	1	3	3	3
C02	3	3	1	3	3	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ISG001 Occupational Health and Safety I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
7	ISG001	Occupational Health and Safety I	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

Basic theoretical knowledge in the field of occupational health and safety, along with the fundamental obligations outlined in the legislation, is taught. In particular, the duties, authorities, and responsibilities of the Naval Architect in the position of employer representative are comprehensively covered. The causes, consequences, and prevention of occupational accidents and diseases occurring in the shipbuilding industry are addressed in detail.

Teaching Methods and Techniques:

The conceptual framework of occupational health and safety (OHS), national and international standards, fundamental information on the causes, consequences, and prevention of occupational accidents and diseases are provided. Key regulations in our legislation on OHS, case studies, and Supreme Court decisions are analyzed. Additionally, occupational accidents in the shipbuilding industry are examined in detail, and necessary preventive measures are assessed.

Prerequisites and co-requisites:**Course Coordinator:**

Mühendis Joachim Kuntze

Name of Lecturers:

Mühendis Joachim Kuntze

Assistants:**Recommended or Required Reading****Resources**

Yılmaz, F., Occupational Health and Safety Textbook" Yelekçi, M., "Worker Health and Safety" Esin, A., "Occupational Health and Safety" Çelebi, U.B., "Occupational Health and Safety Textbook"
Yılmaz, F., Occupational Health and Safety Textbook"
Yelekçi, M., "Worker Health and Safety"
Esin, A., "Occupational Health and Safety"
Çelebi, U.B., "Occupational Health and Safety in Shipyard Textbook"

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences :	Field : 100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Theoretical framework, definitions and scope of occupational health and safety. Cost of occupational accidents and illnesses		
2	Economical dimensions of occupational accidents and illnesses, importance of OHS for he enterprises		
3	Analysis of the risky fields-sectors of Turkey in OHS		
4	Causes of occupational accidents and illnesses: physical, ergonomic, chemical, biological, individual and psycho-social risks		
5	Components of preventive OHS approach: Risk Assessment and Management, Ergonomic Precautions, Organizing the OHS		
6	Components of preventive OHS approach: OHSAS 18001 Management System, Training, Regular Sanitary Control ve Occu		
7	National and international standartds and conventions in OHS. The legal arrangements concerned with OHS in Turkey: OH		
8	Midterm Exam		
9	The definitions, scope and juridical results of employer, employee, employer agent, workplace, subcontractor, occupational		
10	The regulations and guidelines on OHS: Occupational Health and Safety Regulation.		
11	The Regulation on Heavy and Hazardous Work, The Regulation About OHS Training, The Regulation on Workplace Health		
12	Responsibilities of employer and employer agent (engineer-OHS expert) about occupational accidents and illnesses; case st		
13	Analysis of the statistics on occupational accidents and illnesses, the most frequent accidents and illnesses and precautions		
14	Case studies and court decisions of Court of Appeals.		
15	Case studies and court decisions of Court of Appeals.		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to define the basic concepts of occupational health and safety, interpret national and international regulations, and analyze the causes of occupational accidents and diseases.
C02	Students will be able to analyze the causes of occupational accidents and diseases, and identify the necessary preventive measures to avoid such incidents.
C03	Students will understand risk assessment, preventive measures, and safety culture, and will adopt this culture, gaining the ability to apply it in the field of occupational health and safety.
C04	Students will be able to analyze the causes of occupational accidents in the shipbuilding industry and identify the necessary measures to prevent such accidents.
C05	Students will understand the engineer's responsibilities in terms of occupational safety and will acquire the knowledge and skills to effectively implement these responsibilities.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
All	5	5	5	5	5	5	5
C01	5	5	5	5	5	5	5
C02	5	5	5	5	5	5	5
C03	5	5	5	5	5	5	5
C04	5	5	5	5	5	5	5
C05	5	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ISG002 Occupational Health and Safety II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
8	ISG002	Occupational Health and Safety II	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

Basic theoretical knowledge in the field of occupational health and safety, along with the fundamental obligations outlined in the legislation, is taught. In particular, the duties, authorities, and responsibilities of the Naval Architect in the position of employer representative are comprehensively covered. The causes, consequences, and prevention of occupational accidents and diseases occurring in the shipbuilding industry are addressed in detail.

Teaching Methods and Techniques:

The conceptual framework of occupational health and safety (OHS), national and international standards, fundamental information on the causes, consequences, and prevention of occupational accidents and diseases are provided. Key regulations in our legislation on OHS, case studies, and Supreme Court decisions are analyzed. Additionally, occupational accidents in the shipbuilding industry are examined in detail, and necessary preventive measures are assessed.

Prerequisites and co-requisites:**Course Coordinator:**

Mühendis Joachim Kuntze

Name of Lecturers:

Mühendis Joachim Kuntze

Assistants:**Recommended or Required Reading****Resources**

Yılmaz, F., Occupational Health and Safety Textbook" Yelekçi, M., "Worker Health and Safety" Esin, A., "Occupational Health and Safety" Çelebi, U.B., "Occupational Health and Safety Textbook"
Yılmaz, F., Occupational Health and Safety Textbook"
Yelekçi, M., "Worker Health and Safety"
Esin, A., "Occupational Health and Safety"
Çelebi, U.B., "Occupational Health and Safety in Shipyard Textbook"

Course Category

Mathematics and Basic Sciences	:	Education	:	
Engineering	:	Science	:	
Engineering Design	:	Health	:	
Social Sciences	:	Field	:	100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Theoretical framework, definitions and scope of occupational health and safety. Cost of occupational accidents and illnesses		
2	Economical dimensions of occupational accidents and illnesses, importance of OHS for he enterprises		
3	Analysis of the risky fields-sectors of Turkey in OHS		
4	Causes of occupational accidents and illnesses: physical, ergonomic, chemical, biological, individual and psycho-social risks		
5	Components of preventive OHS approach: Risk Assessment and Management, Ergonomic Precautions, Organizing the OHS		
6	Components of preventive OHS approach: OHSAS 18001 Management System, Training, Regular Sanitary Control ve Occu		
7	National and international standartds and conventions in OHS. The legal arrangements concerned with OHS in Turkey: OH		
8	Midterm Exam		
9	The definitions, scope and juridical results of employer, employee, employer agent, workplace, subcontractor, occupational		
10	The regulations and guidelines on OHS: Occupational Health and Safety Regulation.		
11	The Regulation on Heavy and Hazardous Work, The Regulation About OHS Training, The Regulation on Workplace Health		
12	Responsibilities of employer and employer agent (engineer-OHS expert) about occupational accidents and illnesses; case st		
13	Analysis of the statistics on occupational accidents and illnesses, the most frequent accidents and illnesses and precautions		
14	Case studies and court decisions of Court of Appeals.		
15	Case studies and court decisions of Court of Appeals.		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to define the basic concepts of occupational health and safety, interpret national and international regulations, and analyze the causes of occupational accidents and diseases.
C02	Students will be able to analyze the causes of occupational accidents and diseases, and identify the necessary preventive measures to avoid such incidents.
C03	Students will understand risk assessment, preventive measures, and safety culture, and will adopt this culture, gaining the ability to apply it in the field of occupational health and safety.
C04	Students will be able to analyze the causes of occupational accidents in the shipbuilding industry and identify the necessary measures to prevent such accidents.
C05	Students will understand the engineer's responsibilities in terms of occupational safety and will acquire the knowledge and skills to effectively implement these responsibilities.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	5	5	5	5	5	5	5
C01	5	5	5	5	5	5	5
C02	5	5	5	5	5	5	5
C03	5	5	5	5	5	5	5
C04	5	5	5	5	5	5	5
C05	5	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

KI001 History of Cultural Heritage					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	KI001	History of Cultural Heritage	3	3	5

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course is intended to enable students to distinguish between World Cultural Heritage sites (tangible, intangible, and world documentary heritage), categorize them within their historical contexts, and gain insights into management (sustainability) theories and methods. Furthermore, it is aimed that students apply and discuss these theories and methods in the context of World Heritage sites in Turkey using relevant examples.

Teaching Methods and Techniques:

This course encompasses the introduction of cultural heritage theories as defined by UNESCO. Selected World Heritage Sites are examined based on research-based learning methods in Istanbul and assessed in terms of management issues. Furthermore, strategies for the sustainable management and preservation of these sites are addressed and discussed.

Prerequisites and co-requisites:**Course Coordinator:**

Asist. Prof. Dr. Detlev Quintern

Name of Lecturers:

Asist. Prof. Dr. Detlev Quintern

Assistants:

Research Assist. Ayşenur Özkan Işık

Recommended or Required Reading**Resources**

Tauschek, Markus (2013). Kulturerbe. Eine Einführung. Berlin: Dietrich Reimer. <https://whc.unesco.org/en/managing-cultural-world-heritage/> Weltkultur- und Naturerbe in J. Assmann, Das kollektive Gedächtnis. München: C.H. Beck,

Course Category

Mathematics and Basic Sciences :		Education :	
Engineering :		Science :	
Engineering Design :		Health :	
Social Sciences :	30	Field :	70

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Theories and methods of cultural heritage.		
2	Cultural heritage and institutional history (UNESCO).		
3	Classification and differentiation processes of cultural heritage(Material and Immaterial Culture, Nature, Documents).		
4	Nomination processes, conditions and status for becoming a World Heritage Site		
5	Material world cultural heritage in Turkey.		
6	World Intangible Heritage and World Document Heritage in Turkey.		
7	Case study world culture heritage sites in Turkey: Göbekli Tepe.		
8	Midterm Exam		
9	Case Study of World Intangible Heritage		
10	World culture Heritage in danger: Protection of Cultural Assets		
11	Cultural and natural heritage, biodiversity: preservation, care and development.		
12	Cultural heritage communication channels.		
13	Cultural heritage in the context of the culture of remembrance.		
14	Excursion to selected world cultural heritage sites in Turkey.		
15	Follow-up on maintenance, protection and management problems (Education, Popular History,Cultural Tourism).		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Has knowledge about the theories and principles of cultural heritage.
C02	It is aimed to raise awareness on the problems of classification, categorization and evaluation of cultural heritage in international cultural organizations (UNESCO).
C03	Have an awareness of debates on the role of cultural heritage in the context of remembrance, memory and identity.
C04	It is aimed to recognize cultural and social science research (approaches, potentials) of tangible and intangible cultural heritage.
C05	Gain insight into cultural heritage management practices and issues.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	2	28
Assignments	12	2	24
Presentation	14	3	42
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
C01	4		3		4	3	3
C02		4			4	5	
C03	3				5	3	
C04	4		3	3	4	3	3
C05	3	3	3	3	4	4	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

KI009 Museums as Archives of Cultural and Art History					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	KI009	Museums as Archives of Cultural and Art History	3	3	5

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

Students learn to understand the museum, a cultural institution. Activities to go to exemplary museums and collections important for cultural memory in Istanbul are organized.

Teaching Methods and Techniques:

After a basic education on museology, selected museums and collections in Istanbul are visited in the context of learning.

Prerequisites and co-requisites:

Course Coordinator:

Asist. Prof. Dr. Detlev Quintern

Name of Lecturers:

Asist. Prof. Dr. Detlev Quintern

Assistants:

Recommended or Required Reading

Resources Mairesse, F. (2023). Dictionary of museology. Routledge., Thiemeyer, Thomas (2018). Geschichte im Museum. Theorie – Praxis – Berufsfelder. Tübingen: A. Franke Verlag

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 30	Field : 70

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Theories and methods of museum studies		
2	Historical development of the museum as an institution		
3	Tasks of a museum (collecting, preserving, researching, conveying and presenting)		
4	Collecting in different historical contexts		
5	Differences and similarities in the development of museums in Turkey and Germany		
6	International Museum Association (ICOM) and German Museum Association		
7	Debates about the future of the museum		
8	Midterm		
9	Examples in Germany: Humboldtforum, Cologne, Bremen		
10	The advent and development of museums in Turkey		
11	Museums in Turkey: Case Studies		
12	Preparation of a museum excursion		
13	Research-based cultural studies in the museum		
14	Mediation dimensions: museum and public history		
15	Potentials of cultural studies research in museums		
16	Final		

Course Learning Outcomes

No	Learning Outcomes
C01	Acquire knowledge about the development of museums.
C02	Acquire knowledge of the historical development of the museum as an institution.
C03	Basic Understanding of the Cultural and Scientific Institution Museum (Collecting, Preserving, Researching, Conveying and Presenting)
C04	Understand the importance of museum collections and objects. Discuss problems of exhibiting cultural and historical artefacts.
C05	Acquire knowledge of the relationship between museum and exhibition concepts and the corresponding design.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	6	84
Assignments	1	10	10
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
C01	4	2	4	2	3	2	3
C02	3	2	3	2	4	2	2
C03	4	2	4	3	5	3	4
C04	3	1	3	2	5	3	5
C05	2	1	2	2	3	3	3



KI019 Space and Culture					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	KI019	Space and Culture	3	3	5

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The course introduces a specific perspective on culture: the spatial. It aims to teach students to analyse political and cultural phenomena as linked to a certain space and location. They will broaden their perspective by learning to look at culture and space as influenced by geopolitical and geostrategic factors. They will be able to critically analyse local, regional, national and international issues as linked to a certain place and location.

Teaching Methods and Techniques:

We will start with different theories and concepts of "the spatial" in politics. Students will learn about the historical dimensions of spatial analysis in the history of ideas and transformations of perceptions of space as a result of technological innovations. We will use space as a territorial but also as a metaphorical unit. Students will learn to understand space in the sense of territorial location (in the space of a city or a nation or a region) but also as a mental and metaphorical unit in the sense of creative space, symbolic or memory space. Students will finally learn about the relation between power/domination and space, which materializes in eurocentric perspectives which operate based on the code of center/periphery.

Prerequisites and co-requisites:

Course Coordinator:

Dr. Robin Kurilla

Name of Lecturers:

Dr. Robin Kurilla

Assistants:

Research Assist. Melike Belkis Örs

Recommended or Required Reading

Resources

Münkler, Herfried (2015): Raum im 21. Jahrhundert, Roth, H. J. (2020). Kultur, Raum und Zeit: Ansätze zu einer vergleichenden Kulturtheorie. Nomos Verlag.
Münkler, Herfried (2015): Raum im 21. Jahrhundert

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 100	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Concepts of Space and Culture		
2	Space and geopolitics. Concepts of space in the history of ideas		
3	Space, geopolitics and power in perceptions of the global order		
4	Social spaces and culture. Cities, creative spaces and their rural "periphery"		
5	Metaphors of space: memory spaces and memorial culture		
6	Space, culture, and Migration. Geopolitical dimensions of migration		
7	Exam Preparation		
8	Midterm		
9	Midterm Evaluation		
10	Challenging culture: universalism and the validity of norms		
11	Challenging space: perspectives and multiperspectivity in European Art		
12	Cultural pluralism and space		
13	Center and periphery in the European collective imagination		
14	Europe as a cultural construction of space		
15	Eurocentrism: space, culture and power		
16	Final		

Course Learning Outcomes

No Learning Outcomes

- C01 Students learn to critically evaluate how perceptions of space have changed in academic discourses. They will also learn to assess how perceptions of space become instruments of political ideologi
- C02 Students will learn to identify space as a category that influences urban und rural life. They will see how global issues and local issues are carved up in spaces and segments that have an impact on
- C03 Students will learn that especially the categories of center and periphery are powerful semantic instruments of domination. They will learn this in the context of eurocentric metaphors and claims of

Program Learning Outcomes

No Learning Outcome

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	5	70
Assignments	3	5	15
Presentation	1	9	9
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	4		3	3	4	3	3
C02	3		2	3	4	3	2
C03	3	4	3		5	4	



KKW321 History of Philosophy					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	KKW321	History of Philosophy	3	3	4

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course, which is an introduction to philosophy, aims to give an overview of the history of philosophy.

Teaching Methods and Techniques:

This course encompasses an overview of the significant periods and representatives of the history of philosophy from Antiquity to the Enlightenment. In accordance with the definition of philosophy as the love of wisdom, it includes a broad scope of inquiry into knowledge and addresses fundamental questions and problems of philosophical disciplines. Different perspectives in philosophy are examined and critically analyzed through concepts such as existence, knowledge, truth, and morality.

Prerequisites and co-requisites:**Course Coordinator:**

Asist. Prof. Dr. Muhammet Sait Duran

Name of Lecturers:

Asist. Prof. Dr. Muhammet Sait Duran

Assistants:**Recommended or Required Reading****Resources**

Cevizci, Ahmet (2016): Felsefenin Kısa Tarihi, İstanbul: Say Yayınları. Gökberk, Macit (2013): Felsefe Tarihi, İstanbul: Remzi Kitabevi. Höffe, Otfried (2018): Kleine Gesch.

Course Category

Mathematics and Basic Sciences	:		:	
Engineering	:		:	
Engineering Design	:		:	
Social Sciences	:	100	:	
			:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	What is philosophy?		
2	Introduction to the history of philosophy and the beginning of philosophy		
3	Pre-Socrates philosophers		
4	Sophists and Socrates		
5	Plato		
6	Aristotle		
7	Hellenistic Philosophy I: Epicure, Skepticism, Stoa		
8	Midterm Exam		
9	Hellenistic Philosophy II: Neo-platonism and Plotin, Saint Augustin		
10	Islamic Philosophy		
11	Medieval Christian Philosophy		
12	Renaissance		
13	17th Century Philosophy I: Descartes, Hobbes		
14	17th Century Philosophy II: Spinoza, Leibniz		
15	Enlightenment		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

- C01 The course enables students to acquire fundamental content-based and methodological knowledge of philosophy.
- C02 Students develop a conceptual understanding of the fundamental principles and conditions of human action and knowledge.
- C03 Within the inclusive and diverse perspectives of philosophy, students acquire systematic and creative thinking skills.

Program Learning Outcomes**No Learning Outcome**

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%20
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	10	6	60
Assignments	3	2	6
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			112
ECTS Credit of the Course			4

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
	P01	P02	P03	P04	P05
C01	4	3	3	4	4
C02	4	3	3	4	4
C03	4	3	3	4	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

MAB091 Introduction to Mechanical Engineering					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	MAB091	Introduction to Mechanical Engineering	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The course aims to introduce students to the fundamental areas of mechanical engineering, help them understand the ethical responsibilities of the profession, and enable them to guide their academic and professional development by understanding the structure of engineering education.

Teaching Methods and Techniques:

This course covers the main sub-disciplines of mechanical engineering (thermodynamics, fluid mechanics, materials, dynamics, manufacturing, etc.), engineering design, ethics in engineering, career planning, the structure of engineering education, and academic orientation.

Prerequisites and co-requisites:**Course Coordinator:**

Asist. Prof. Dr. Mehmet Gökhan Gökçen

Name of Lecturers:

Asist. Prof. Dr. Mehmet Gökhan Gökçen

Assistants:**Recommended or Required Reading****Resources**

Moeller, K.: Wertschöpfung in Netzen. Vahlen Verlag, 2006. Seliger, G.; Weinert, N.; Zettl, M.: Module Configurator for the Development of Products for Ease of Remanufacturing. Cengage Learning, 2012. Wickert, J. A., & Lewis, K. L. (2012). An introduction to mechanical engineering (3rd ed.). Cengage Learning.

Course Category

Mathematics and Basic Sciences	: 30	Education	:
Engineering	: 50	Science	:
Engineering Design	: 10	Health	:
Social Sciences	:	Field	: 10

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to engineering and university life		
2	Structure of engineering education		
3	History of mechanical engineering		
4	Ethics in engineering		
5	Introduction to thermodynamics and energy systems		
6	Fluid mechanics and its applications		
7	Overview of materials science		
8	Midterm Exam		
9	Dynamics, mechanical systems and robotics		
10	Manufacturing methods and production technology		
11	Computer-aided design and analysis		
13	Strategies for academic success		
14	Teamwork and communication in engineering		
15	General Revision		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can identify the main fields of mechanical engineering.
C02	Can explain the structure of engineering education and the role of courses.
C03	Can recognize the ethical responsibilities of the engineering profession.
C04	Akademik ve mesleki hedefler belirler.
C05	Takım çalışması, iletişim ve kariyer planlama becerileri kazanır.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes					
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bbb					
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	P01	P03	P06	P07
C01	3	2	5	
C02	3	2	5	3
C03	3	2	5	
C04	3	2	5	4
C05	3	2	5	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

MAB207 Material Technology I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	MAB207	Material Technology I	5	4	6

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
The aim of the course is to comprehensively provide the fundamental principles of materials science and to develop critical skills for material selection and analysis in engineering applications

Teaching Methods and Techniques:
This course is designed to cover the fundamental topics of materials science. The content begins with the atomic and molecular structures of materials, then examines in detail the material groups commonly used in engineering (metals, polymers, ceramics, and composites). Crystal structures, phase diagrams, and microstructure topics are analyzed to understand the structure-property relationships of materials. Additionally, the mechanical, electrical, magnetic, and optical properties of materials are addressed, with particular emphasis on the mechanical testing methods used to determine these properties. Finally, the course covers various types of material failures such as fracture, fatigue, creep, and corrosion, along with their effects on engineering applications.

Prerequisites and co-requisites:

Course Coordinator:
Asist. Prof. Dr. Mehmet İpekoğlu

Name of Lecturers:
Asist. Prof. Dr. Mehmet İpekoğlu

Assistants:

Recommended or Required Reading	
Resources	<ul style="list-style-type: none"> • Bargel, H.-J., G. Schulze, "Werkstoffkunde", Springer, 1999. • Bergmann, W.: "Werkstofftechnik Teil I: Grundlagen", 5. Auflage, Carl Hanser, 2003. • Will be disseminated to the students in digital form - - -

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

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	History of materials science, engineering materials, classification of materials		
2	Structure of atoms, atomic bondings, bondings in different materials		
3	Crystal structure, unit cells, crystallographic directions and planes, Miller indices		
4	Irregularities in crystal structure, 0-1-2 dimensional crystal defects		
5	Solid state diffusion		
6	Phase diagrams, microstructure		
7	Mechanical properties, elasticity, plasticity, viscoelasticity, tensile test		
8	Midterm		
9	Hardening methods, Jominy end-quench test		
10	Failure of materials under various working conditions, fracture, fatigue, creep, oxidation and corrosion		
11	Electrical properties, corrosion prevention methods		
12	Magnetic and optic properties		
13	Polymers		
14	Ceramics and composites		
15	Mechanical properties, hardness-strength relation, ductility, brittleness, hardness measuring techniques		
16	Final Exam		

Course Learning Outcomes	
No	Learning Outcomes
C01	Material science knowledge
C02	View of the fundamentals and diverse fields of activity of materials science
C03	Structure-property relationships of materials
C04	Know and differentiate materials in engineering
C05	Learn material properties as the basis of material selection
C06	Learn mechanical test methods as test methods

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, environmental, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%80

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	6	84
Assignments	1	4	4
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	28
Laboratory	0	0	0
Project	1	6	6
Final examination	1	2	2
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
C01	5	5	5	5	5	5	5
C02	5	5	5	5	5	5	5
C03	5	5	5	5	5	5	5
C04	5	5	5	5	5	5	5
C05	5	5	5	5	5	5	5
C06	5	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

MAB210 Fundamentals Manufacturing Technology					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	MAB210	Fundamentals Manufacturing Technology	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The course aims to help students understand the fundamental principles of manufacturing technology, classify manufacturing methods, and comprehend the relationship between production processes and engineering applications.

Teaching Methods and Techniques:

This course covers the classification of manufacturing processes, casting, plastic deformation, machining, welding methods, die technologies, production economics, quality control, and modern manufacturing approaches.

Prerequisites and co-requisites:

Course Coordinator:

Dr.-Ing Axel Stegen

Name of Lecturers:

Dr.-Ing Axel Stegen

Assistants:

Recommended or Required Reading

Resources

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

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

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Design Methods		
2	Product Design Process		
3	Principles of Methodical Design		
4	Introduction to Design Process with Autodesk Inventor I	Introduction to Design Process with Autodesk Inventor II	
5	Introduction to Design Process with Autodesk Inventor III		
6	Introduction to Design Process with Autodesk Inventor IV		
7	Technical drawing		
8	Midterm Exam		
9	Standards / Norms		
10	Creating Assembly Design with Autodesk Inventor III	Creating Assembly Design with Autodesk Inventor IV	
11	Computer Aided Design Introduction and Design I	Computer Aided Design Introduction and Design II	
12	Computer Aided Design Introduction and Design III	Computer Aided Design Introduction and Design IV	
13	Creating Assembly Design with Autodesk Inventor I	Creating Assembly Design with Autodesk Inventor II	
14	Advanced manufacturing practices and case studies		
15	General review and evaluation		
16	Final Exam		

Course Learning Outcomes

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 technical drawings and recognition of tolerances
C06	Understanding technical drawing standards and practices applied in the industry

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	14	1	14
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05
C01	5				
C02	5	3			
C03	4		3		
C04	4		3		
C05	3		2	2	
C06	5	3	4	2	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

MAT103 Analysis I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	MAT103	Analysis I	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

Analysis I

Teaching Methods and Techniques:

Real Numbers, Intervals, Equalities and Inequalities, Coordinate Systems, Lines, Slope, Functions of one Variable, Graphing Functions, Limit, Continuity, Differences, Rate of Change, Tangent Lines, Differentiation and Integration of Functions of one Variable Applications of Differentiation and Integration, Fundamental Theorem of Calculus, Infinite Series, Taylor-Series, Fourier-Series.

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Asist Prof.Dr. Canan Yıldız

Assistants:

Research Assist. Ozan Subaşı/Research 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. Hass
Thomas' Calculus, 12th Edition, G.B Thomas, M.D. Weir, J. Hass and F.R. Giordano, Addison-Wesley, 2012.
Mathematik für Ingenieure und Naturwissenschaftler, Band 1, Lothar Papula.

Course Category

Mathematics and Basic Sciences	: 100	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Functions and their graphs, linear functions, slope, trigonometric functions, modelling with functions.	-	Thomas' Calculus, 12th Edition, G.B Tho
2	Limits and Continuity: Rates of Change and Limits, Limit of a Function and Limit Laws, The Precise Definition of a Limit, On-	-	Thomas' Calculus, 12th Edition, G.B Tho
3	Differentiation: Tangent and Normal Lines, The Derivative at a Point, The Derivative as a Rate of Change, The Derivate as -	-	Thomas' Calculus, 12th Edition, G.B Tho
4	Derivatives of Trigonometric Frnctions, 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, Monotor-	-	Thomas' Calculus, 12th Edition, G.B Tho
6	Concavity and Curve Sketching, The Second Derivative Test for Concavity, Point of Inflection The Second Derivative Test fc-	-	Thomas' Calculus, 12th Edition, G.B Tho
7	Integration: Area and Estimating with Finite Sums, Average Value of Nonnegative Continuous Functions, Sigma Notation an-	-	Thomas' Calculus, 12th Edition, G.B Tho
8	(Quizexam) Mean Value Theorem fo Definite Integrals, The Fundamental Theorem of Calculus: Fundamental Theorem Part-	-	Thomas' Calculus, 12th Edition, G.B Tho

Course Learning Outcomes

No	Learning Outcomes
C01	Use both the definition of derivative as a limit and the rules of differentiation to differentiate functions.
C02	Sketch the graph of a function using asymptotes, critical points, and the derivative test for increasing/decreasing and concavity properties.
C03	Use derivatives to solve real world problems (e.g. optimization, related rates).
C04	Apply integration to compute areas and volumes by slicing, volumes of revolution, arclength, and surface areas of revolution.
C05	Evaluate integrals using techniques of integration, such as substitution, inverse substitution, partial fractions and integration by parts.
C06	Determine convergence/divergence of improper integrals, and evaluate convergent improper integrals.
C07	Determine convergence / divergence of infinite series
C08	Find the Taylor series expansion of a function near a point, with emphasis on the first two or three terms.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	14	%30
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	16	5,75	92
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
All	5	5	3	3	5	5



Turkish-German University

Faculty of Engineering
Department of Civil Engineering (German)

MAT106 Linear Algebra					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	MAT106	Linear Algebra	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

create the necessary information for more advanced mathematics topics

Teaching Methods and Techniques:

-Matrices: Definition of matrix, Types of matrices, matrix equality, Sum and difference of matrices, The product of scalar and matrix and their properties, Transpose of matrix and its properties - Some Special Matrices and Matrix Applications - Elementary row and column operations in matrices, Reduced row-echelon form, Rank of a matrix, The inverse of a square matrix, - Determinants: The determinant of a square matrix, Laplace's expansion, Properties of determinants -Sarrus rule, Additional matrix, Calculation of the inverse of a matrix with the aid of additional matrix - Systems of Linear Equations: Solving systems of linear equations with the aid of equivalent matrices, Linear homogeneous equations, -Cramer's method, The solution with the help of coefficients matrix -Vectors: Vector definition, the sum of vectors, the difference, the analytical expression vectors, scalar product of vectors, properties of the scalar multiplication Scalar product and its features, the mixed multiplication and properties, and properties of double vector product, -Vector spaces: Definition of vector spaces and theorems. Subspaces. Span concept and fundamental theorems. Linear dependence and linear independence of vectors and some theorems about linear dependence and linear independence. -Bases and dimension concepts and fundamental theorems. Definition of coordinates and transition matrices and some theorems. -Eigenvalues and Eigenvectors: The Calculation of Eigenvalues and Eigenvectors of a square matrix, - The calculation of Inverse and power of a square matrix with the help of the Cayley-Hamilton theorem.

Prerequisites and co-requisites:**Course Coordinator:****Name of Lecturers:**

Asist Prof.Dr. Canan Yıldız

Assistants:**Recommended or Required Reading****Resources**

Anton Howard, "Elementary Linear Algebra", 2000 Lineer Cebir ve Çözümlü Problemleri\Linear Algebra and Solving Problems (Güncelleştirilmiş Baskı), Prof. Dr. A. Göksel / Anton Howard, "Elementary Linear Algebra", 2000 Lineer Cebir ve Çözümlü Problemleri\Linear Algebra and Solving Problems (Güncelleştirilmiş Baskı), Prof. Dr. A. Göksel AĞARGÜN, Yrd. Doç. Dr. Hülya BURHANZADE, Birs Lineer Cebir Çözümlü Problemleri", Doç.Dr.Gürsel Yeşilot Bernard Kolman, David, R, Hill, "Uygulamalı lineer Cebir" Prof.Dr.Ömer Akın, Palme Yay., 2002 \Applied Linear Algebra

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Definition of matrix, types of matrix, Equality of Matrices, Addition and subtraction of matrices, matrix multiplication by a scalar		
2	Some Special Matrices and matrix applications.		
3	Elementary row and column operations in the Matrices. Row-Echelon form and reduced row-echelon form. Rank of a matrix.		
4	Definition of a determinant. Laplace expansion of a matrix. Properties of a determinant.		
5	Rule of Sarrus. The adjoint of a matrix, Using the adjoint matrix to find an inverse matrix and some applications about this.		
6	System of linear equations: solving systems of linear equations with aid of equivalent matrices, linear homogeneous equations		
7	Cramer's rule. Using the inverse of a coefficient matrix to solve a linear systems and some applications about this.		
8	Midterm exam		
9	Vectors: Definition of vector. The sum of vectors and the difference of vectors. Vectors in coordinate systems. Dot product		
10	Cross product of vectors and properties of cross product. Scalar triple product of the vectors and properties of it. Some applications		
11	Vector Spaces: Definition of vector spaces and theorems. Subspaces. Span concept and fundamental theorems. Linear dependence		
12	Bases and dimension concepts and fundamental theorems. Definition of coordinates and transition matrices and some theorems		
13	Some applications about Vector Spaces and some theorems about linear dependence and linear independence.		
14	Eigenvalues and eigenvectors: The eigenvalues of a square matrix		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will learn to operate in matrices (addition, subtraction, multiplication, inverse, etc.)
C02	Students will learn to prove some proposition about matrices
C03	Students will learn to solve problems about linear maps

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	4	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	3	42
Assignments	4	3	12
Presentation	0	0	0
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			102
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P04	P05	P06
All	5	5	5	5	5	5



MAT108 Analysis II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	MAT108	Analysis II	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

At the end of this lecture, the students should • master the differential and integral calculus of functions with several real variables which are necessary for dealing with mathematical models of engineering sciences, • know basic theorems about functions of several variables and have an idea about the methods of proofs of these theorem • master basic concepts and techniques of calculus and apply them to various (physical) problems, Knowledge & Understanding: 60% Analysis & Methodology: 40%

Teaching Methods and Techniques:

• Functions of several variables • Partial differentiation and gradient of scalar functions • The total differential • Error bounds, approximation, applications • extreme values • Multidimensional integration • Vector fields • Divergence and Curl of Vector fields • Integral theorems about vector fields

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Associate Prof.Dr. HAYDAR UNCU

Assistants:

Recommended or Required Reading

Resources - Sanal Ziya, Mathematik für Ingenieure, Vieweg+Teubner, Wiesbaden 2009 - Papula Lothar, Mathematik für Ingenieure und Naturwissenschaftler, Band 1+2, Wiesbaden Will be disseminated to the students in digital form

Course Category

Mathematics and Basic Sciences : 100	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences :	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Parametric representation of curves and polar coordinates		Analysis 2(Lehr- und Übungsbuch) (G. I
2	Calculation of curve lengths and surface areas, conic sections		Analysis 2(Lehr- und Übungsbuch) (G. B.
3	Vectors in three dimensions		Analysis 2(Lehr- und Übungsbuch) (G. B.
4	Lines and planes in three dimension.		Analysis 2(Lehr- und Übungsbuch) (G. B.
5	Surfaces in three dimensions		Analysis 2(Lehr- und Übungsbuch) (G. B.
6	Vector valued functions		Analysis 2(Lehr- und Übungsbuch) (G. B.
7	Partial derivatives		Analysis 2(Lehr- und Übungsbuch) (G. B.
8	Midterm		
9	Maximum, minimum and saddle points of two variable functions		Analysis 2(Lehr- und Übungsbuch) (G. B.
10	Double integrals		Analysis 2(Lehr- und Übungsbuch) (G. B.
11	Triple integrals		Analysis 2(Lehr- und Übungsbuch) (G. B.
12	Transformation of double and triple integrals between coordinate systems		Analysis 2(Lehr- und Übungsbuch) (G. B.
13	Vector fields		Analysis 2(Lehr- und Übungsbuch) (G. B.
14	Integral theorems of vector fields		Analysis 2(Lehr- und Übungsbuch) (G. B.

Course Learning Outcomes

No	Learning Outcomes
C01	Can do calculations with multivariable functions and apply these calculations to the mathematical models in engineering .
C02	Can do basic calculations about vectors, planes and surfaces in three dimensions.
C03	Can solve optimization problems described by multivariable functions.
C04	Can take double and triple integrals and use these calculations to find volumes of objects and areas of surfaces.
C05	knows the meaning of scalar and vector fields and fundamental integral theorems about vector fields.
C06	gets an idea about how the mathematical theorems are proved.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%20
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%120

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	3	42
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	25	25
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	45	45
Total Work Load			182
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	5	4	5	2	3	1	4
C01	5	4	5	2	3	1	4
C02	5	4	5	2	3	1	4
C03	5	5	5	3	4	1	4
C04	5	4	5	2	3	1	4
C05	5	4	5	2	3	1	4
C06	5	3	3	1	1	1	4



MAT201 Differential Equations					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	MAT201	Differential Equations	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

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-requisites:

Course Coordinator:

Name of Lecturers:

Asist. Prof. Dr. Mehmet Gökhan Gökçen

Assistants:

Research Assist. Sefer Arda Serbes / Research Assist. Uğur Yıldırım

Recommended or Required Reading

Resources

- 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>
- <https://drive.google.com/drive/folders/0B0yLQsBqSm-9R3h5SmFhb3pHMEK>
- <https://drive.google.com/drive/folders/0B0yLQsBqSm-9R3h5SmFhb3pHMEK>

Course Category

Mathematics and Basic Sciences	: 100	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Intro		
2	1. order DE		
3	2. Order, const. coeff. LDE		
4	Separation of variables		
5	Integrating factor		
6	undetermined coeff and variation of constants		
7	Sine and exponential forcing functions		
8	Nonlinear Autonomous Systems, Critical Points and Phase Diagrams		
9	Existence and uniqueness, stability		
10	Modeling		
11	Numerical and graphical solutions		
12	System of LDEs		
13	Eigenvalues, eigenvectors, fundamental matrices		
14	Laplace transformation, solution of the linear differential equations with Laplace transformation		

Course Learning Outcomes

No	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 qualitative behavior of the solutions.
C05	Know basic types of DEs and use them to model exponential growth / decay, spring-mass systems, LRC circuits, 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 Phase Shape, Weight and Transfer Function.
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 Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	1	%10
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
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

bbb

	P01	P02	P03	P04	P05	P06
All	5	5	5	5	5	5
C01	5					
C02	5					
C03	5					
C04	5					
C05	5					
C06	5					
C07	5					
C08	5					
C09	5					



MAT204 Statistical Methods for Data Analysis					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	MAT204	Statistical Methods for Data Analysis	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The participants of the module will be able to plan and carry out data surveys in a technical working environment, taking into account statistical principles and to evaluate the collected data. Based on the data collection and analysis, applicable key methods for problem identification and sustainable solutions are taught in company practice. ?Competence: 10% ?Method competence: 20% ?System competence: 40% ? Social competence: 30%

Teaching Methods and Techniques:

The course consists of the weekly 3-hour seminars with 1-hour practice and 1-hour lab. The students also get homework each week, which is worked out together with the tutor during the exercise.

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Asist Prof.Dr. Yaşanur Kayıkcı

Assistants:

Recommended or Required Reading

Resources Statistische Methoden der Datenanalyse https://www-zeuthen.desy.de/~kolanosk/smd_ss08/skripte/skript.pdf Sachs, L. (2004): Angewandte Statistik, 11.Auflage, Springer

Course Category

Mathematics and Basic Sciences : 60	Education :
Engineering : 40	Science :
Engineering Design :	Health :
Social Sciences :	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	What is statistics? Types of statistics, basic terms of statistics		
2	Scale level, classification of data, typography of data graphics		
3	Reference distributions, measures: mode, media, mean, quartiles, variance, standard deviation, skew, IQR, box plot		
4	Random Sample and Parameters, Probability Distributions, Discrete and Continuous Distribution Models		
5	Special distributions: binomial distribution, multinomial distribution, Poisson distribution, uniform distribution, normal distrib		
6	Distributions of multiple variables, probability density, distribution function, boundary distribution, expectation values, corre		
7	Linear functions of several random variables		
8	Non-linear functions of random variables		
9	Random Variables, Samples and Estimates Transformations: Paired Samples, Independent Samples		
10	Statistical test methods: significance analysis distribution, t-distribution, Kolmogorov-Smirnov, F-distribution, Chi-square tes		
11	Confidence Intervals: Bayes Confidence Intervals, Classic Confidence Intervals		
12	The maximum likelihood method, least squares method		
13	Classification and statistical learning: decision trees; Monte Carlo methods		
14	Review		

Course Learning Outcomes

No	Learning Outcomes
C01	Basics of statistics, methods of data collection, data analysis
C02	Analyzing data via Excel Spreadsheet, SPSS, and R

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	6	84
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	15	15
Practice	14	3	42
Laboratory	14	2	28
Project	0	0	0
Final examination	1	15	15
Total Work Load			184
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
All	5	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

MWT101 Materials Science: Introduction to the Career and Ethics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	MWT101	Materials Science: Introduction to the Career and Ethics	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to provide students with fundamental knowledge in the subjects of materials science, material properties, material characterization, and production methods.

Teaching Methods and Techniques:

Within the scope of the course, Historical development of materials science, fundamentals of materials science, material classes, materials production and characterization, current problems and future in materials science are discussed.

Prerequisites and co-requisites:**Course Coordinator:**

Bölüm Başkanı (Malz.Bil.ve Teknol.Böl)

Name of Lecturers:**Assistants:****Recommended or Required Reading****Resources**Lecture Notes of Department Professors
Lecture notes of department professors**Course Category**

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	: 100
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Historical development of Materials Science		
2	Introducing the fields and concepts of Materials Science, Classification of Materials		
3	Metals		
4	Metals		
5	Ceramics		
6	Ceramics		
7	Polymers		
8	Midterm		
9	Polymers		
10	Composite Materials		
11	Composite Materials		
12	Catalysts		
13	Introduction to production methods and Fundamentals of Material Characterization		
14	Current state of materials science and future opportunities		
15	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Öğrenci malzeme biliminin tarihsel gelişimi hakkında bilgi sahibi olur
C02	Türkiye'de ve dünyada malzeme bilimi ile ilgili güncel sorunlar ve konular hakkında bilgi sahibi olur.
C03	Malzeme Biliminin temel konuları ve kavramları ile tanışır
C04	Malzeme karakterizasyonu ve malzeme üretim metotları ile tanışır

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	13	2	26
Hours for off-the-c.r.stud	13	2	26
Assignments	0	0	0
Presentation	1	4	4
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes	
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	P03
C03	5
C04	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

Project Management					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	NWI106	Project Management	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach general information about projectmanagement

Teaching Methods and Techniques:

This course covers definition of a project, properties of a project, preparation of a project proposal and project control.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Meltem Karaismailoğlu Elibol

Name of Lecturers:

Asist Prof.Dr. Meltem Karaismailoğlu Elibol

Assistants:

Research Assist. Berat Berkan ÜnalResearch Assist. Elvan Burcu Koşma

Recommended or Required Reading

Resources

Crashkurs Projektmanagement. Peipe, S. (2007). Rudolf Haufe Verlag.,Grundlagen des Projektmanagements. Eberl, M. & Huesmann, M. (2022). W. Kohlhammer GmbH
Crashkurs Projektmanagement. Peipe, S. (2007). Rudolf Haufe Verlag.
Grundlagen des Projektmanagements. Eberl, M. & Huesmann, M. (2022). W. Kohlhammer GmbH
slides / sunum

2

Course Category

Mathematics and Basic Sciences	: 0	Education	: 0
Engineering	: 30	Science	: 30
Engineering Design	: 0	Health	: 0
Social Sciences	: 40	Field	: 0

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction, Basic Information	Preparing of presentation	Own notes, Several hand books
2	Introduction, Basic Information	Preparing of presentation	Own notes, Several hand books
3	Introduction, Basic Information	Preparing of presentation	Own notes, Several hand books
4	Project organisation and planing	Preparing of presentation	Own notes, Several hand books
5	Project organisation and planing	Preparing of presentation	Own notes, Several hand books
6	Project organisation and planing	Preparing of presentation	Own notes, Several hand books
7	Project Management	Preparing of presentation	Own notes, Several hand books
8	Project Management	Preparing of presentation	Own notes, Several hand books
9	Project Management	Preparing of presentation	Own notes, Several hand books
10	Project Management	Preparing of presentation	Own notes, Several hand books
11	Project Management	Preparing of presentation	Own notes, Several hand books
12	Phases of a project	Preparing of presentation	Own notes, Several hand books
13	Phases of a project	Preparing of presentation	Own notes, Several hand books
14	Project control and finishing	Preparing of presentation	Own notes, Several hand books

Course Learning Outcomes

No	Learning Outcomes
C01	How to start a project will be taught.
C02	How a project can be developed systematically will be taught.
C03	Finding risks of a project and taking measures will be taught.
C04	Project evaluation and methods will be taught.
C05	Successful project completion will be taught.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	1	%50
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	15	2	30
Hours for off-the-c.r.stud	15	2	30
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	1	30	30
Final examination	1	2	2
Total Work Load			94
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes							
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	P01	P02	P03	P04	P05	P06	P07
All	4	4	4	3	5	4	4
C01	4	4	4	3	5	4	4
C02	4	4	4	3	5	4	4
C03	4	4	4	3	5	4	4
C04	4	4	4	3	5	4	4
C05	4	4	4	3	5	4	4



PHY103 Modern Physics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	PHY103	Modern Physics	5	4	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The main purpose of this course is to teach the engineering students fundamental concepts of modern physics and to reinforce those concepts through via experiments and applications.

Teaching Methods and Techniques:

This course comprises a comprehensive content addressing fundamental physical interactions and the laws of nature. It encompasses classical physics topics such as conservation laws, harmonic motion, and waves, along with electromagnetic waves, wave optics, interference, and diffraction. Additionally, it includes foundational aspects of modern physics through blackbody radiation, the photoelectric effect, and the Bohr atomic model, extending to advanced topics such as quantum physics and laser technologies. The course also covers fundamental concepts of time, space, and motion within the framework of the theory of special relativity.

Prerequisites and co-requisites:**Course Coordinator:**

Asist. Prof. Dr. Ali Kazım Çamlıbel

Name of Lecturers:

Asist. Prof. Dr. Ali Kazım Çamlıbel

Assistants:

Research Assist. Uğur Yıldırım / Research Assist. Recep Özkan

Recommended or Required Reading**Resources**

Physik: Lehr- und Übungsbuch, Douglas C. Giancoli, 2019, Halliday Physik, David Halliday, Robert Resnick, Jearl Walker, 2017
- Physik: Lehr- und Übungsbuch, Douglas C. Giancoli, 2019
- Halliday Physik, David Halliday, Robert Resnick, Jearl Walker, 2017

Course Category

Mathematics and Basic Sciences	: 50	Education	: 0
Engineering	: 10	Science	: 40
Engineering Design	: 0	Health	: 0
Social Sciences	: 0	Field	: 0

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction: physical theories, observations, interactions		
2	Simple harmonic motion		
3	Waves and wave propagation		
4	Sound waves		
5	Kinetic theory of gases		
6	Ray optics: reflection and refraction		
7	Wave nature of light; interference		
8	Ara sınav		
9	Diffraction und polarization		
10	Special theory of relativity		
11	Special theory of relativity: energy and mass		
12	Early quantum theory and atom models		
13	Quantum mechanics		
14	Atoms, molecules and solids		
15	Nuclear physics and elementary particles		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students learn the main concepts in modern physics.
C02	Students learn the main laws in modern physics.
C03	Students can solve complicated problems.
C04	Students can conduct fundamental experiments of modern physics and report their results.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	4	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	11	7	77
Assignments	4	5	20
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	1	14
Laboratory	4	2	8
Project	0	0	0
Final examination	1	4	4
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes		
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	P01	P06
C01	5	
C02	5	
C03	5	
C04		5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

POL507 Russian Politics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	POL507	Russian Politics	3	3	5

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
This course is an introduction to Russian politics. The course aims at strengthening students' knowledge of contemporary Russia, understanding the historical and current factors that shape its policy and developing skills to interpret and analyze political events.

Teaching Methods and Techniques:
The course starts with a historical perspective on the Tsarist era and Soviet legacies. Following a brief introduction on the Tsarist and Soviet periods, the course focuses on the main issues of Russian foreign policy in the post-Cold War period.

Prerequisites and co-requisites:

Course Coordinator:
Associate Prof.Dr. Zaur GASIMOV

Name of Lecturers:
Associate Prof.Dr. Zaur GASIMOV

Assistants:

Recommended or Required Reading	
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Resources

1. Stephen White, Richard Sakwa, and Henry Hale, eds. 2010. Developments in Russian Politics 7. Durham, NC: Duke University Press.
2. Mary McAuley. 1992. Soviet Politics. London: Routledge.
1. Andrei P. Tsygankov, Whose World Order? Russia's Perception of American Ideas after the Cold War, Indiana: University of Notre Dame Press, 2004.
2. Andrei P. Tsygankov, Russia's Foreign Policy: Change and Continuity in National Identity, Plymouth: Rowman & Littlefield, 2010.
3. Nicolai N. Petro and Alvin Z. Rubinstein, Russian Foreign Policy: From Empire to NationState, NY: Longman, 1997.

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

Weekly Detailed Course Contents			
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Week	Topics	Study Materials	Materials
1	Introduction		
2	Russian Foreign Policy: Traditions		
3	Tsarist Roots of Russian Foreign Policy		
4	Soviet Foreign Policy I: Lenin		
5	Soviet Foreign Policy II: Stalin		
6	Soviet Foreign Policy III: Khrushchev and Brezhnev		
7	Review		
8	Midterm Exam		
9	Gorbachev and New Thinking		
10	New Thinking		
11	Yeltsin's Term		
12	Putin's Realist Foreign Policy		
13	Putin's Second Term		
14	Putin's Third Term		
15	Review		
16	Final Exam		

Course Learning Outcomes	
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No	Learning Outcomes
C01	To account for the history of the Soviet Union
C02	To describe and explain the challenges of Post-Soviet democratic and economic transition
C03	To examine and analyze the basic dimensions of Russian politics
C04	To interpret the main principles of Russian foreign policy

Program Learning Outcomes	
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No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	4	52
Assignments	3	3	9
Presentation	2	15	30
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
C01	4	5	4	4	5	5	5
C02	5	5	5	5	5	4	5
C03	5	3	5	3	5	5	3
C04	5	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

POL552 Ottoman Political History I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	POL552	Ottoman Political History I	3	3	5

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of the course is to enable students to understand the political developments of the Ottoman Empire from its foundation to the late 16th century. The course examines the foundation of the Ottoman Empire, its early rulers, the period of its rise and the political structure of the empire at its peak. In addition, students analyze the Ottoman domestic and foreign policy strategies, their impact on world politics and the expansion of the empire through great conquests.

Teaching Methods and Techniques:

Osmanlı Siyasi Tarihi I (1299-1600) dersi, Osmanlı İmparatorluğu'nun kuruluşundan 16. yüzyıl sonlarına kadar olan dönemi kapsamaktadır. Ders, Osmanlı'nın ilk dönem padişahları, İstanbul'un fethi ve yükselme dönemi gibi önemli siyasi gelişmeleri incelemeyi hedefler. Öğrenciler, Osmanlı İmparatorluğu'nun iç yapısını, yönetim sistemini ve dünya siyaseti üzerindeki etkilerini analiz ederek tarihi süreçleri derinlemesine öğrenirler.

Prerequisites and co-requisites:**Course Coordinator:**

Associate Prof.Dr. Hüseyin Onur Ercan

Name of Lecturers:

Associate Prof.Dr. Hüseyin Onur Ercan

Assistants:**Recommended or Required Reading****Resources**

Şimşir, Mehmet. (1997). Osmanlı İmparatorluğu'nda Yükselme Dönemi ve Kanuni Sultan Süleyman. Ankara: Türk Tarih Kurumu Yayınları.,Halil İnalçık; (2019) Osmanlı İm İnalçık, Halil. (2004). Osmanlı İmparatorluğu: Klasik Dönem 1300-1600. İstanbul: Çantay Kitabevi.

Şimşir, Mehmet. (1997). Osmanlı İmparatorluğu'nda Yükselme Dönemi ve Kanuni Sultan Süleyman. Ankara: Türk Tarih Kurumu Yayınları.

Kafadar, Cemal. (1995). Osmanlı'dan Günümüze Türkiye'de Toplum ve Siyaset. İstanbul: İletişim Yayınları.
Derece navlaılacaktır

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	General information about the early Ottomans		
2	The historical process of the Ottoman Principality's relations with other Turkmen principalities in Anatolia		
3	The rapid advance of the Ottomans in the Balkans and the policy of appropriation		
4	15th century Ottoman political and military history		
5	From Constantinople to Istanbul, from the Middle Ages to the New Age		
6	15th century Ottoman political and military history		
7	The birth of the Ottoman Classical Age		
8	Midterm Exam		
9	Yavuz Sultan Selim and the beginning of political domination in the Islamic world		
10	Suleiman the Magnificent and the transformation into a world state		
11	Suleiman the Magnificent and Charlemagne (Karl V)		
12	Developments between 1566-1593		
13	The end of the Ottoman Classical Age and the first quarter of the 17th century		
14	Ottoman and European Relations: Sieges of Vienna and Diplomacy		
15	General Evaluation and Discussion		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to identify and analyze the major political events and developments from the foundation of the Ottoman Empire to the late 16th century.
C02	Students will be able to evaluate the internal structure, administrative system and military structure of the Ottoman Empire and discuss the role of these structures in the longevity of the state.
C03	Students will gain in-depth knowledge on the foreign policy, conquests and diplomatic relations of the Ottoman Empire and will be able to comprehend the impact of these processes on world politics.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	7	91
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	1	4	4
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	4	4	5	5	5
C02	5	5	4	4	5	5	5
C03	5	5	4	4	5	5	5



SOZ027 Sociology and Artificial Intelligence					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	SOZ027	Sociology and Artificial Intelligence	3	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to introduce students to the fundamentals of artificial intelligence from a sociological perspective and seeks to develop their analytical skills within this framework.

Teaching Methods and Techniques:

This course includes various discussions on artificial intelligence in relation to the sociology of digital interaction and encompasses the sociological dimensions of these debates.

Prerequisites and co-requisites:

Course Coordinator:

Associate Prof.Dr. Valentin Rauer

Name of Lecturers:

Associate Prof.Dr. Valentin Rauer

Assistants:

Research Assist. Zinnur Fidan

Recommended or Required Reading

Resources

Roger Häußling / Claudius Härpfer / Marco Schmitt (Hg.) (2024): Soziologie der Künstlichen Intelligenz. Perspektiven der Relationalen Soziologie und Netzwerkforschung, Michael Heinlein / Norbert Huchler (Hg.) 2024: Künstliche Intelligenz, Mensch und Gesellschaft: Soziale Dynamiken und gesellschaftliche Folgen einer technologischen Inn

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences :	Field : 100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction	-	-
2	Question: Why artificial intelligence from a social science perspective?	-	-
3	Basic concepts of artificial intelligence	-	-
4	Algorithms and algorithm cultures	-	-
5	Machine learning and big data	-	-
6	From companies to platforms	-	-
7	Review	-	-
8	Midterm	-	-
9	From social interaction to transformation	-	-
10	Opportunities and risks for democracies	-	-
11	Opportunities and risks for principles of responsibility and liability	-	-
12	Opportunities and risks for personality, individuality and creativity	-	-
13	Opportunities and risks for education and knowledge	-	-
14	Methodological opportunities and risks: one method for everything?	-	-
15	Repetitions, summary and discussion	-	-
16	Final Exam	-	-

Course Learning Outcomes

No	Learning Outcomes
C01	Students can explain the basics of Artificial Intelligence.
C02	Students learn the basic concepts of AI sociology.
C03	Students will have the concept set to analyze the relationships between artificial intelligence and society.
C04	Students develop the analytical skills necessary to understand the social dimensions of the opportunities, challenges, and issues of artificial intelligence.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	2	%40
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	9	117
Assignments	2	3	6
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes					
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	P01	P05	P06	P07
C01	5	5	4	2
C02	5	5	4	2
C03	5	5	4	2
C04	5	5	4	2



SOZ132 Logic and Argumentation in Social Sciences					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	SOZ132	Logic and Argumentation in Social Sciences	3	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to enable students to examine arguments in sociological texts, evaluate their validity, and construct their own arguments. It also aims to help students recognize logical fallacies in arguments and ensure they can build sound arguments when writing sociological texts.

Teaching Methods and Techniques:

This course includes the fundamentals of logic, argumentation, and philosophical thought and encompasses the core principles of these concepts.

Prerequisites and co-requisites:

Course Coordinator:

Associate Prof.Dr. Valentin Christian Gregor Rauer

Name of Lecturers:

Associate Prof.Dr. Valentin Christian Gregor Rauer

Assistants:

Research Assist. Rukiyye Zinnur Fidan

Recommended or Required Reading

Resources

Jan Janzen. "Logik und Argumentationstheorie". Weiter denken - über Philosophie, Wissenschaft und Religion. ed. Gregor Betz vd. Berlin: de Gruyter. s. 125-136.,Ansgar Chaim Perelman, Lucie Olbrechts-Tyteca und Josef Kopperschmidt. (2004) Die Neue Rhetorik: Eine Abhandlung über das Argumentieren. Stuttgart-Bad Cannstatt: Fromm

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 100	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		
2	Deduction, Induction		
3	Analogy		
4	Logic Errors I		
5	Logic Errors II		
6	Rhetoric		
7	Kinds of Argumentation I		
8	Midterm		
9	Kinds of Argumentation II		
10	Kinds of Argumentation III		
11	Argumentation Techniques I		
12	Argumentation Techniques II		
13	Argumentation Techniques III		
14	Sociological Interpretation		
15	Review		
16	Final		

Course Learning Outcomes

No	Learning Outcomes
C01	Students can enlist the logical and argumentative tools used in the construction of arguments
C02	Students can discuss the strength of arguments used in sociology.
C03	Students can construct their own arguments logically and argumentatively.
C04	Students can comment on sociological issues through the arguments they construct.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	11	10	110
Assignments	1	10	10
Presentation	0	0	0
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P03	P05	P06
C01		5	4	
C02	5	5	4	4
C03		4		
C04		4		



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

TUR001 Turkish I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	TUR001	Turkish I	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The goal is to educate individuals who speak their mother tongue effectively, have effective speech, writing, reading and listening skills and strong communication skills.

Teaching Methods and Techniques:

In the Turkish I course, subjects such as the history of languages, culture, communication and grammar will be covered.

Prerequisites and co-requisites:

Course Coordinator:

Instructor Dr. Gül Aysel AKAR

Name of Lecturers:

Instructor Dr. Gül Aysel AKAR

Assistants:

Recommended or Required Reading

Resources

BANGUOĞLU, Tahsin, Dil Bahisleri, Kubbealtı Neşriyat, İstanbul, 1987., ELİOT, T. S., Kültür Üzerine Düşünceler. (Çev. S. Kantarcı) Kültür ve Turizm Bakanlığı Publishing , ERGİN, Muharrem, Turkish Language, Boğaziçi Publications, İstanbul, 2013.

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	The language and the language universals		
2	The language and the place of the Turkish language between the world languages		
3	The alphabets used in Turkish writing		
4	The relationship between the language and the culture		
5	Phonetics and phonetic events		
6	The theory of forms (the endings in Turkish, the word construction)		
7	Word structure		
8	Midterm Exam		
9	Word Types		
10	Components of Sentence		
11	Types of sentence		
12	The vocabulary of Turkish		
13	The interaction between languages and the influence of Turkish on world languages		
14	Current problems of the Turkish language		
15	The influence of the mass media on the language		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Students understand the language in all aspects and are familiar with language universals.
C02	Students can categorize the languages from the aspect of origin and structure.
C03	Students can list the characteristics of the languages and explain the types of languages.
C04	Students understand the differences between terms such as "dialect, accent etc."
C05	Students think of terms like "mother tongue, original language, artificial language, lingua franca, official language"
C06	Students determine the position of the Turkish language between the world languages.
C07	Students think about culture and analyze the relationships between cultures. They analyze the references of culture to language.
C08	Students understand the connection between culture and language.
C09	Students understand the grammar rules of the Turkish language.
C10	Students analyze the grammar rules.
C11	Students internalize the rules of grammar and use in daily life correspondence.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	12	2	24
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	1	1	5	1	5	1	5
C01	1	1	5	1	5	1	5
C02	1	1	5	1	5	1	5
C03	1	1	5	1	5	1	5
C04	1	1	5	1	5	1	5
C05	1	1	5	1	5	1	5
C06	1	1	5	1	5	1	5
C07	1	1	5	1	5	1	5
C08	1	1	5	1	5	1	5
C09	1	1	5	1	5	1	5
C10	1	1	5	1	5	1	5
C11	1	1	5	1	5	1	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

TUR002 Turkish II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
8	TUR002	Turkish II	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Compulsory

Objectives of the Course:

The aim of the course is to educate individuals about using their native language effectively and to have effective speaking, writing, reading and listening skills.

Teaching Methods and Techniques:

Turkish II course includes topics such as composition information, writing types, spelling rules, punctuation marks.

Prerequisites and co-requisites:

Course Coordinator:

Instructor Dr. Gül Ayşe AKAR

Name of Lecturers:

Instructor Dr. Gül Ayşe AKAR

Assistants:

Recommended or Required Reading

Resources

KAVCAR, C., OĞUZKAN F., AKSOY Ö., Yazılı ve Sözlü Anlatım, Anı Publishing, Ankara, 2007., KIRIMLI, Atilla, Türk Dili: Dil ve Anlatım, Bilgi Üniversitesi Publishing, İstanbul, AKALIN, Şükrü Halük, vd., Türk Dili II, Muhsin Macit (ed.), 4.Edition, Anadolu Üniversitesi Publishing, Eskişehir, 2015.

Ara Sınav+Final

Course Category

Mathematics and Basic Sciences	:	Education	:	50
Engineering	:	Science	:	
Engineering Design	:	Health	:	
Social Sciences	:	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	General Written Composition Information / Expression Forms		
2	Punctuation Marks		
3	Writing Rules		
4	Written Expression Disorders		
5	Opinion Writings (Articles, Critiques, Essays etc.)		
6	Opinion Writings (Interview, Diary, Biography, Autobiography)		
7	Literary Writings (Poetry, Story)		
8	Midterm Exam		
9	Literary Writings (Novel, Theater)		
10	Scholar Articles		
11	Formal Correspondences (Petitions, Minutes, Decrees, Reports)		
12	Official Correspondence (Curriculum Vitae, Letter, Business Letter, Official Letter, Open Letter)		
13	Effective and Critical Reading		
14	Effective Listening and Listening Types		
15	Oratory		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Students by comprehending the functions of narrative forms in writing, construct a composition.
C02	Students understands the uses of punctuation marks and use them correctly.
C03	Students understand the rules of writing in Turkish language and uses the rules in daily life.
C04	Students explain the features of opinion essays and gets ideas about how to develop the opinion in these articles.
C05	Students distinguish the types of opinion essays. They learn about these types of essays and examine this kind of texts in Turkish Literature.
C06	Students realize the characteristics of artistic writing. Students distinguish this type of writing from opinion essays and recognize the examples of artistic writing from Turkish Literature.
C07	Students distinguish the types of poetry. They examine examples of different poetry types.
C08	Students analyze the elements of the story. They distinguish the story types.
C09	Students examine how the genre of the novel develops in world literature and Turkish literature. They evaluate the differences of novel types.
C10	Students have information about the types of theater. They evaluate the differences of theater types in World Literature and Turkish Literature.
C11	Students learn how to do scientific research. They examines the examples on how to show resources in a scientific research. They understand that writing a scientific paper is a scientific code of etf
C12	Students analyzes correspondence types. They understand the characteristics of these species.
C13	They examine effective reading methods. They determines which methods are used in terms of their own learning strategy. They apply reading methods in daily life and develop a strategy of self-r
C14	Students analyzes the types of listening and makes a synthesis about which listening methods to use in communicating with people in daily life.
C15	Understands the basic principles of effective conversation. They thinks about how this kind of speech should be done and valuate the impact of body language on speech. They analyzes speech typ
C16	Students explain the rules of speech that should be considered when talking in an effective presentation. They understand how to make the presentation more effective by paying attention to pron

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	1	1	5	1	5	1	5
C01	1	1	5	1	5	1	5
C02	1	1	5	1	5	1	5
C03	1	1	5	1	5	1	5
C04	1	1	5	1	5	1	5
C05	1	1	5	1	5	1	5
C06	1	1	5	1	5	1	5
C07	1	1	5	1	5	1	5
C08	1	1	5	1	5	1	5
C09	1	1	5	1	5	1	5
C10	1	1	5	1	5	1	5
C11	1	1	5	1	5	1	5
C12	1	1	5	1	5	1	5
C13	1	1	5	1	5	1	5
C14	1	1	5	1	5	1	5
C15	1	1	5	1	5	1	5
C16	1	1	5	1	5	1	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDAFY101 Disaster Management					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	ÜSDAFY101	Disaster Management	2	1,5	3

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of the course is to increase students' awareness about disasters; to inform them about what to do before, during and after disasters; to ensure that they are prepared for different types of disasters.

Teaching Methods and Techniques:

Disaster awareness training, first aid information training

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Asist. Prof. Dr. Dr. Öğr. Üyesi Eylül Tuğçe ALNIAÇIK

Assistants:

Recommended or Required Reading

Resources <https://www.afad.gov.tr/>

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	: 100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Key Concepts		
2	Disaster Risks in Turkey		
3	Workshop		
4	Workshop		
5	Workshop		
6	Workshop		
7	Workshop		
8	Workshop / Midterm		
9	Workshop		
10	Workshop		
11	Workshop		
12	Workshop		
13	Workshop		
14	Workshop		
15	Final exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will gain awareness about disasters.
C02	Students will be informed about the necessary preparations before, during and after the disaster.
C03	Students will gain awareness about the types of disasters that concern Türkiye.
C04	Students will have basic knowledge about the importance of communication in disaster management.
C05	Students will gain awareness about civil society and volunteering in disaster management.
C06	Students will gain awareness of the relationship between disasters and technical and engineering arrangements such as infrastructure and transportation.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%40

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	3	42
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			101
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P07
C01		4		4		1
C02	2	4	2	4	2	
C03		4		4	3	
C04			5			
C05			5		4	
C06	4			3		



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDBAU449 Natural Disasters					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDBAU449	Natural Disasters	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

To provide general information about natural disasters. To explain the layers of the earth and the natural processes taking place in these layers. To discuss the formation of natural disasters and their devastating consequences.

Teaching Methods and Techniques:

This course covers the formation processes, impacts, and management approaches of natural disasters. The distinction between natural events and disasters is examined along with the geophysical, mechanical, and thermodynamic processes that cause them. The course explores the Earth's internal structure, atmosphere, hydrosphere, and lithosphere, focusing on how disasters occur in these layers. Various types of natural disasters, including earthquakes, volcanic eruptions, tsunamis, landslides, hurricanes, floods, droughts, and wildfires, are analyzed in terms of their causes, impacts, and consequences. Additionally, the course includes the effects of global warming and climate change on natural disasters, addressing the risks associated with these changes and possible future scenarios. Disaster management, risk assessment methods, and preventive measures are thoroughly discussed, with a focus on preparedness, response, recovery, and mitigation strategies for disaster resilience.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Enver Vural YAVUZ

Name of Lecturers:

Asist. Prof. Dr. Serdar ULUSOY Prof. Dr. Enver Vural YAVUZ

Assistants:

Research Assist. Barış KATRANCI

Recommended or Required Reading**Resources**

Yu, M., Yang, C., & Li, Y. (2018). Big data in natural disaster management: a review. *Geosciences*, 8(5), 165., Doğal afetler: toplum sağlığını koruma. Nobel, 2014. Prepared presentations

Course Category

Mathematics and Basic Sciences	:		Education	:	60
Engineering	:		Science	:	
Engineering Design	:	25	Health	:	
Social Sciences	:	15	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction"Definition, delimitation and systematics of the natural disaster"		
2	"Structure and dynamics of the geosphere"		
3	"Earthquakes and Seismic Waves"		
4	"The intensity of an earthquake"		
5	"Impact and protection against earthquakes"		
6	"Volcanic eruptions"		
7	Slope movements"Landslides and Avalanches"		
8	Midterm Exam		
9	Structure and Dynamics of the Atmosphere" Winter Storms, Tropical Hurricanes and tornadoes", Midterm Exam.		
10	Structure and Dynamics of the Hydrosphere"Storm Waves and Floods"		
11	Extraterrestrial effects"Meteorites - Changes in Beam Conditions"		
12	Climate Change"Definition and climatic characteristics"		
13	Climate change "An announced disaster or intimidation?"		
14	Risk analysis"Modeling, evaluating and managing natural disasters"		
15	General evaluation of the course		
16	Final Examination		

Course Learning Outcomes**No Learning Outcomes**

C01	Analyze and evaluate the difference between natural events and the concept of disaster.
C02	Explains the mechanical and thermodynamic processes that cause the formation of natural disasters.
C03	Defines the earth and its surrounding layers where natural disasters occur.
C04	Makes comments based on scientific data about the existence, causes and consequences of global warming.
C05	Analyze disaster and risk management approaches and produce effective solutions.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	8	3	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	4	4	5	3	5
C02	5	5	4	4	5	3	5
C03	5	5	4	4	5	3	5
C04	5	5	4	4	5	3	5
C05	5	5	4	4	5	3	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDBAU462 Engineering Economics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ÜSDBAU462	Engineering Economics	3	2,5	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to equip students with the ability to perform economic analyses of engineering projects. Students are expected to understand cost analysis, investment evaluation, financial calculations, and economic decision-making processes to make effective and efficient decisions in engineering projects.

Teaching Methods and Techniques:

The course includes basic topics in engineering economics. These topics cover cost calculations, investment evaluations, financial analysis techniques, interest rates, depreciation, and provide solutions to economic problems encountered in engineering projects. It will also discuss the economic aspects of engineering projects and resource management.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:

Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading

Resources Principles of Engineering Economics by Eugene L. Grant and W. Grant Ireson, Engineering Economy by Leland T. Blank and Anthony J. Tarquin

Course Category

Mathematics and Basic Sciences :		Education :	
Engineering :		Science :	
Engineering Design :		Health :	
Social Sciences :		Field :	100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Fundamentals of Engineering Economics		
2	Interest and Interest Rate Calculations		
3	Cost Calculations and Investment Evaluation		
4	NPV (Net Present Value) and IRR (Internal Rate of Return) Methods		
5	Financial Calculations and Depreciation		
6	Advanced Financial Analysis		
7	Resource Management and Project Financing		
8	Midterm Exam		
9	Risk Analysis in Engineering Projects		
10	Economic Decision-Making Methods		
11	Applications in Investment Evaluation		
12	Application Areas of Engineering Economics		
13	Sustainability and Economic Impacts		
14	New Methods and Developments in Engineering Economics		
15	Project Evaluation and Financial Planning		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can perform economic analyses of engineering projects.
C02	Can make financial evaluations for investment projects.
C03	Can understand economic analyses such as cost calculations and depreciation.
C04	Can make economic decisions in engineering projects and justify those decisions.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	10	1	10
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	1	14
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	4	5	3	4	5	5	1
C02	4	5	3	4	5	5	1
C03	4	5	3	4	5	5	1
C04	4	5	3	4	5	5	1



ÜSDBAU464 Tunneling					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDBAU464	Tunneling	3	2,5	2

Mode of Delivery:
Face to Face

Language of Instruction:
English

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
This course aims to teach methods and technologies used in tunnel engineering. Students will learn the fundamental principles of tunnel construction, tunnel design, excavation methods, and ground studies, aiming to manage tunnel projects effectively and safely.

Teaching Methods and Techniques:
The course includes the fundamental topics of tunnel engineering. These topics cover tunnel design, various tunnel excavation methods, groundwater and geological factors, tunnel structural characteristics, safety measures, and cost management in tunnel construction. Furthermore, modern tunnel engineering technologies and case studies will be discussed.

Prerequisites and co-requisites:

Course Coordinator:
Prof. Dr. Murat HAMDERİ (Yerine)

Name of Lecturers:
Prof. Dr. Murat HAMDERİ (Yerine)

Assistants:

Recommended or Required Reading	
Resources	Tunnel Engineering Handbook by S. M. V. L. R. Subramanian, Tunneling: A Practical Approach by Richard L. Pells

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

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	Introduction to Tunnel Engineering		
2	Principles of Tunnel Design		
3	Ground Studies and Geological Surveys		
4	Tunnel Excavation Methods: Open and Closed Tunnels		
5	Groundwater and Tunnel Projects		
6	Tunnel Structural Features and Safety Measures		
7	Cost Management in Tunnel Projects		
8	Midterm Exam		
9	Modern Tunnel Engineering Technologies		
10	Advanced Excavation Methods		
11	Environmental Impacts in Tunnel Construction		
12	Safety Protocols in Tunnel Engineering		
13	Risk Management in Tunnel Projects		
14	Practical Tunnel Projects and Case Studies		
15	Innovative Applications in Tunnel Engineering		
16	Final Exam		

Course Learning Outcomes	
No	Learning Outcomes
C01	Can understand tunnel design and construction methods.
C02	Can evaluate various tunnel excavation methods and their applicability.
C03	Can analyze factors influencing tunnel projects, such as ground studies and groundwater.
C04	Can make decisions considering safety, cost management, and environmental factors in tunnel projects.

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	10	1	10
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	1	14
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P06	P07	
C01	1	5	5	5	3	2	
C02	1	5	5	5	3	2	
C03	1	5	5	5	3	2	
C04	1	5	5	5	3	2	



ÜSDBAU468 Mega Structures					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDBAU468	Mega Structures	2	2	2

Mode of Delivery:
Face to Face

Language of Instruction:
Turkish

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
This course aims to introduce iconic engineering projects from around the world and analyze them in terms of design, construction, cost, environmental impact and innovative technologies. By learning the technical details of engineering and architectural marvels, students will understand the basic principles behind these projects, the challenges faced and the solution processes.

Teaching Methods and Techniques:
This course is designed to examine the technical, economic, and environmental aspects of groundbreaking projects in engineering and architecture. Representing the pinnacle of human achievement in engineering, these projects cover a wide range, from the Marmaray Tunnel to Burj Khalifa, from the Panama Canal to the Gotthard Base Tunnel. Throughout the course, the design processes of these structures and projects, the technical challenges encountered during construction, and the solutions developed to overcome these challenges will be analyzed in detail. Additionally, the aesthetic, architectural, and cultural contributions of these projects, as well as their environmental and social impacts, will be evaluated. Students will have the opportunity to explore the engineering principles behind these projects while also studying key concepts such as cost management, sustainability, and resilience. By the end of the course, participants are expected to grasp the innovative approaches used in these large-scale projects, develop creative solutions to engineering challenges, and gain the competence to design impactful projects on a global scale.

Prerequisites and co-requisites:

Course Coordinator:
Dr. Ozan Subaşı

Name of Lecturers:
Dr. Ozan Subaşı

Assistants:

Recommended or Required Reading

Resources Mega Buildings, (2024) National Geographic, Turkey's Giant Buildings, (2025), TRT Documentary.

Course Category

Mathematics and Basic Sciences	: 30	Education	:
Engineering	:	Science	: 30
Engineering Design	: 25	Health	:
Social Sciences	: 15	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction		
2	Marmaray Tunnel, Connecting Both Sides of the Bosphorus		
3	The Largest Land Excavation Project in History: Panama Canal		
4	One of the World's Tallest Dams: Deriner Dam		
5	The Tallest Skyscraper in the World: Burj Khalifa		
6	Palm Jumeirah, Dubai		
7	Osmangazi Bridge		
8	Midterm		
9	The Longest and Deepest Tunnel in the World: Gotthard Base Tunnel		
10	The \$8 Billion Tottenham Hotspur Stadium		
11	The Most Expensive Urban Development Project in History: Abu Dhabi		
12	Sydney Opera House		
13	kashi Kaikyo Bridge		
14	Istanbul Airport		
15	Channel Tunnel		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Analyze the technical characteristics and design processes of major engineering projects in different regions of the world.
C02	Explain the design, construction, and implementation phases of modern engineering structures
C03	Evaluate the environmental, economic, and social impacts of large-scale engineering projects.
C04	Interpret the innovative engineering approaches used in these projects and develop creative solutions to engineering challenges.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%40
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	5	3	15
Assignments	1	10	10
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	3	4	5	5	4	5
C02	5	3	4	5	5	4	5
C03	5	3	4	5	5	4	5
C04	5	3	4	5	5	4	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDCVA120 Child and Family					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDCVA120	Child and Family	2	2	3

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to enable students to evaluate the fundamental concepts, current issues, and solution approaches related to family and children from an interdisciplinary perspective by addressing the phenomena of family and childhood in their social, cultural, psychological, legal, and economic dimensions. The course also contributes to raising awareness among students from different departments about family and child-related issues and helps them establish connections with everyday life.

Teaching Methods and Techniques:

Within the scope of the course, topics such as the concepts of family and child, types of families, healthy family structures, parenting styles, child development, family communication, gender roles, children with special needs and those at risk, marriage and family life, family and children in the digital age, legal literacy, family economics, financial literacy, and contemporary family issues are addressed. The course presents theoretical frameworks together with current societal examples.

Prerequisites and co-requisites:**Course Coordinator:**

Associate Prof.Dr. Ayşe Elif POSOS DEVRANİ

Name of Lecturers:

Asist. Prof.Dr. Yasemin OKAN ER

Assistants:**Recommended or Required Reading**

Resources	
•	Adak, N. (2012). Değişen toplumda değişen aile. Siyasal Kitabevi. • Aksoy, E. (Yıl). Ebeveynlerin aile hayatı ve çocuk yetiştirme tutumları ile ergenlerin ir
•	Adak, N. (2012). Değişen toplumda değişen aile. Siyasal Kitabevi.
•	Aksoy, E. (Yıl). Ebeveynlerin aile hayatı ve çocuk yetiştirme tutumları ile ergenlerin internet bağımlılığı. Hacettepe Psikoloji Dergisi, 29(2), 101-118. https://doi.org/10.1501/PSIK292011
•	Aksoy, İ. (2011). Türklere aile ve çocuk eğitimi. Journal of International Social Research, 4(16).
•	Bekman, S., & Aksu-Koç, A. (2018). İnsan gelişimi, aile ve kültür: Farklı bakış açıları. Koç Üniversitesi Yayınları.
•	Bozacı, İ., & Güner, A. (2025). Disiplinlerarası yaklaşımlarla aile. Eğitim Yayınevi.

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	The Concept of Family and Types of Families		
2	The Concept of the Child and the Social Value of the Child and Family		
3	Healthy Family: Protective and Strengthening Approaches		
4	Çocuk Gelişimine Temel Yaklaşımlar I (Bilişsel ve Sosyal)		
5	Fundamental Approaches to Child Development II (Moral and Personality Development)		
6	Parenting Styles and Their Effects on Children		
7	Family Communication and Interaction		
8	Gender Roles, Family, and Children		
9	Midterm Exam Week		
10	Children with Special Needs and Children at Risk		
11	Marriage, Marriage Preparation, and Family Life		
12	Family and Children in the Digital Age: Media and the Internet		
13	Legal Literacy: Family, Children, and Working Life		
14	Family Economics and Financial Literacy		
15	Contemporary Family Issues and Family Counseling		
16	End-of-Term Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Can explain the fundamental concepts related to family and children.
C02	Can analyze family types and transformations in family structures.
C03	Can evaluate the relationship between parenting styles and child development.
C04	Can discuss the effects of family communication and gender roles on family structure.
C05	Can define basic approaches for children with special needs and those at risk.
C06	Develops awareness of fundamental legal rights related to family, children, and working life.
C07	Can make informed evaluations regarding family economics and financial literacy.
C08	Can critically interpret current issues related to family and children in the digital age.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	15	3	45
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			77
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
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	P01	P02	P03	P04	P05	P06	P07
All	2	2	1	4	3	1	4
C01	2	2	1	4	3	1	5
C02	3	2	1	4	4	1	5
C03	3	3	1	4	3	1	5
C04	3	2	1	4	4	1	5
C05	3	2	1	4	3	1	5
C06	3	3	1	4	4	1	5
C07	3	2	1	4	3	1	5
C08	3	2	1	4	3	1	5



Turkish-German University
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Department of Civil Engineering (German)

ÜSDDSD123 Digital Process Transformation					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ÜSDDSD123	Digital Process Transformation	2	2	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of the course is to develop students' skills in designing, automating, and measuring the digital transformation of organizational processes using low-code/no-code approaches—that is, without requiring traditional programming knowledge. By using Microsoft Power Platform applications in an integrated manner, students are expected to gain hands-on experience in data management, workflow automation, reporting, and the design of AI-powered assistants, all without the need for programming skills.

Teaching Methods and Techniques:

The course covers the fundamentals of Microsoft process management, as well as Power Apps, Power Automate, Power BI, and Copilot Studio.

Prerequisites and co-requisites:

Course Coordinator:

Prof. Dr. Müge KLEIN

Name of Lecturers:

Assistants:

Recommended or Required Reading

Resources

Shrivastava A., (2024), Learning Microsoft Power Apps: Building Business Applications with Low-Code Technology, Weston M., Bárcena Martín E., (2023) Learn Microsoft P
-
Slaytlar dersten önce paylaşılacaktır.
Dönem içerisinde 2 tane ödev verilecektir.
Yarıyl Sonu Sınavı

Course Category

Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 30	Science	:
Engineering Design	:	Health	:
Social Sciences	: 50	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction, Fundamentals of Digital Process Transformation		
2	Introduction to Power Platform and the Low-Code / No-Code (LCNC) Approach		
3	Introduction to Power Apps and Key Concepts		
4	SharePoint and Data Management		
5	Power Apps Form Design and Formulas, Assignment		
6	Introduction to Power Automate		
7	Basic Flows in Power Automate		
8	Advanced Power Automate and Approval Processes		
9	Introduction to Power BI and Data Visualization		
10	Power BI DAX and Data Modeling, Assignment		
11	Power BI Service and Sharing		
12	Introduction to Copilot Studio and Bot Fundamentals		
13	Advanced Copilot Studio and Integrations		
14	Integrated Power Platform Solutions – The Future of LCNC		
15	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students explain and assess the digital transformation of business processes and the role of low-code/no-code approaches in this transformation.
C02	Students define the components of the Microsoft Power Platform (Power Apps, Power Automate, Power BI, Copilot Studio) and relate them to their areas of use.
C03	Students design workflows and process automations using Power Apps and Power Automate without any programming knowledge.
C04	Students create data analyses, reports, and performance indicators using Power BI.
C05	Students develop AI-powered digital assistant or chatbot solutions using Copilot Studio and integrate them into processes.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%40

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	13	10	130
Assignments	2	4	8
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
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							
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bbb							
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	P01	P02	P03	P04	P05	P06	P07
All	3	1	2	3	2	4	5



Turkish-German University

Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG111 Academic English					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDENG111	Academic English	3	3	4

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to help participants improve their current English proficiency and develop their academic English skills. It also aims to help participants express themselves effectively in both oral and written academic contexts, equipping them with the knowledge and skills necessary to effectively conduct their academic studies in English.

Teaching Methods and Techniques:

The scope of the course consists of thematically divided content that covers the English listening, reading and speaking skills required for academic goals.

Prerequisites and co-requisites:**Course Coordinator:****Name of Lecturers:**

Lecturer Kübra Erdem

Assistants:**Recommended or Required Reading****Resources**

Compiled course material prepared by the course instructor
Compiled course material prepared by the course instructor

1 ödev yapılacaktır.
2 kısa süreli sınav ve 1 final sınavı yapılacaktır.

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to course - What is academic English?		
2	Importance of listening and note-taking in academic contexts; Basic principles of effective note-taking		
3	The Listening Process: The stages of listening; Identifying listening barriers and challenges		
4	The Cornell Method; Outlining and Mapping Techniques: Structure and Organization; When & Why should each be used?		
5	Academic Listening Strategies: Techniques for listening in lectures and seminars; Understanding complex academic ideas		
6	Quiz 1: Listening		
7	Essential Reading Skills and Strategies for Academic Success - Part 1; Reading for Gist and Key Ideas: Previewing and Predicting		
8	Essential Reading Skills and Strategies for Academic Success - Part 2; Reading for Detail and Structure: Scanning for Details		
9	Midterm Week		
10	Essential Reading Skills and Strategies for Academic Success - Part 3; Advanced Reading: Vocabulary and Critical Thinking; 1		
11	Quiz 2: Reading		
12	Essential Speaking Skills for Academic Success: structure, vocabulary, fluency		
13	Organizing and Extending Oral Responses; Discourse Markers & Academic Vocabulary, Fluency under Time Pressure		
14	Academic Discussion & Interactive Speaking Skills: agreeing/disagreeing, building flow, pronunciation		
15	A final review of tips for applying language skills in real-life academic settings; Taking final reflections and feedback from students		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students' awareness of academic English will increase.
C02	Students will be able to analyse different types of written and spoken discourse that they encounter in their academic coursework.
C03	Students will be able to enhance their functional use of language.
C04	Students will be able to examine the information that they receive critically.
C05	Students will develop their academic vocabulary repertoire.
C06	Students will be able to structure their work and deliver findings in accordance with the conventions of academic English.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	2	%20
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	11	6	66
Assignments	1	2	2
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			112
ECTS Credit of the Course			4

Contribution of Learning Outcomes to Programme Outcomes		
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bbb		
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	P01	P05
C01	1	3
C02	2	3
C03	2	3
C04	3	3
C05	2	3
C06	2	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG120 Effective Communication Skills In English					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDENG120	Effective Communication Skills In English	3	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of the course is to provide students with English knowledge and practice. In this context, while the necessary grammar and vocabulary structures are taught, it is aimed for students to be able to use these structures effectively in written and oral communication.

Teaching Methods and Techniques:

It includes thematically divided content that covers speaking and writing skills, English vocabulary, effective usage and usage differences.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer İlknur Karadağlı Dirik

Name of Lecturers:

Lecturer Vahap Sümer Özsüer

Assistants:**Recommended or Required Reading****Resources**

Hot Topics 1, A Culturally Specific Discussion Book, Compass Publishing Instant Discussions, Thomson Heinle
Discussion Starters, Keith S. Folse University of Michigan, 1996
Discussions A-Z Intermediate Students' Book, Adrian Wallwork, Cambridge University Press, 2013
Discussions A-Z Advanced Teachers book A Resource Book of Speaking Activities, Adrian Wallwork, Cambridge University Press, 1997
Discussion Starters- University of Michigan Discussions A-Z Intermediate Students' Book, Cambridge University Press Discussions A-Z Advanced Teachers book A Resource
Worksheets
vize vs final

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to course - What is special about conversational English? Formal and informal register		
2	Important and frequently used nouns in conversational English		
3	In-depth discussion on how conversational English differs from other forms of English Important verbs that are frequently u		
4	Critical thinking: Identifying speakers' points of view Taking part in a discussion in different contexts		
5	Theme: Technology of the future		
6	Key adjectives and adverbs in conversational English Data Commentary (1)		
7	General Revision		
8	Midterm exam		
9	Ellipsis		
10	Theme: Culture and communication Words with several meanings		
11	Making inferences Critical thinking: Analysing an issue from all sides; discussing pros and cons.		
12	Theme: People and society Common prepositional phrases in conversational English		
13	Word combinations (1) Metaphors and idioms, proverbs		
14	Theme: Work and business Word combinations (2)		
15	Theme: Living longer Discussion of learning outcomes & Q-A session.		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will improve their awareness level of spoken English.
C02	Students will be able to analyze different types of speech.
C03	Students will be able to use English functionally effectively.
C04	Students will be able to critically examine the information they receive.
C05	Students will improve their English vocabulary.
C06	Students will be able to structure and convey their thoughts in accordance with the use of spoken English.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	12	3	36
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	1	3	3
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes					
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	P03	P04	P06	P07	
C01				2	
C02			2		
C03	4				
C04		2		3	
C05				4	
C06	4				



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG121 Business English					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDENG121	Business English	3	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to teach some basic terms related to Business English and to ensure that students gain the necessary knowledge and skills to use English in business world. The course is made up of activities where four skills are integrated in fields, which English is used in business settings (presentations, e-mail writing, human resources, finance, marketing, etc.).

Teaching Methods and Techniques:

The course is made up of activities where four skills are integrated in fields, which English is used in business settings (presentations, e-mail writing, human resources, finance, marketing, etc.).

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer Yasemin AKSOYALP

Name of Lecturers:

Lecturer İknur KARADAĞLI DİRİK

Assistants:**Recommended or Required Reading****Resources**

Helm, S. & Utteridge, R. (2010). Market Leader, Human Resources. Pearson Longman. ,Helm, S. (2010). Market Leader, Finance. Pearson Longman O'Driscoll, N. (2010). Talbot, F. (2009). How to write effective Business English. Kogan Page.

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 100	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	General introduction to the course	In search for the ideal job	
2	Everyday Business Writing		
3	Rules about writing business emails.		
4	Punctuation and grammar tips		
5	Communicating in Business I	How to introduce yourself-Business Etiquette	
6	Communicating in Business	Making Appointments	
7	Communicating in Business III	Using a Diplomatic Language	
8	Midterm Exam		
9	Intercultural Communication		
10	Interviewing I		
11	Interviewing II		
12	Coping with unhealthy working environment		
13	Business Negotiations		
14	Delivering Presentations		
15	Customer relations		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will learn some basic terms about Business English.
C02	Students will improve their presentation skills.
C03	Students will learn about various writing types used in business settings.
C04	Students will be able to read passages about finance, human resources, marketing, and intercultural communication.
C05	Students will be able to do listening activities about finance, human resources, marketing, and intercultural communication.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%40
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	10	4	40
Assignments	1	1	1
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes		
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	P03	P07
C01		1
C02	1	
C03	1	
C04		1
C05		1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG122 Grammatical Structures In English Academic Writings					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ÜSDENG122	Grammatical Structures In English Academic Writings	2	2	3

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

In this course, it is aimed that students can refine their language skills, understand and apply complex grammatical structures in different situations.

Teaching Methods and Techniques:

Each lesson focuses on a specific area of English grammar.

Prerequisites and co-requisites:

Course Coordinator:

Lecturer İknur KARADAĞLI DİRİK

Name of Lecturers:

Lecturer Burçin BAYTUR

Assistants:

Recommended or Required Reading

Resources

Hewings, M. (2013). Grammar in Use: A self-study reference and practice book for advanced learners of English. Cambridge: Cambridge University Press.,Foley, M. & Hall, M. & Hall, D. (2003). Advanced Learner's Grammar: A self-study reference & practice book. Longman: Pearson Education.
Ders notları
Her hafta işlenen konu ile ilgili ödev verilecektir.
Ara Sınav-Final Sınavı

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the course Past Tenses		
2	Past to Present Tenses		Çalışma kağıtları
3	Negation		
4	Passive-Causative		
5	Conditionals		
6	The Subjunctive and Unreal Uses of Past Forms		
7	Nouns		
8	Midterm Exam		
9	Modal Verbs I		
10	Modal Verbs II		
11	Relative Clauses I		
12	Relative Clauses II		
13	Participle and Infinitive Phrases		
14	Participle and Infinitive Phrases		
15	General Revision		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Students will be able to understand and use complex grammatical structures with ease.
C02	Students will develop a heightened awareness of the intricacies of language through a better understanding of grammar principles.
C03	Students will develop the ability to apply grammar concepts in a variety of real life contexts, such as academic writing, and everyday conversation.
C04	Students will improve their language precision to communicate more accurately, and effectively both in written and spoken forms.
C05	Students will become aware of how grammar can influence the meaning and tone of communication in a situational context.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	3	36
Assignments	7	2	14
Presentation	0	0	0
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes							
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	P01	P02	P03	P04	P05	P06	P07
All	1	1	1	1	1	1	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG123 Reading and Speaking in English					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	ÜSDENG123	Reading and Speaking in English	2	2	3

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

• reading a passage/listening to a lecture about the same topic and identifying the main points of both texts to respond to them orally • providing topics of discussion in a variety of fields with a particular focus on art, social science and scientific innovations • facilitating students' ability to comprehend both written and audio-visual materials • encouraging students to improve ideas to eventually produce an oral response and to show expository skills in the oral production

Teaching Methods and Techniques:

Integrated reading and speaking activities The format of the course includes teacher-guided lectures, followed by learner-centered activities that will be completed in class in group formations.

Prerequisites and co-requisites:

Course Coordinator:

Lecturer Yasemin Aksoyalp

Name of Lecturers:

Lecturer Nuray GÜLEÇ

Assistants:

Recommended or Required Reading

Resources

Worksheets, Coursepack prepared by course instructor
It includes the course pack prepared by the course instructor.
Çalışma Kağıtları Haftalık olarak verilecek dokümanlar
Haftalık olarak verilecektir.
5

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the course: Course and syllabus review		
2	General Speaking Tips & Tense Revision		
3	Reading & Speaking about Bilingualism		
4	Reading & Speaking about Digital Age		
5	Reading & Speaking about Sleeping and Dreaming		
6	Reading & Speaking about Artificial Intelligence		
7	Reading & Speaking about Developing 21st Century Skills		
8	Midterm Exam		
9	Reading & Speaking about English Idioms		
10	Prepositional Phrases		
11	Speaking Practice: Describing Personal Experience		
12	Student Practice: Expressing Preference in a Paired-Choice Task		
13	Oral Exam		
14	Oral Exam		
15	General Revision		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Students will acquire the ability to identify the main points of texts after reading a passage and listening to an audiovisual text on the same topic, and respond to them orally.
C02	Students will gain knowledge about discussion topics in various fields, with a particular focus on art, social sciences, and scientific innovations.
C03	Students will improve their ability to comprehend both written and audiovisual texts.
C04	Students will be able to develop their ideas to demonstrate explanatory skills in an oral exam.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%15
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	2	%25
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	0	0	0
Assignments	11	2	22
Presentation	3	10	30
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes			
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	P03	P05	P07
C01	1	1	1
C02	1	1	1
C03	1	1	1
C04	1	1	1



ÜSDENG124 The Reflections of Literary Movements on Cinema					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDENG124	The Reflections of Literary Movements on Cinema	3	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

It is aimed to comprehend how the process of transferring English literary movements and writing to cinema by explaining with examples.

Teaching Methods and Techniques:

It is aimed to evaluate the adaptation of English literary movements and literary works and texts, to cinema, which is a visual medium. It is aimed to analyze how a literary work is reflected on the screen after it is transformed into a scenario with a visual language and to what extent the changes that may be encountered during this transfer are faithful to the literary work.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer Yasemin Aksoyalp

Name of Lecturers:

Lecturer Gökçe ŞALTAN

Assistants:**Recommended or Required Reading****Resources**

Cartmell, Deborah. A Companion to Literature, Film, and Adaptation. Blackwell Publishing. A John Wiley & Sons, Ltd., Publication.
Diniejkó, Andrzej. Introduction to the Study of Literature and Film in English.

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 100	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Course Introduction	Introducing Content: The influence of adaptation and literature on each other	Explaining the similarities
2	Basic Concepts in Adaptation Theory: Transformations from text to screen	What is Adaptation Theory?	Readings Selected
3	Anglo Saxon Period (449-1069) The Acceptance of Christianity	Analysis and characteristics of works from the Anglo Saxon	
4	Medieval Period (1069-1450) Analysis and characteristics of medieval plays/Works?	Everyman, The Name of the Rose, The	
5	Renaissance Period (1485-1550) Analysis of the characteristics of Renaissance plays/Works	Thomas More - A Man for All Tin	
6	Renaissance Period (1485-1550)		
7	General Review before Midterm Exam	Week 7: Shakespeare and the Elizabethan (Golden) Age (1558-1620)?	Analysis of the
8	Midterm Exam		
9	Restoration and Neoclassical Period (1660-1785) (Rationalism)?	Analysis of the characteristics of Neoclassical and Restorat	
10	Romantic and Gothic Period (1785-1830) (Industrial Revolution)		
11	Victorian Period (1830-1903) (Social Class Segregation)	Characteristics of Victorian literary works	Charles Dickens - Oliver T.
12	Adaptations of the Modernism Period (1903-1940) (Information Flow, Pessimism)	Joseph Conrad - Heart of Darkness (1895)	
13	Post-Modernism Period (1940-1980) (Carpe Diem)	Samuel Beckett - Waiting for Godot (1954)	William Golding - Lord of the I
14	Post-Modernist Period (1940-1980) (Carpe Diem)		
15	General Revision before Final Exam		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	In this course, students will have knowledge about world literature and works.
C02	In this course, students will be able to apply adaptation processes from literary works to the screenplay stage.
C03	Students can learn about literary adaptations in this course.
C04	Learning Competency: In this course, students will learn about adaptations of literary works.
C05	In this course, students will be able to manage the analysis process of works adapted from literature to cinema.
C06	Students will be able to work independently and take responsibility.
C07	Students will be able to work independently and take responsibility in the process of scripting and adapting a literary work into a film.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	3	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	3	%20
Laboratory	0	%0
Final examination	1	%40
Total		%80

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	9	2	18
Assignments	3	5	15
Presentation	1	5	5
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes		
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	P01	P05
C01	4	5
C02	1	1
C03	4	5
C04	2	4
C05	4	4
C06	1	3
C07	1	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG125 Listening Comprehension Skills in English					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDENG125	Listening Comprehension Skills in English	3	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The course objectives are as follows: - To help students improve their academic listening skills in various contexts (lectures, discussions, multimedia). - To introduce and practice different note-taking methods and strategies (e.g., Cornell Method, Outline Method, Mapping, etc.). - To engage students in interactive listening activities that simulate real-life academic situations. - To encourage critical thinking and synthesis of information through notes. - To prepare students for academic presentations and discussions by strengthening their listening and note-taking capacity.

Teaching Methods and Techniques:

The course combines lectures, practice activities, and practical exercises that will help students develop their skills in attentive listening, retrieving important information, and taking effective notes. Emphasis will be placed on academic listening strategies, developing focused listening habits, and using notes for active learning.

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Lecturer Kübra Erdem

Assistants:

Recommended or Required Reading

Resources

Compiled course material prepared by the course instructor
Compiled course material prepared by the course instructor

2 Ödev yapılacaktır.
2 Kısa Süreli Sınav ve 1 Yarıyıl Sonu Sınavı yapılacaktır.

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the course: Importance of listening and note-taking in academic contexts	Basic principles of effective note-t	
2	The Listening Process: The stages of listening	Identifying listening barriers and challenges	
3	Cornell Method of Note-Taking: Explanation of the Cornell Method	How & When should Cornell Method be used?	
4	Outlining and Mapping Techniques: Structure and Organization	When & Why should each technique be used?	
5	Listening for Main Ideas and Key Details: Distinguishing supporting details	How should key points be highlighted and noted	
6	Note-Taking from Audio/Visual Material: Lectures, Podcasts and Videos	Using technology for taking notes (apps, digital tool	
7	Academic Listening Strategies: Techniques for listening in lectures and seminars	Understanding complex academic ideas	
8	Listening and Note-Taking for Group Work and Discussions: Active listening	Recording key points in group settings (oral pre	
9	Midterm Week		
10	Paraphrasing and Summarizing in Notes: Identifying key concepts without copying verbatim		
11	Effective Listening in Different Academic Genres: Listening for specific purposes	Listening to debates, lectures, podcasts, an	
12	Organizing and Reviewing Notes: Color coding and grouping related topics	Revising notes after class for retention	
13	Practicing Listening and Note-Taking for Exams: Effective notes	Review and summarization techniques for note preparation	
14	Technology in Note-Taking and Listening: Exploring digital tools for note-taking (e.g., Evernote, OneNote)	Integrating tech	
15	Final Review and Application: Final reflections and feedback from students	Tips for applying skills in real-life academic settir	

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to enhance their listening comprehension in both academic and everyday contexts.
C02	Students will be able to apply effective note-taking strategies during lectures, discussions, and multimedia presentations.
C03	Students will be able to identify main ideas, supporting details, and key concepts in spoken texts.
C04	Students will be able to organize and summarize lecture content clearly using various note-taking methods.
C05	Students will be able to utilize their notes effectively for studying, revising, and performing academically.
C06	Students will be able to adapt listening and note-taking strategies based on content type (lectures, debates, podcasts, interviews, etc.) and their level of proficiency.
C07	Students will be able to develop active listening skills to better engage in academic discussions and group work.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%50

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	3	42
Assignments	2	1	2
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			90
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes		
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	P01	P05
C01	1	3
C02	1	3
C03	2	3
C04	3	2
C05	3	2
C06	2	2
C07	3	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG126 Selections from English Literature					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	ÜSDENG126	Selections from English Literature	3	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

English

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

It is aimed to gain general culture and basic knowledge about English literary movements and English literature.

Teaching Methods and Techniques:

It is aimed to evaluate English literary movements and literary works and texts. The basics of English Literature, the beginning, the definition of literature, starting from the pre-millennium, the Anglo Saxon era, the Middle Ages, the Renaissance, the Neoclassical, Romantic, Gothic, Modern, Postmodern period, literary periods, movements, important literary figures, biographies, styles and some basic works are aimed to be examined.

Prerequisites and co-requisites:**Course Coordinator:**

Lecturer İlknur Karadağlı Dirik

Name of Lecturers:

Lecturer Gökçe Şaltan

Assistants:**Recommended or Required Reading**

Resources	
	An Oxford Companion to English Literature – Oxford University Press, A Short History of English Literature – Andrew Sanders, The Norton Anthology of English Literature, The Norton Anthology of English Literature, Volume II.
	An Outline of English Literature, G.C. Thornley, Longman Books
	İngiliz Edebiyatı Tarihi – Mina Urgan
	A Cambridge Companion to English Literature – Cambridge University Press
	A Short History of English Literature – Andrew Sanders
	An Oxford Companion to English Literature – Oxford University Press

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

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Course Introduction What is Literature?		
2	The history of English Literature Presentation distribution/sharing according to weeks		
3	Anglo Saxon Periyod (449-1069) The Acceptance of Christianity Analysis of works from the Anglo Saxon Period? What are t		
4	Medieval Period (1069-1450) (Magna Carta, Chivalry, Feodalism, Crusades) Analysis of medieval plays/Works What are the		
5	Renaissance Period (1485-1550) (Humanism, Rebirth) Analysis of the characteristics of Renaissance plays/Works What are		
6	Shakespeare and the Elizabethan (Golden) Age (1558-1620) Analysis of the characteristics of Shakespeare plays/works Wh		
7	General Review before Midterm Exam		
8	Midterm Exam Week		
9	Restoration and Neoclassical Period (1660-1785) (Rationalism, Baby Boom, Comedy of Manners) Analysis of the characteri		
10	Romantic and Gothic Period (1785-1830) (Industrial Revolution, Individualism) Characteristics of Romantic and Gothic liter		
11	Victorian Period (1830-1903) (Social Class Segregation, Realism, Moral Didacticism) Characteristics of Victorian literary wor		
12	Modernism Period (1903-1940) (Absurdism, Information Flow, Pessimism) Analysis of literary works of the Modernism Peric		
13	Post-Modernism Period (1940-1980) (Intertextuality, Carpe Diem) Analysis of Post Modernism Period works What are the c		
14	General Review before the Final Exam		
15	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will have basic knowledge about English literature and its works.
C02	Students will learn the writing process of literary works.
C03	Students will be able to analyze texts of English literature.
C04	Students will learn the works and genres of literature.
C05	Students will be able to comprehend English culture and history.
C06	Students will be able to understand English social and economic history through the analysis of literary works.
C07	Students will have understood English Literature works.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic facto
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	2	%20
Laboratory	0	%0
Final examination	0	%0
Total		%20

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	3	42
Assignments	2	4	8
Presentation	2	4	8
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	1	2	2
Final examination	1	2	2
Total Work Load			90
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes	
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	P05
All	1
C01	1
C02	1
C03	1
C04	1
C05	1
C06	1
C07	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDENG127 Creative Writing in English					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ÜSDENG127	Creative Writing in English	2	2	3

Mode of Delivery:
Face to Face

Language of Instruction:
English

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
This course aims to enhance students' English language proficiency through the integrated practice of reading and writing with a focus on creativity. Students will explore a variety of literary and non-literary texts, develop their expressive skills, and learn how to use language imaginatively. Emphasis will be placed on finding one's own writing voice, experimenting with style, and producing creative works such as short stories, poems, and reflective essays. Rather than academic writing, the course highlights creativity, linguistic play, and self-expression.

Teaching Methods and Techniques:
This course is made up of activities where students will be directed and supported to write creatively based upon the samples they will read.

Prerequisites and co-requisites:

Course Coordinator:
Lecturer İlknur Karadağlı Dirik

Name of Lecturers:
Lecturer İlknur Karadağlı Dirik

Assistants:

Recommended or Required Reading	
Resources	<ul style="list-style-type: none"> • Anderson, L. (2015). Creative Writing: A Workbook with Readings. Routledge.,• Morley, D. (2007). The Cambridge Introduction to Creative Writing. • Anderson, L. (2015). Creative Writing: A Workbook with Readings. Routledge. • Morley, D. (2007). The Cambridge Introduction to Creative Writing. Cambridge University Press.

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

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	Introduction to Creative Writing	Discussing difference between academic and creative writing. Reading short creative texts	
2	Finding Your Voice	Reading personal essays Focusing on tone and voice	Writing Output/Assignment: Write a personal piece:
3	Imagery & Sensory Writing	Reading descriptive poems and passages rich in imagery.	Writing Output/Assignment: Write a sh
4	Character Creation	Reading character-focused stories	Writing Output/Assignment: Write a character sketch.
5	Setting & Atmosphere	Reading setting-based excerpts	Writing Output/Assignment: Write a short scene focusing on setting a
6	Point of View & Perspective	Reading short stories from different perspectives.	Writing Output/Assignment: Rewrite a scene f
7	Dialogue & Voice	Reading short play dialogues. Practicing authentic speech in writing.	Writing Output/Assignment: Write a t
8	Mid-term Exams		
9	Plot & Structure	Reading flash fiction and discussing story structure.	Writing Output/Assignment: Write a 500-word short sto
10	Poetic Techniques	Reading accessible modern poems	Writing Output/Assignment: Write a short poem or prose poem.
11	Metaphor, Symbol, and Theme	Reading symbolic stories	Writing Output/Assignment: Add symbolic meaning to a simple narr
12	Creative Nonfiction	Reading reflective travel or memoir essays	Writing Output/Assignment: Write a reflective essay: "A jour
13	Rewriting & Peer Feedback	Peer feedback and in-class workshops.	Writing Output/Assignment: Revise a previous piece.
14	Talking about lipograms.	Reading samples of lipogramatic language	Writing Output/Assignment: Creating a lipogramatic piec
15	General revision of the semester		

Course Learning Outcomes	
No	Learning Outcomes
C01	Students will be able to show increased lexical and grammatical range in creative writing.
C02	Students will be able to display an understanding of tone, style, and narrative perspective
C03	Students will be able to produce a portfolio of creative writing pieces demonstrating originality and coherence
C04	Students will be able to engage in collaborative writing and peer feedback activities
C05	Students will be able to read and interpret short creative texts critically and imaginatively

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%50

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	11	2	22
Assignments	5	5	25
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			90
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes	
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	P03
C04	3
C05	3



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDGNÇ202 Voluntary Works					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ÜSDGNÇ202	Voluntary Works	3	2	4

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The main aim of the course is to strengthen the ties between the university and the society by using the knowledge, skills and experience students have acquired throughout their educational life; to ensure that they gain sensitivity about various issues and problems, especially vulnerable groups; to enable students to take part in volunteer work for a semester in a volunteering area of their choice within a plan to be prepared in advance and to share their results by making presentations; to organize seminars with people to be invited from various public institutions, non-governmental organizations, associations and foundations, agencies for field-oriented application examples.

Teaching Methods and Techniques:

Within the scope of this course, students are introduced to the concepts of management and organization, the concept of volunteering and basic volunteering areas. Students are expected to be active in stages such as project development related to volunteer work and participation in volunteer work in the field.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Ayça YILMAZ DENİZ

Name of Lecturers:

Asist Prof.Dr. Ayça YILMAZ DENİZ

Assistants:

Research Assist. Havva Rabia Altundal

Recommended or Required Reading

Resources Şentürk, M. (2022), Gönüllülük ve gönüllülerle birlikte çalışmak. İstanbul Üniversitesi Yayınları. DOI :10.26650/B/SS49.2022.006

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	: 100

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Basic Concepts (Volunteering, Donation, Social Responsibility, Social Impact, Social Enterprise, Awareness, Sustainability et		
2	Volunteer organisation and volunteer management- Why do civil society organisations need volunteers?- Voluntee		
3	Volunteer organisation and volunteer management- Volunteer calendar, time tracking and accountability- What are		
4	Values and Principles in Voluntary WorkThe concept of vulnerable groups / disadvantaged groups, fundamental rights and		
5	Practice Examples / Seminar-1		
6	Practice Examples / Seminar-2		
7	Practice Examples / Seminar-3		
8	Midterm Exam		
9	Practice Examples / Seminar-4		
10	Practice Examples / Seminar-5		
11	Practice Examples / Seminar-6		
12	Practice Examples / Seminar-7		
13	Presentation 1		
14	Presentation 2		
15	Presentation 3		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students develop a theoretical background about volunteering.
C02	Students have an idea about ethical, moral, religious, traditional values and principles in volunteer work.
C03	Students can relate volunteering to problems in society such as risk groups and immigrants.
C04	Students have knowledge about participation in volunteer work in public institutions, local governments and non-governmental organizations.
C05	Students practice and develop experience in volunteering.
C06	Students develop project development and implementation skills.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	1	%60
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	1	14
Hours for off-the-c.r.stud	14	1	14
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	14	2	28
Laboratory	0	0	0
Project	13	4	52
Final examination	1	4	4
Total Work Load			112
ECTS Credit of the Course			4

Contribution of Learning Outcomes to Programme Outcomes

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	P02	P03	P04	P05	P06	P07
C01						5
C02						5
C03	3				4	5
C04		4				4
C05		5	4			
C06	2	4	4	5	3	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDINF404 Next Generation Entrepreneurship					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDINF404	Next Generation Entrepreneurship	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of the "New Generation Entrepreneurship" course is to teach students the basic principles of entrepreneurship, to enable them to develop their creative thinking, leadership and business management skills and to prepare them for sustainable business development processes.

Teaching Methods and Techniques:

Course content includes the basics of entrepreneurship, business idea development, business plan creation, financial management, team management, marketing and sales strategies, risk management and sustainable entrepreneurship. Students gain practical experience through projects, assignments and case studies to translate theoretical knowledge into practice.

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Lecturer Berkant BOSTAN

Assistants:

Recommended or Required Reading

Resources "Zero to One: Notes on Startups, or How to Build the Future" - Peter Thiel with Blake Masters,"The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation

Course Category

Mathematics and Basic Sciences : 20	Education : 20
Engineering : 10	Science : 10
Engineering Design : 20	Health :
Social Sciences : 20	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Fundamentals of Entrepreneurship		
2	Entrepreneurship Types and Characteristics		
3	Business Idea Development and Market Research		
4	Business Idea Development and Market Research		
5	Preparing a Business Plan		
6	Business Plan Preparation and Financial Projections		
7	Managing Resources and Financing		
8	Midterm		
9	Management of the Entrepreneurial Team		
10	Management of the Entrepreneurial Team		
11	Marketing Strategies		
12	Sales Strategies		
13	Risk Management		
14	Sustainable Entrepreneurship		
15	Final Exam		

Course Learning Outcomes

No Learning Outcomes

- C01 Entrepreneurship Knowledge: Students will understand the basic principles of entrepreneurship, recognize different types of entrepreneurship, and have information about the characteristics of suc
- C02 Ability to Create a Business Plan: Students will be able to develop their own business ideas, conduct comprehensive market research, create business models by performing competitive analysis, an
- C03 Teamwork and Leadership Skills: Students will gain skills in managing and leading a team of entrepreneurs, develop effective communication and problem-solving skills, and gain sensitivity to busin

Program Learning Outcomes

No Learning Outcome

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%50

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	1	66	66
Assignments	10	3	30
Presentation	1	10	10
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
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
All	5	5	4	1	5	3	1
C01	5	5	4	1		3	1
C02	5	5	4	1		3	1
C03	5	5	4		5	3	1



ÜSDINF406 Digital Innovation Management					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDINF406	Digital Innovation Management	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to provide students with competence in strategic thinking, leadership skills and adapting to technological trends by explaining the basic principles of digital innovation.

Teaching Methods and Techniques:

The course covers the basic concepts, strategies and management of digital innovation, and also provides students with the opportunity to develop their skills in managing innovative projects in the digital world by explaining the use of technologies such as artificial intelligence, blockchain, IoT. It also focuses on issues such as adapting to changes in the business world, leadership and successful management of projects.

Prerequisites and co-requisites:

Course Coordinator:

Name of Lecturers:

Lecturer Berkant BOSTAN

Assistants:

Recommended or Required Reading

Resources "The Innovator's Dilemma" - Clayton M. Christensen,"Digital Innovation: The Next Big Thing" - Alex Jimenez ve Matt Vinyard,"The Lean Startup" - Eric Ries

Course Category

Mathematics and Basic Sciences : 20	Education : 20
Engineering : 10	Science : 10
Engineering Design : 20	Health :
Social Sciences : 20	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Fundamentals of Digital Innovation		
2	Technological Developments and Innovation		
3	Digital Innovation Process		
4	Digital Leadership and Innovation		
5	Digital Strategy Development and Implementation		
6	Digital Strategy Development and Implementation		
7	Innovation Ecosystems and Networks		
8	Midterm		
9	Collaboration and Entrepreneurship with Startups		
10	Artificial Intelligence and Machine Learning		
11	Blockchain Technology		
12	Internet of Things (IoT) and Applications		
13	Change Management Principles		
14	Digital Transformation and Organizational Change		
15	Final Exam		

Course Learning Outcomes

No Learning Outcomes

- C01 Digital Innovation Strategies: Students will have the knowledge and skills needed to understand the strategic foundations of digital innovation and apply it in the business world.
- C02 Ability to Adapt to Technological Trends: The course will enable students to adapt to the digital environment of the future by understanding technological trends such as artificial intelligence, block
- C03 Competency in Managing Innovative Projects: Students will develop their skills in successfully managing digital innovation projects and implementing these projects effectively through group studies

Program Learning Outcomes

No Learning Outcome

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic facto
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%50

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	1	66	66
Assignments	10	4	40
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P06	P07	
All	5	5	4	3	1	
C01	5	5	4	3	1	
C02	5	5	4	3	1	
C03	5	5	4	3	1	



ÜSDINF408 Introduction to Biomedical Sciences					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDINF408	Introduction to Biomedical Sciences	4	3	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The basic principle of the Introduction to Biomedical Sciences course is to explain the broad scope and basic principles of biomedical sciences and how they contribute to the applications of medicine and health technology by combining the applications of biology, chemistry, and engineering.

Teaching Methods and Techniques:

The main topics in the Introduction to Biomedical Sciences course are as follows: Basic Biology and Chemistry Knowledge Biomedical Devices and Technologies Biomedical Data Analysis Biomedical Research Methods Medical Ethics and Law Current Developments and Future Perspectives in Biomedical Sciences

Prerequisites and co-requisites:**Course Coordinator:****Name of Lecturers:**

Prof. Dr. Alper GÖKÇE

Assistants:**Recommended or Required Reading**

Resources "Biomedical Engineering: Bridging Medicine and Technology" - W. Mark Saltzman,"Introduction to Biomedical Engineering" - John Enderle, Joseph Bronzino,"Biostatistics:

Course Category			
Mathematics and Basic Sciences	: 20	Education	: 10
Engineering	: 30	Science	: 10
Engineering Design	: 0	Health	: 30
Social Sciences	: 0	Field	: 0

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Biomedical Sciences		
2	Introduction to Biomedical Sciences		
3	Basic Biology and Chemistry Knowledge		
4	Basic Biology and Chemistry Knowledge		
5	Biomedical Devices and Technologies		
6	Biomedical Devices and Technologies		
7	Biomedical Data Analysis		
8	Midterm		
9	Biomedical Data Analysis		
10	Biomedical Research Methods		
11	Medical Ethics and Law		
12	Medical Ethics and Law		
13	Current Developments and Future Perspectives in Biomedical Sciences		
14	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Understanding the basic principles of biomedical sciences.
C02	Applying basic biology, chemistry and engineering concepts in a biomedical context.
C03	Applying biomedical data collection methods.
C04	Achieving scientific results using data analysis and statistical methods.
C05	Ability to design biomedical research. Ability to conduct research in accordance with ethical rules.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%50

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	1	66	66
Assignments	10	4	40
Presentation	0	0	0
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes						
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bbb						
	P01	P02	P03	P06	P07	
All	5	5	4	3	1	
C01	5	5	4	3	1	
C02	5	5	4	3	1	
C03	5	5	4	3	1	
C04	5	5	4	3	1	
C05	5	5	4	3	1	



ÜSDING045 Medical Device Regulations and Processes					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ÜSDING045	Medical Device Regulations and Processes	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The Medical Devices, Regulatory Frameworks, and Processes course aims to provide students with comprehensive knowledge about the regulations and processes prior to the design, production, and market release of medical devices. This course targets helping students understand how medical devices are regulated according to safety, efficacy, and quality standards, as well as the approval processes and legal requirements for medical devices. Students will learn about the regulatory oversight and certification stages of medical devices, as well as the process of complying with international regulations, thus gaining an understanding of their professional responsibilities in this field. The course includes practical examples and case studies related to the legal processes and regulatory mechanisms for medical devices, in addition to theoretical knowledge.

Teaching Methods and Techniques:

The Medical Devices, Regulatory Frameworks, and Processes course includes the legal regulations prior to the design, production, and market release of medical devices. This course encompasses how medical devices are regulated and approved in accordance with safety, efficacy, and quality standards. It also covers the clinical testing processes, certification stages, and the procedures for compliance with international regulations. Students will learn about the legal regulations in regions such as the European Union and the United States, understand the ethical and legal responsibilities of medical devices, and grasp the professional processes related to the production and use of these devices. In addition to theoretical knowledge, the course includes case studies and practical examples regarding the legal processes of medical devices.

Prerequisites and co-requisites:**Course Coordinator:**

Asist. Prof. Dr. Murat Tümer

Name of Lecturers:

Mühendis Siemens Healthineers Mühendis Ekibi

Assistants:**Recommended or Required Reading**

Resources	Relevant international agreements and documents, Relevant laws, Relevant regulations, Relevant guidelines. Relevant international agreements and documents Relevant laws Relevant regulations Relevant guidelines
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Course Category

Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 20	Science	: 20
Engineering Design	:	Health	: 40
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Medical Imaging Systems.		
2	Magnetic Resonance (MR)		
3	Computed Tomography		
4	Angiography / X-Ray Systems		
5	Nuclear Medicine		
6	Ultrasound		
7	Magnetic Resonance		
8	Midterm Exam		
9	Angiography / X-Ray Systems		
10	Product Management in Medical Devices		
11	Safety in Medical Devices and Medical Device Regulatory Frameworks and Processes		
12	The approach of health and field services from the past to the present in Turkey, transitioning to online services.		
13	Service Operations and Healthcare Sector Dynamics.		
14	Sustainability		
15	General Review		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Students will have fundamental knowledge about medical devices.
C02	Students will gain knowledge about the planning and management of medical devices in a healthcare facility.
C03	Students will gain knowledge about national and EU regulations related to the production and import of medical devices.
C04	Students will gain knowledge about the licensing processes of medical devices.
C05	Students will develop the ability to work effectively in a group.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	1	14
Assignments	0	0	0
Presentation	1	10	10
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes					
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	P02	P03	P04	P06
C01	4		5	
C02	4		5	5
C03	4		5	5
C04		3	4	
C05		3		



Turkish-German University

Faculty of Engineering
Department of Civil Engineering (German)

ÜSDING046 Applications and Process Management in Electrification und Automation					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDING046	Applications und Process Management in Electrification und Automation	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to inform students about power systems, protection technologies, and smart energy management, enabling them to comprehend modern electrification solutions.

Teaching Methods and Techniques:

In this course, students learn the dynamic structure and fundamental components of the electrification and automation sector, gaining both the theoretical foundations and practical applications of electrical systems and energy management. Smart grid technologies, automation systems, and modern energy solutions are covered alongside project management principles, sales processes, and proposal preparation techniques. The course also encompasses engineering practices, installation and commissioning procedures, occupational health and safety standards, quality management principles, and topics related to R&D and innovation management. While students acquire business-oriented skills in operational finance, commercial approaches, and strategy development, they also develop a sense of professional responsibility within the framework of national and international regulations. Through this comprehensive approach, students gain the technical knowledge, managerial skills, and legal awareness necessary for a successful career in the electrification and automation sector.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Murat Tümer

Name of Lecturers:

Mühendis Siemens Healthineers Mühendis Ekibi

Assistants:

Recommended or Required Reading

Resources	Relevant international agreements and documents, Relevant laws, Relevant regulations, Relevant guidelines.
	- International standards related to electrification and automation
	- National regulations for the energy and electricity sector
	- Technical regulations and implementation guidelines
	- Project management and quality standards
	- Occupational safety and environmental protection regulations
	- Central guides and best-practice examples

Course Category

Mathematics and Basic Sciences	: 20	Education	:
Engineering	: 20	Science	: 20
Engineering Design	:	Health	: 40
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Electrification and Automation (General) – Sector Dynamics		
2	Introduction to Electrical Systems and Fundamentals of Energy Systems (I)		
3	Introduction to Electrical Systems and Fundamentals of Energy Systems (II)		
4	Smart Grids, Automation, and Energy Management Systems		
5	Sales Management and Proposal Processes		
6	Project Management and Principles		
7	Engineering Applications		
8	Midterm Exam		
9	Occupational Health, Environment, and Safety		
10	Installation, Commissioning, and Field Service Activities		
11	Fundamental Principles of Quality Management		
12	R&D Management and Innovation		
13	Operational Finance and Commercial Approaches		
14	Strategy and Business Development		
15	Electrification and Automation (General) – Sector Dynamics and Closing		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students gain comprehensive knowledge about the dynamics and fundamental components of the electrification and automation sector.
C02	They understand the theoretical foundations of electrical systems and energy management and can apply them in practical settings.
C03	They acquire up-to-date knowledge about smart grid technologies, automation systems, and modern energy solutions.
C04	They develop business-oriented skills in project management, sales processes, proposal preparation, commercial approaches, and business development.
C05	They cultivate a sense of professional responsibility within the framework of occupational health and safety, quality management, and legal regulations.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes					
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	P02	P03	P04	P06
C01	4		5	
C02	4		5	5
C03	4		5	5
C04		3	4	
C05		3		



ÜSDKAR123 Career Planning					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDKAR123	Career Planning	2	2	2

Mode of Delivery:
Face to Face

Language of Instruction:
Turkish

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
The aim of this course is to enable students to develop diverse perspectives on career planning through participation in guest speaker seminars.

Teaching Methods and Techniques:
It is planned that each week will be covered with videos and activities prepared for each week and guest trainers to be invited from university faculty members, sector professionals, non-governmental organisations and international organisations.

Prerequisites and co-requisites:

Course Coordinator:
Associate Prof.Dr. Enes Bayraklı

Name of Lecturers:
Associate Prof.Dr. Enes Bayraklı

Assistants:
Research Assist. Fatih Demir

Recommended or Required Reading

Resources Career Planning course literature consisting of books, articles, journals, online resources prepared by the Presidential Human Resources Office.,Videos supporting the cou
It will be distributed within the semester.

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

Weekly Detailed Course Contents			
Week	Topics	Study Materials	Materials
1	YOUR CAREER JOURNEY HAS BEGUN, FIRST STOP: CAREER CENTRE	-	-
2	DO YOU KNOW THESE? - INTELLIGENCE AND PERSONALITY	-	-
3	DO YOU KNOW THESE? - PERSONAL CHARACTERISTICS	-	-
4	THE KEY TO MAKING A DIFFERENCE ON YOUR CAREER PATH: SKILLS	-	-
5	WHAT IS A CAREER?	-	-
6	HOW DO I PREPARE FOR MY CAREER?	-	-
7	SECTOR DAYS - CIVIL SOCIETY ORGANISATIONS (NATIONAL)	-	-
8	WEEK OF THE MIDTERM EXAMS	-	-
9	SECTOR DAYS - CIVIL SOCIETY ORGANISATIONS (INTERNATIONAL)	-	-
10	SECTOR DAYS - PUBLIC SECTOR	-	-
11	SECTOR DAYS - PRIVATE SECTOR	-	-
12	SECTOR DAYS - ACADEMY	-	-
13	SECTOR DAYS - ENTREPRENEURSHIP	-	-
14	TALENT GATE - WRITING MY FIRST CV	-	-
15	COURSE EVALUATION	-	-
16	FINAL EXAM	-	-

Course Learning Outcomes	
No	Learning Outcomes
C01	Students will recognize the functions and activities of career centers and gain the competence to utilize the services offered by these centers.
C02	Students will enhance their self-awareness, enabling them to identify their strengths and weaknesses and set personal development goals.
C03	Students will explore various career options and gain the competence to analyze the characteristics and requirements of these options.
C04	Students will develop fine skills to enhance their competencies in effective communication, problem-solving, and collaboration in the professional environment.
C05	Students will explore various activities that can contribute to career planning and analyze their impact on achieving career goals.
C06	Students will recognize the opportunities and benefits of international exchange programs and evaluate their impact on personal and professional development.
C07	Students will recognize the concept of the 'skills gateway' and evaluate its role in career planning and personal development.

Program Learning Outcomes	
No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%40
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	1	2	2
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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	P01	P02	P03	P04	P05	P06	P07
C01	4	4	4	4	4	4	4
C02	4	4	4	4	4	4	4
C03	4	4	4	4	4	4	4
C04	4	4	4	4	4	4	4
C05	4	4	4	4	4	4	4
C06	4	4	4	4	4	4	4
C07	4	4	4	4	4	4	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDMBT369 Artificial Intelligence I in Natural Sciences					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDMBT369	Artificial Intelligence I in Natural Sciences	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

Teaching the combination of natural sciences with artificial intelligence for industry

Teaching Methods and Techniques:

In the 1st semester course, Python and Matlab programming will be taught for artificial intelligence preparations in natural sciences.

Prerequisites and co-requisites:**Course Coordinator:**

Asist Prof.Dr. Dilek GÖKSEL DURU

Name of Lecturers:

Asist Prof.Dr. Dilek Göksel Duru

Assistants:**Recommended or Required Reading****Resources**

Scientific Journal Papers in the field (Nature Sciences)

Course Category

Mathematics and Basic Sciences	: 30	Education	: 40
Engineering	: 20	Science	: 40
Engineering Design	: 10	Health	: 40
Social Sciences	: 40	Field	: 40

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	What is Artificial Intelligence; Common implementation areas		
2	Binary systemComputer coding logic		
3	Learning rules:supervised vs unsupervised routines		
4	Boolean gates & first logic implementaiton:Perceptron		
5	Hebbian learning rule		
6	Unsupervised implementations:SOM		
7	Midterm		
8	AI implementation examples in various areas & industries		
9	Coding samples in MATLAB and/or in Phytion and sample AI implementations		
10	Chatbots & Humanoids & varying robotic implementations		
12	Case studies &Paper discussions		
13	Paper discussions & sample implementations (presentation)		
14	Repeat		

Course Learning Outcomes

No	Learning Outcomes
C01	AI knowledge in nature sciences
C02	Capable of AI in nature sciences readings
C03	Access to simple coding in the field

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factc
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	6	%20
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	1	14
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			61
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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	P01	P02	P03	P04	P05	P06	P07
All	4	4	2	1	5	4	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDMBT371 Entrepreneurship in Natural Sciences					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDMBT371	Entrepreneurship in Natural Sciences	3	3	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

It aims to help students who aim to become entrepreneurs, SMEs and those interested in contemporary business issues. It aims to provide students with the basic knowledge needed in starting and managing a small business. It aims to be able to comprehend the methods of being successful in business life, small businesses and their roles in the economy, the establishment and management of small businesses and their basic functions, problems and solutions.

Teaching Methods and Techniques:

In this course, the conceptual framework of entrepreneurship, its aims and success factors, functions, process, entrepreneurial culture, business, marketing, production, management and organizational planning, creativity and innovation will be discussed. In addition, some current issues in entrepreneurship; Topics such as women's entrepreneurship, social entrepreneurship, family businesses, ethical-social responsibility and entrepreneurship cover the content of the course.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. rer. nat. Orkide Coşkuner Weber

Name of Lecturers:

Prof. Dr. rer. nat. Orkide Coşkuner Weber

Assistants:**Recommended or Required Reading****Resources**

- Güney, S. (2008). Girişimcilik, Temel Kavramlar ve Bazı Güncel Konular. Ankara: Siyasal Kitabevi. Marangoz, M. (2017). Girişimcilik. İstanbul: Beta Yayınları. Küçük, O. (2017). 1 Literature review, Individual Research Entrepreneurship and Basic Concepts of Entrepreneurship Lecture, Discussion
2 Literature review, Individual Research Entrepreneurship process, Entrepreneurship and its history in Turkey and in the World Lecture, Discussion
3 Literature review, Individual Research, Types of Entrepreneurship and Entrepreneurship Culture Lecture, Discussion
4 Literature review, Individual Research Successful Entrepreneurship Stories Lecture, Discussion
5 Literature review, Individual Research Business Idea Resources, Market Research Lecture, Discussion
6 Literature review, Individual Research New business ideas, Venture Capital and Other Capital Finding Methods Lecture, Discussion

Course Category

Mathematics and Basic Sciences : 100	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences :	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Basic Concepts of Entrepreneurship and Entrepreneurship		
2	The process of being an entrepreneur, entrepreneurship and its history in Turkey and in the world		
3	Entrepreneurship types and cultures		
4	Successful Entrepreneurship Stories		
5	Business Idea Resources, Market Research		
6	New business ideas, Venture Capital and Other Fundraising Methods		
7	Startup Process		
8	project presentation, midterm exam		
9	Small Business Management Function and New Management Approaches		
10	Production Function and Planning of Small Businesses		
11	Small Business Marketing Structure, Problems and Marketing Techniques		
12	project		
13	project		
14	project		
15	Project		
16	Final exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Literature review, Individual Research Entrepreneurship and Basic Concepts of Entrepreneurship Lecture, Discussion
C02	The process of being an entrepreneur, entrepreneurship and its history in Turkey and in the world
C03	Types of Entrepreneurship and Entrepreneurship Culture
C04	Gains knowledge of current issues related to entrepreneurship.
C05	Distinguish when a business idea is valuable and innovative.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	2	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%50

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	2	5	10
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	1	2	2
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
C01		4			5		
C02	5						
C03			3				
C04				2			
C05						4	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDMBT392 Quantum Computing					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDMBT392	Quantum Computing	4	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to train students in the fields of quantum technologies and quantum computing.

Teaching Methods and Techniques:

This course covers quantum technologies, quantum computers, and quantum computations.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Orkide Coşkuner Weber

Name of Lecturers:

Prof. Dr. Orkide Coşkuner Weber

Assistants:**Recommended or Required Reading****Resources**Chuang, Isaac, Chris Bernhard, Quantum Computing for Everyone. ,Quantum Computation and Quantum Technology, Nielsen, Michael
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Course Category

Mathematics and Basic Sciences	: 50	Education	:
Engineering	:	Science	: 50
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Classical computers		own notes
2	Quantum computers		own notes
3	Qubits		own notes
4	Superposition		own notes
5	Superposition		own notes
6	Entanglement		own notes
7	Entanglement		own notes
8	midterm exam		own notes
9	One qubit calculations		own notes
10	One qubit calculations		own notes
11	Two qubits calculations		own notes
12	Two qubits calculations		own notes
13	Two qubits calculations		own notes
14	Quantum Gates		own notes
15	Quantum Gates		own notes
16	Final examination		

Course Learning Outcomes

No	Learning Outcomes
C01	Can gain information about quantum computers
C02	Gaining information about qubits
C03	Gaining information about quantum gates
C04	Gaining information about superposition and entanglement
C05	Applications of quantum computing.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	1	%20
Laboratory	0	%0
Final examination	0	%0
Total		%60

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	7	2	14
Assignments	0	0	0
Presentation	2	5	10
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	14	2	28
Project	0	0	0
Final examination	1	2	2
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
C01	5					2	1
C02				5			
C03			3				
C05		4			5		



ÜSDMEC018 Radiation Measurement Technique					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
6	ÜSDMEC018	Radiation Measurement Technique	2	2	3

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

It is aimed to provide fundamental knowledge about the sources, effects, and protection methods related to X-rays and gamma rays.

Teaching Methods and Techniques:

This course covers the fundamental physical properties and sources of X-rays and gamma rays, as well as their biological effects on living organisms. It introduces the primary devices and methods used in radiation measurement and addresses key radiation-related parameters such as dose, dose rate, activity, and contamination. The course also encompasses natural and artificial sources of radiation, principles and methods of radiation protection, and the effects of radiation on adults and embryos. Students are expected to develop the ability to interpret theoretical knowledge through practical measurement techniques. The course includes content aimed at providing basic knowledge and awareness of individual and societal radiation safety.

Prerequisites and co-requisites:**Course Coordinator:**

Associate Prof.Dr. Haydar UNCU (Yerine)

Name of Lecturers:

Associate Prof.Dr. Haydar UNCU (Yerine)

Assistants:**Recommended or Required Reading****Resources**

Claus Grupen, Tilo Stroh, Ulrich Werthenbach Grundkurs Strahlenschutz, Springer Spektrum, 2008 ISBN 978-3-642-55341-7
Claus Grupen, Tilo Stroh, Ulrich Werthenbach Grundkurs Strahlenschutz, Springer Spektrum, 2008 ISBN 978-3-642-55341-7
Claus Grupen, Tilo Stroh, Ulrich Werthenbach Grundkurs Strahlenschutz, Springer Spektrum

Course Category

Mathematics and Basic Sciences	: 20	Education	:	: 30
Engineering	: 20	Science	:	: 20
Engineering Design	:	Health	:	: 10
Social Sciences	:	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Nuclear Physics		
2	Radioactive decay		
3	Properties of α , β and Gamma Radiation		
4	Radiation Protection		
5	Dosimeter, activity		
6	Dose Power		
7	Measurement devices		
8	Ara Sinav		
9	Contamination		
10	Natural Radiation		
11	Artificial Radiation		
12	Measurement and Analysis of Radiation		
13	Measurement and Analysis of Radiation		
14	Biological Effects of Radiation		
15	Influence of Radiation on Adults and Embryos		
16	Yarıyıl Sonu Sinavi		

Course Learning Outcomes

No	Learning Outcomes
C01	To estimate the influence of radioactivity
C02	To practice protection measures against radiation
C03	To transfer the basic knowledge about the creation of radioactivity

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	4	%30
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	3	42
Assignments	2	4	8
Presentation	0	0	0
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	5	5	5	5	5	5
C02	5	5	5	5	5	5	5
C03	5	5	5	5	5	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDMEC028 Introduction to Quantum Computing					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDMEC028	Introduction to Quantum Computing	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim is for students with a high school diploma or higher to be able to define information, explain the fundamental units of information, bits and qubits, in classical and quantum computers, and have knowledge of the basic quantum circuits used in quantum computers.

Teaching Methods and Techniques:

The content of this course covers the definition of information, along with the study of classical and quantum units of information, namely bits and qubits. It also includes fundamental logic operations used in information processing and their counterparts in quantum computing, quantum gates, and basic quantum algorithms.

Prerequisites and co-requisites:

Course Coordinator:

Associate Prof.Dr. Haydar UNCU

Name of Lecturers:

Associate Prof.Dr. Haydar UNCU

Assistants:

Recommended or Required Reading

Resources Quantencomputing kompakt (Yazar: Bettina Just) Springer Verlag 2020 Kuantum Hesaplama Teorik ve Uygulamalı Giriş (Yazar:Arda Mavi) <https://www.researchgate.net>

Course Category

Mathematics and Basic Sciences	: 40	Education	:
Engineering	: 20	Science	: 40
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Giriş: Kuantum Teknolojilerine Genel Bakış		
2	Kuantum Fizikine Giriş		
3	Enformasyonun Teknik Anlamı		
4	Klasik Bilgi Birimleri ve İşleme		
5	Qubit Kavramı ve Kuantum Durumları		
6	Kuantum Kapılar ve Devreler (1)		
7	Kuantum Kapılar ve Devreler (2)		
8	Ara Sınav		
9	Temel Kuantum Algoritmalarına Giriş		
10	Deutsch ve Deutsch-Jozsa Algoritması		
11	Bernstein-Vazirani Algoritması		
12	Grover Arama Algoritması		
13	Shor'un Algoritmasına Giriş (teorik)		
14	Uygulamalı Algoritma Projeleri / Sunumlar		
15	Kuantum Hesaplama Platformları		
16	Yarıyıl Sonu Sınavı		

Course Learning Outcomes

No Learning Outcomes

C01	To be able to comprehend the importance of quantum technologies today and in the future
C02	To be familiar with technical meaning of information.
C03	To be familiar with classical and quantum units of information and information processing
C04	To be familiar with classical and quantum logic gates

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	4	%30
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%40
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	1	14
Assignments	4	3	12
Presentation	0	0	0
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
C01	3	3	3	3	3	3	3
C02	3	3	3	3	3	3	3
C03	3	3	3	3	3	3	3
C04	3	3	3	3	3	3	3



ÜSDMEC048 Exploring the Nanoworld					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
6	ÜSDMEC048	Exploring the Nanoworld	2	2	3

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to provide an opportunity to the students that they learn the inventions and life of the scientists subject to the Nobel Prize in Physics.

Teaching Methods and Techniques:

The content of this course includes conducting in-depth research on the presentation topic, acquiring the fundamental knowledge underlying inventions, and examining the invention from a theoretical perspective. Students also learn about the background story of the invention and analyze its significance and areas of application in detail.

Prerequisites and co-requisites:**Course Coordinator:**

Associate Prof.Dr. Haydar UNCU

Name of Lecturers:

Associate Prof.Dr. Haydar UNCU

Assistants:**Recommended or Required Reading**

Resources	Exploring the Nanoworld
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Course Category

Mathematics and Basic Sciences : 20	Education :
Engineering : 30	Science : 30
Engineering Design :	Health :
Social Sciences : 20	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Nanotechnology and Fundamentals of the Nano World		
2	What is Information? Concepts of Bit and Qubit		
3	Introduction to Scientific Research Techniques		
4	Structure of Matter at the Nanoscale: Atoms and Molecules		
5	What is an Invention? Difference Between Scientific Discovery and Invention		
6	Groundbreaking Inventions in Nanotechnology I: Scanning Tunneling Microscope (STM)		
7	Groundbreaking Inventions in Nanotechnology II: Carbon Nanotubes and Fullerenes		
8	Midterm		
9	Midterm Exam and Feedback Week		
10	How to Research the Theoretical Background of an Invention		
11	Invention Stories: The Human Side of Scientific Discoveries		
12	Applications of Nanomaterials in Daily Life		
13	Student Presentations I: Introduction and Discussion of Inventions		
14	Student Presentations II: Sharing Through Scientific Presentation Techniques		
15	General Evaluation, Discussion, and Feedback		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	The student will be able to conduct independent research on a specific invention and analyze the gathered information.
C02	The student will be able to explain the theoretical foundations of an invention and evaluate it from a scientific perspective.
C03	The student will be able to effectively present the history, significance, and current applications of an invention through a structured presentation.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	3	42
Assignments	1	10	10
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	1	1	1	2	3	3	4
C02	1	1	1	2	3	3	4
C03	1	1	1	2	3	3	4



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDOSM121 Ottoman Turkish I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDOSM121	Ottoman Turkish I	3	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

Students taking this course will have general information about Ottoman Turkish. The student is aimed to learn the alphabet, writing system and grammar rules. It is aimed to be able to read printed texts.

Teaching Methods and Techniques:

The course covers the learning of the Ottoman Turkish alphabet and suffixes, fluent reading of printed Ottoman texts.

Prerequisites and co-requisites:**Course Coordinator:**

Instructor Dr. Nihan ABİR KURT

Name of Lecturers:

Instructor Dr. Nihan ABİR KURT

Assistants:**Recommended or Required Reading****Resources**

Develi, H. Osmanlı Türkçesi Kilavuzu I, Kesit Yay. ,Ergin, M. Osmanlıca Dersleri, Boğaziçi Yay.,Timurtaş, F.K. Osmanlı Türkçesi Grameri, Alfa Yay.,Timurtaş, F.K. Osmanlı T

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Definition of Ottoman TurkishGeneral information and cautions about Ottoman TurkishOttoman Turkish Alphabet		
2	Reading the lettersCombine of letters Harekeler		
3	Writing and reading Turkish vowels in words: a, e		
4	Writing and reading Turkish vowels in words: o, ö, u, ü		
5	Writing and reading Turkish vowels in words: ı, i		
6	Features of consonant letters and their spelling in words		
7	Properties of ayin and hemze sounds, spelling and reading in words /Letters that have no sound equivalent in Turkish and		
8	Midterm Exam		
9	Noun Suffixes		
10	Spelling and pronunciation of Turkish suffixes: Multiplicity suffixes		
11	Spelling and reading of Turkish suffixes: Construction suffixes		
12	Spelling and reading of adverb-verb and adjective-verb suffixes		
13	Turkish pronouns and Turkish numbers spelling and reading		
14	Spelling and reading of declarative suffixes /Spelling and reading of state suffixes		
15	Spelling and reading of possessive suffixes		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Have knowledge about Ottoman Turkish and recognise the letters of the alphabet.
C02	Reads the letters in Ottoman Turkish and learns how these letters are combined in the word.
C03	Learns the spelling of Turkish vowels in words and can read them.
C04	Learns the spelling of Turkish vowels in words and can read them.
C05	Learns the spelling of Turkish vowels in words and can read them.
C06	Understands the spelling of consonant letters in words and can read them.
C07	Understands the spelling of ayin and hemze sounds in words and can read them correctly
C08	Understands the spelling of Turkish suffixes and can read and write them.
C09	Understands the spelling of Turkish suffixes, can read and write them.
C10	Understands the spelling of Turkish pronouns, can read and write them.
C11	Understands the spelling of Turkish numbers, can read and write them.
C12	Can read and write words in Ottoman Turkish.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	3	39
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes		
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	P01	P05
C01	3	
C02	2	5
C03	2	
C04	2	
C05	2	
C06	2	
C07	2	
C08	2	
C09	2	
C10	2	
C11	2	
C12	2	



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDOSM122		Ottoman Turkish II			
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDOSM122	Ottoman Turkish II	3	3	3

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

Students taking this course are aimed to have advanced knowledge about Ottoman Turkish. It is aimed that students will be able to read and understand 20th and 21st century Ottoman texts fluently.

Teaching Methods and Techniques:

It includes suffixes in Ottoman Turkish, complement rules, 20th and 21st century texts.

Prerequisites and co-requisites:**Course Coordinator:**

Instructor Dr. Nihan ABİR KURT

Name of Lecturers:

Instructor Dr. Nihan ABİR KURT

Assistants:**Recommended or Required Reading****Resources**

Develi, H. Osmanlı Türkçesi Kilavuzu I, Kesit Yay. ,Ergin, M. Osmanlıca Dersleri, Boğaziçi Yay.,Timurtaş, F.K. Osmanlı Türkçesi Metinleri, Alfa Yay.,Timurtaş, F.K. Osmanlı

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	General information and cautions about Ottoman Turkish	General information on the usage areas of Ottoman Turkish and t	
2	Closed e: Spelling and examples from the text		
3	Past tense suffix: Spelling, pronunciation and reading practice with examples from the text		
4	Present simple suffix: Spelling, pronunciation and reading practice with examples from the text		
5	Past tense suffix: Spelling, pronunciation and reading practice with examples from the text		
6	Present tense suffix: Spelling, pronunciation and reading practice with examples from the text	Future tense suffix: Spelling	
7	Modes of wish, condition, request, necessity and imperative: Spelling, pronunciation and reading practice with examples fr		
8	Midterm Exam		
9	Conjugation of additional verbs and compound verbs: Spelling, pronunciation and reading practice with examples from the t		
10	Recognition of Arabic and Persian words, Persian structured phrases: Spelling, reading and reading with examples from the		
11	Persian adjective phrases and Persian phrases consisting of three words		
12	Gender and gender in Arabic words, Persian and Arabic plurality suffixes		
13	Arabic masdars: Ism al fail and ism al meful		
14	Arabic masdars: Ism-i fail and ism-i meful: Practice and text reading		
15	Text reading		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Have knowledge about Ottoman Turkish and recognize historical texts
C02	Recognizes the spelling of closed e in the word and can read the text
C03	Recognizes the spelling of the past tense suffix in the word and can read the text.
C04	Recognizes the spelling of the present simple suffix in the word and can read the text.
C05	Recognizes the spelling of the past tense suffix in the word and can read the text.
C06	Recognizes the spelling of the present tense suffix in the word and can read the text.
C07	Recognizes the spelling of the future tense suffix in the word and can read the text.
C08	Recognizes the spelling of wish, condition, request, necessity and imperative tenses in the word and can read the text.
C09	Recognizes the spelling of additional verb and compound verb conjugations in the word and can read the text.
C10	Distinguish Arabic and Persian words and read them.
C11	Understands Arabic masdars. can read them and analyze their word meanings.
C12	Read and understand 20th century printed Ottoman Turkish texts.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	13	3	39
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			84
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes		
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	P01	P05
C01	3	
C02	2	5
C03	2	
C04	2	
C05	2	
C06	2	
C07	2	
C08	2	
C09	2	
C10	2	
C11	2	
C12	3	



Turkish-German University

Faculty of Engineering
Department of Civil Engineering (German)

ÜSDPYB123 Positive Psychology and Life Skills					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDPYB123	Positive Psychology and Life Skills	2	2	3

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to help students develop fundamental personal and interpersonal skills that enhance their psychological well-being. It seeks to enable students to acquire internal skills such as self-awareness, emotion regulation, psychological flexibility, and resilience, as well as to become competent in social skills like effective communication, healthy boundary-setting, problem-solving, and conflict management. Additionally, the course aims to promote the development of more functional thinking patterns by recognizing perfectionism and cognitive distortions, and to apply life skills such as time management to everyday life.

Teaching Methods and Techniques:

The course begins with an introduction to the concepts of self-awareness, self-esteem, self-efficacy, and self-compassion. Within the framework of happiness, well-being, and positive psychology approaches, students explore recognizing their strengths and enhancing positive experiences. Skills such as emotion regulation, psychological flexibility, and resilience are taught to help students improve their capacity to cope with stressful situations. Perfectionism, cognitive distortions, and self-sabotaging behaviors are addressed, with a focus on developing healthy thinking and behavioral strategies. Effective communication, empathy, and healthy boundary-setting skills are examined. In the final section, problem-solving, conflict resolution, and time management techniques are covered, aiming to strengthen students' academic and personal life skills.

Prerequisites and co-requisites:**Course Coordinator:**

Asist Prof.Dr. Yasemin OKAN ER

Name of Lecturers:

Asist Prof.Dr. Yasemin OKAN ER

Assistants:**Recommended or Required Reading****Resources**

- Balci, S., & Yılmaz, M. (2018). Stres ve başa çıkma. Ankara: Pegem Akademi.
- Burns, D. D. (t.y.). Mükemmeliyetçilik tuzağı (Çev. ...). İstanbul: Sistem Yayıncılık.
- Balci, S., & Yılmaz, M. (2018). Stres ve başa çıkma. Ankara: Pegem Akademi.
- Burns, D. D. (t.y.). Mükemmeliyetçilik tuzağı (Çev. ...). İstanbul: Sistem Yayıncılık.
- Covey, S. R. (2005). Etkili insanların 7 alışkanlığı. İstanbul: Varlık Yayınları.
- Deniz, M. E., & Sümer, N. (Ed.). (2010). Kişilik, benlik ve kimlik. Ankara: Nobel Akademik Yayıncılık.
- Doğan, T. (Ed.). (2016). Pozitif psikoloji. Ankara: Pegem Akademi.

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Self-Awareness (Self-Esteem – Self-Efficacy)		
2	Self-Awareness (Self-Compassion)		
3	Happiness – Well-Being		
4	Positive Psychology Practices		
5	Emotion Regulation		
6	Psychological Flexibility		
7	Psychological Resilience		
8	Stress Management		
9	Midterm Exam		
10	Perfectionism (Cognitive Distortions – Self-Sabotage)		
11	Effective Communication		
12	Healthy Boundary-Setting		
13	Problem Solving		
14	Conflict Resolution		
15	Time Management		
16	End-of-Term Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	The student identifies their own strengths, values, and areas for development by using self-awareness skills.
C02	The student explains models of happiness and well-being and integrates positive psychology practices into daily life.
C03	The student copes with intense emotions in a healthy way by using basic emotion regulation strategies.
C04	The student adapts to stressful and changing life conditions by applying psychological flexibility and resilience skills.
C05	The student recognizes cognitive distortions and develops cognitive coping strategies to reduce perfectionism and self-sabotaging behaviors.
C06	The student expresses themselves empathetically, clearly, and effectively by using effective communication skills.
C07	The student manages interpersonal conflicts with a collaborative and solution-focused approach by setting healthy boundaries in relationships.
C08	The student engages in effective planning in both academic and personal life by using problem-solving and time management techniques.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%0

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	15	3	45
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			77
ECTS Credit of the Course			3

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	5	1	2	2	4	2	1
C01	5	1	2	2	3	2	1
C02	5	1	2	2	3	3	1
C03	5	1	2	2	3	2	1
C04	5	2	2	2	3	2	1
C05	5	2	2	2	4	2	1
C06	5	2	2	2	3	3	1
C07	5	1	2	2	4	2	1
C08	5	1	2	2	4	2	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDSKI202 City ??and Culture: İstanbul					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDSKI202	City ??and Culture: İstanbul	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach the concepts of city and culture, cultural elements of city life; It aims to introduce the city of İstanbul within the context of its history, architecture, art and literature in the context of the relationship between city and culture.

Teaching Methods and Techniques:

This course includes the concepts and definitions of city and culture, historical development of İstanbul from past to present, İstanbul in the Byzantine Period, İstanbul in the Ottoman Period, İstanbul in the Republican Period, Urban transformation and İstanbul, İstanbul's historical, cultural and touristic features, İstanbul and Art and Period evaluation.

Prerequisites and co-requisites:

Course Coordinator:

Asist Prof.Dr. Mehtap KAYA

Name of Lecturers:

Instructor Dr. Gül Ayşe AkarAsist Prof.Dr. Mehtap KAYA

Assistants:

Recommended or Required Reading

Resources

Semavi Eyice, Son Devir Bizans Mimarisi: İstanbul'da Palaiologos'lar Devri Anıtları, İstanbul, 1963, İstanbul Üniversitesi Edebiyat Fakültesi Yayınları.,Coşkun Yılmaz (Editör, Ahmet Emre Bilgili, Editör (2011) Şehir ve Kültür İstanbul. Profil Yayıncılık.

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	City and Culture: Concepts and Definitions I		
2	City and Culture: Concepts and Definitions II		
3	Historical Development of İstanbul from Past to Present		
4	İstanbul in the Byzantine Period-I		
5	İstanbul in the Byzantine Period-II		
6	İstanbul in the Ottoman Period-I		
7	Midterm Exam		
8	İstanbul in the Ottoman Period-II		
9	İstanbul in the Republican Era-I		
10	İstanbul in the Republican Era-II		
11	Urban Transformation and İstanbul		
12	Historical, Cultural and Touristic Features of İstanbul		
13	İstanbul and Art		
14	General Evaluation		
15	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Cultural elements of city life will be learned.
C02	İstanbul' s urban history will be learned in the context of the historical process from the past to the present, and information will be obtained about the cultural and touristic features of the city as v
C03	The urban history of İstanbul will be learned within the framework of architecture, art and literature.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	14	2	28
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			60
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes	
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	P02
C01	1
C02	2
C03	2



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDSKY123 Sustainability, Climate and Carbon Footprint Management					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDSKY123	Sustainability, Climate and Carbon Footprint Management	2	2	5

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

Sustainability and the climate crisis are addressed in their scientific, technical, and regulatory dimensions, enabling students to learn carbon footprint calculation methodologies through practical application. The course aims to build comprehensive awareness of climate policies, environmental regulations, and ESG (Environmental-Social-Governance) frameworks at the global and national levels; and to develop an analytical perspective capable of evaluating individual and corporate emissions calculation methodologies and mitigation strategies. The course consists of an introduction to the basic definitions and calculation methods relevant to the course content.

Teaching Methods and Techniques:

The course consists of an introduction to the basic definitions and calculation methods relevant to the course content.

Prerequisites and co-requisites:**Course Coordinator:****Name of Lecturers:**

Prof. Dr. Elif NuroğluLecturer Simge VarLecturer Nilay Çakır

Assistants:**Recommended or Required Reading**

Resources IPCC. "Sixth Assessment Report (AR6)." GHG Protocol. "Corporate Accounting and Reporting Standard." ISO Standarts (14064 & ISO 14067 &14040) T.C Çevre, Şehircilik

Course Category

Mathematics and Basic Sciences :		Education :	
Engineering :	60	Science :	
Engineering Design :		Health :	
Social Sciences :	40	Field :	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Course Description and General Concepts		
2	ESG Concept and Climate Crisis, Global Warming Temperature Scenarios		
3	Economic Perspective and Current Regulations		
4	Sustainability and combating climate change in the world and Turkey		
5	Sustainability and combating climate change in the world and Turkey		
6	Climate Change: Risks and Opportunities		
7	Climate Change: Risks and Opportunities 2		
8	Midterm Exam		
9	Carbon Footprint Introduction		
10	Calculation of Greenhouse Gas Emissions		
11	Calculation of Greenhouse Gas Emissions		
12	Calculation of Greenhouse Gas Emissions		
13	Target Setting and Reduction Strategies		
14	Carbon and Energy Management		
15	Special Topics in Environmental Sustainability: Life Cycle Assessment (LCA), Water Footprint, Product Carbon Footprint		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students will be able to analyse sustainability, environmental-social-governance (ESG) frameworks and their impact on sectors.
C02	Students will be able to explain the scientific basis of greenhouse gas emissions, climate crisis dynamics and climate change indicators.
C03	Students will be able to comparatively evaluate climate, carbon management and sustainability regulations in force globally and in Turkey.
C04	Students will define the concepts of carbon footprint and ecological footprint; they will be able to interpret the calculation principles and scopes (Scope 1-2-3) of these concepts.
C05	Students will be able to apply carbon footprint calculation processes in accordance with international standards such as the GHG Protocol and ISO 14064.
C06	Students will be able to evaluate emission reduction strategies, technological solutions, and carbon management tools at the corporate and individual levels.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	0	%0
Total		%0

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	6	84
Assignments	1	32	32
Presentation	0	0	0
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	3	3
Total Work Load			150
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes

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	P01	P02	P03	P04	P05	P06	P07
All	3	1	1	2	5	5	2
C01	3	1	1	2	5	5	2
C02	2	1	1	2	4	5	2
C03	2		1	4	5	5	3
C04	3	2	1	1	4	4	2
C05	2	3	1	1	4	4	3
C06	3	1	1	2	5	5	2



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDTGH111 History of Daily Life in Turkey					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDTGH111	History of Daily Life in Turkey	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The main aim of the course is to show how and why daily life in modern Turkey differs from the Ottoman period and to comprehend the principles that shape the concept of 'daily life' in the historical process. In addition, to provide a historical and sociological understanding of the concept of 'daily life' which has recently come to the fore.

Teaching Methods and Techniques:

This course examines how everyday life practices and social structures have evolved throughout Turkey's historical processes. It analyzes how everyday life in the Ottoman period was shaped by social classes and urban-rural differences, and the impact of these structures on societal dynamics. The course covers the effects of social reforms implemented in the early years of the Republic on everyday life, the process of modernization, and societal transformations. It evaluates the impact of social and economic changes on daily life after 1980. Additionally, it explores the effects of social media and digital transformation on cultural practices. The course enables students to understand the impact of historical processes on everyday life in Turkey and analyze the reflections of these processes on cultural identity.

Prerequisites and co-requisites:**Course Coordinator:**

Asist Prof.Dr. Mehtap KAYA

Name of Lecturers:

Asist Prof.Dr. Mehtap KAYA

Assistants:**Recommended or Required Reading****Resources**

Ahıska, Meltem. (2010). Occidentalism in Turkey – Questions of Modernity and National Identity in Turkish Radio Broadcasting. London and New York.,Akçaoğlu, Aksu. (2010). Lefebvre, Henri. (2010). Gündelik Hayatın Eleştirisi I. I. Ergüden (çev.). İstanbul: Sel Yayıncılık.
Lefebvre, Henri. (2010). Gündelik Hayatın Eleştirisi II – Gündelik Hayat Sosyolojisinin Temelleri. I. Ergüden (çev.). İstanbul: Sel Yayıncılık.
Lefebvre, Henri. (2010). Gündelik Hayatın Eleştirisi III – Moderniteden Modernizme. I. Ergüden (çev.). İstanbul: Sel Yayıncılık.
Lefebvre, Henri. (2016). Modern Dünyada Gündelik Hayat. İstanbul: Metis Yayınları.

Course Category**Mathematics and Basic Sciences** :

:

Engineering Design :

:

Social Sciences :

:

Education :

:

Science :

:

Health :

:

Field :

:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction-General Introduction	-	-
2	Conceptual Framework-I	-	-
3	Conceptual Framework-II	-	-
4	Everyday Life Trailers and Turkey-I	-	-
5	Everyday Life Trailers and Turkey-II	-	-
6	Practices of Daily Life Inherited from the Ottoman Empire - 1	-	-
7	Practices of Daily Life Inherited from the Ottoman Empire - 2	-	-
8	Midterm Exam	-	-
9	Modernizing Everyday Life in the Early Republican Era (1923-1945)-I	-	-
10	Modernizing Everyday Life in the Early Republican Era (1923-1945)-II	-	-
11	From World War II to the Cold War (1945-1960)	-	-
12	Period Between Military Interventions (1960-1980)	-	-
13	New World Order and Popular Culture - 1	-	-
14	New World Order and Popular Culture - 2	-	-
15	The Digital Age and the Evolution of Everyday Life Practices	-	-
16	Final Exam	-	-

Course Learning Outcomes

No	Learning Outcomes
C01	Determines the differences between the concepts of 'Official History' and 'Daily Life History'.
C02	Compares the Republican period and the Ottoman period. Understands the differences between the two periods in terms of 'Daily Life History'.
C03	Gains knowledge about daily life practices of the Ottoman period. Understands what role culture plays in the construction of daily life.
C04	Understands how modernization took place during the Republic period and how it was reflected in daily life. Students will be able to evaluate the transformation of daily life in the pre- and post-m
C05	Understands the effects of the war on daily life practices by analyzing the causes and consequences of World War II.
C06	Gains information about the New World order. Understands how their revolution extends to the present day and what its connection is with the "Digital Age" we live in.
C07	Recognizes how today's daily life practices have changed compared to the past. Understands how popular culture affects today's consumer culture and where it drags world history.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, environmental, and societal contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%60

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	13	2	26
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes	
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	P03
C01	1
C02	1
C03	1
C04	1
C05	1
C06	1
C07	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDTUR009 Academic Turkish for Foreigners I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	ÜSDTUR009	Academic Turkish for Foreigners I	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The goal is to educate individuals who speak their mother tongue effectively, have effective speech, writing, reading and listening skills and strong communication skills.

Teaching Methods and Techniques:

B1 level Turkish is taught in the Academic Turkish for Foreigners I course. Students are offered a course focused on language, cultural interaction and communication.

Prerequisites and co-requisites:

Course Coordinator:

Instructor Dr. Gül Aysel AKAR

Name of Lecturers:

Instructor Dr. Gül Aysel AKAR

Assistants:

Recommended or Required Reading

Resources	
	LEVEND, Ağâh Sırrı, Türk Dilinde Gelişme ve Sadeleşme Evreleri, Türk Dil Kurumu Publishing, Ankara, 1972, BANGUOĞLU, Tahsin, Türkçenin Grameri, Türk Dil Kurumu, Ankara, 1972, YUNUS EMRE İNSTITUTE B1 Turkish Book for Foreigners
	+
	+
	Ara Sinav+Final

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	1 -What is Intercultural Communication? (Reading Activity)-The Importance of Body Language in Political Science (Listening)		
2	The Mystery of Sleep:What Our Subconscious FeedsOur ImaginationHow Does It Affect Our Dreams and Nightmares? (Reading)		
3	-Art Movements (Reading Activity)-Excerpts from Nuri Bilge Ceylan's Movies (Listening Activity)-Conversation on Movies:Film		
4	-Disasters: Earthquakes, Fires, Floods and Hurricanes in the World (Reading Effectiveness)-On the Chernobyl Disaster (Listening)		
5	-Journey to the Past with Ara Güler Photography (Reading Activity)-Past Transportation Vehicles and Future Transportation		
6	-World Cultural Heritage (Reading Activity)-On Popular Culture (Listening Activity)-Speaking About Superstitions in Different		
7	-What is Design? (Reading Activity)-Fashion Crafts (Listening Event)-Carpet Rug Weaving-Binding -Wood Carving, Stone Carving		
8	Midterm Exam		
9	-Consumption Frenzy (Reading Activity)-Renewable Energy Resources (Listening Activity)-Speech on the Relationship Between		
10	- The Place of Tourism in the Country's Economy (Reading Activity)-World Famous Festivals: Benefits of Festivals and Tourism		
11	-Is there life in Space? (Reading Activity)-Is it possible to teleport? (Listening Activity)-Going to the International Space Station		
12	-Unusual Dishes of Different Cultures (Reading Activity)-The Place and Importance of Turkish Cuisine in World Cuisines (Listening)		
13	-On Social Media Literacy (Reading Activity)-The Place of Social Media in Mass Communication (Listening Activity)-From WhatsApp		
14	-Livable Cities of the World (Reading Activity)-What are the features that make cities livable? (Listening Activity)- Telling World		
15	-What is Mythology? (Reading Activity)-About Greek Mythology (Listening Activity)-Legend Telling (Speech Activity)-Writer		
16	Final Exam		

Course Learning Outcomes

No Learning Outcomes

C01	Students are able to talk about habits that determine daily life in Turkish.
C02	Students are able to ask questions about places, objects, events and people around them.
C03	Students are able to introduce himself and his environment with external and personal characteristics.
C04	Students are able to describe the address of the place where they live and to explain what features they have.
C05	Students are able to express their wishes at any place in a suitable language.
C06	Students are able to fill the necessary forms in public institutions and they are able to arrange different documents.
C07	Students are able to determine the date and place for an interview, to fulfill the requirements of the interview, to understand job advertisements and able to conduct a job interview.
C08	Students are able to write messages and mails describing the status.
C09	Students are able to compare Turkish culture with their own culture.
C10	Students are able to read, understand and write scientific and artistic texts.
C11	Students are able to create and interpret graphics and tables for scientific papers.

Program Learning Outcomes

No Learning Outcome

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	12	2	24
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	5	1	1	1	1	1	1
C01	5	1	1	1	1	1	1
C02	5	1	1	1	1	1	1
C03	5	1	1	1	1	1	1
C04	5	1	1	1	1	1	1
C05	5	1	1	1	1	1	1
C06	5	1	1	1	1	1	1
C07	5	1	1	1	1	1	1
C08	5	1	1	1	1	1	1
C09	5	1	1	1	1	1	1
C10	5	1	1	1	1	1	1
C11	5	1	1	1	1	1	1



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDTUR010 Academic Turkish for Foreigners II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	ÜSDTUR010	Academic Turkish for Foreigners II	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The main objective of the course is to improve the communication between foreign students of our university. With the help of the Academic Turkish For Foreigners course, our students will be able to communicate more effectively by improving their reading, listening, speaking and writing skills in daily and academic life. This course will help students feel more competent in group activities. It will also provide them with the opportunity to express themselves better in public institutions. With the Academic Turkish For Foreigners course, it is aimed to increase the participation of our students in academic studies and to enable them to express themselves more easily in these studies.

Teaching Methods and Techniques:

In the Academic Turkish for Foreigners II course, B2 level Turkish and academic Turkish rules will be taught.

Prerequisites and co-requisites:**Course Coordinator:**

Instructor Dr. Gül Aysel AKAR

Name of Lecturers:

Instructor Dr. Gül Aysel AKAR

Assistants:**Recommended or Required Reading****Resources**

Istanbul Yabancılar İçin Türkçe Ders Kitabı B2, İstanbul: Kültür Sanat Basımevi, 2014. İstanbul Yabancılar İçin Türkçe Çalışma Kitabı B2, İstanbul: Kültür Sanat Basımevi, Yunus Emre Institute B2 Turkish Book
Istanbul Yabancılar İçin Türkçe Ders Kitabı B2, İstanbul: Kültür Sanat Basımevi, 2014.
+
Ara Sınav + Final

Course Category**Mathematics and Basic Sciences** :**Engineering** :**Engineering Design** :**Social Sciences** :

: 100

Education :**Science** :**Health** :**Field** :**Weekly Detailed Course Contents****Week Topics****Study Materials****Materials**

1	-What is Intercultural Communication? (Reading Activity)-Importance of Body Language in Political Science (Listening Activ		
2	- Mystery of Sleep: How does our subconscious affect our dreams and nightmares? (Reading Activity)- Is it Possible to Cha		
3	-Art Movements (Reading Activity)- Sections from Nuri Bilge Ceylan Films (Listening Activity)- Talking about films: Literary		
4	-Disasters: Earthquake-Fire-Flood- Hurricanes in the World (Reading Activity)- On the Chernobyl Disaster (Listening Activity		
5	-Journey to the Past with Ara Güler Photography (Reading Activity)- Means of Transportation in the Past and Means of Trai		
6	-World Cultural Heritage (Reading Activity)- On Popular Culture (Listening Activity)- Speaking on Superstitions in Different (
7	-What is Design? (Reading Activity)-Fashion Crafts Carpet and Rug-Weaving-Binding-Wood Carving, Stone Carving, Jewele		
8	Midterm Exam		
9	- Consumption Frenzy (Reading Activity)- Renewable Energy Sources (Listening Activity)- Speech on the Relationship Betw		
10	- The Place of Tourism in the Country Economy (Reading Activity)- World Famous Festivals: Festivals and Their Benefits on		
11	- Is there life in space? (Reading Activity)- Is it possible to teleportation? (Listening Activity)- Would you like to go to the Ir		
12	- Extraordinary Foods of Different Cultures (Reading Activity)- Importance of Turkish Cuisine in World Cuisine (Listening Ac		
13	- On Social Media Literacy (Reading Activity)- The Place of Social Media in Mass Communication (Listening Activity)- From v		
14	-The Livable Cities of the World (Reading Activity)-What are the features that make cities livable? (Listening Event)- Descri		
15	-What is Mythology? (Reading Activity)- About Greek Mythology (Listening Activity)-Myth Narration (Speaking Activity)-Mat		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

C01	Students are able to talk about habits that determine daily life in Turkish.
C02	Students are able to ask questions about places, objects, events and people around them.
C03	Students are able to introduce himself and his environment with external and personal characteristics.
C04	Students are able to describe the address of the place where they live and to explain what features they have.
C05	Students are able to express their wishes at any place in a suitable language. (Like to summarize health problems when they go to hospital)
C06	Students are able to fill the necessary forms in public institutions and they are able to arrange different documents.
C07	Students are able to determine the date and place for an interview, to fulfill the requirements of the interview, to understand job advertisements and able to conduct a job interview.
C08	Students are able to write messages and mails describing the status.
C09	Students are able to compare Turkish culture with their own culture.
C10	Students are able to read, understand and write scientific and artistic texts.
C11	Students are able to create and interpret graphics and tables for scientific papers.

Program Learning Outcomes**No Learning Outcome**

P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	5	1	1	1	3	5	2
C01	5	1	1	1	3	5	2
C02	5	1	1	1	3	5	2
C03	5	1	1	1	3	5	2
C04	5	1	1	1	3	5	2
C05	5	1	1	1	3	5	2
C06	5	1	1	1	3	5	2
C07	5	1	1	1	3	5	2
C08	5	1	1	1	3	5	2
C09	5	1	1	1	3	5	2
C10	5	1	1	1	3	5	2
C11	5	1	1	1	3	5	2



Turkish-German University

Faculty of Engineering
Department of Civil Engineering (German)

ÜSDTUR111 Turkish for Foreigners I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	ÜSDTUR111	Türkisch for Foreigners I	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The main objective of this lecture is that foreign students can learn Turkish at A1 level. Another aim is to give students the opportunity to introduce themselves, their families, friends and their surroundings in Turkish.

Teaching Methods and Techniques:

In this course, foreign students are taught A1 level Turkish language skills.

Prerequisites and co-requisites:**Course Coordinator:**

Instructor Dr. Gül Aysel AKAR

Name of Lecturers:

Instructor Dr. Gül Aysel AKAR

Assistants:**Recommended or Required Reading****Resources**

İstanbul Yabancılar İçin Türkçe Çalışma Kitabı A1, İstanbul: Kültür Sanat Basımevi, 2014. Yunus Emre Enstitüsü Yedi İklim Türkçe Ders Kitabı A1, Ankara: Türkiye Diyanet
İstanbul Yabancılar İçin Türkçe Çalışma Kitabı A1, İstanbul: Kültür Sanat Basımevi, 2014.
Yunus Emre Enstitüsü Yedi İklim Türkçe Ders Kitabı A1, Ankara: Türkiye Diyanet Vakfı Yayın Matbaacılık, 2016.
Yunus Emre Enstitüsü Yedi İklim Türkçe Çalışma Kitabı A1, Ankara: Türkiye Diyanet Vakfı Yayın Matbaacılık, 2016.
Yunus Emre Enstitüsü Yedi İklim Türkçe Ders Kitabı A1, Ankara: Türkiye Diyanet Vakfı Yayın Matbaacılık, 2016.
Yunus Emre Enstitüsü Yedi İklim Türkçe Çalışma Kitabı A1, Ankara: Türkiye Diyanet Vakfı Yayın Matbaacılık, 2016.
İSTANBUL YABANCI AD İÇİN TÜRKÇE DERS KİTABI A1

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Greetings and Introductions in Turkish	Listening	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
2	Turkish Alphabet and Vocabulary	Listening	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
3	Demonstrative Adjectives: This-That5W 1F Questions: Who? What?	Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
4	Making Plural in TurkishQuestion Suffix in Turkish	Speaking Exercises	İstanbul Yabancılar İçin Türkçe Ders Kit
5	The locative case in Turkish	Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
6	There Is / There Are in Turkish.	Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
7	Room Description	Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
8	Midterm Exam		
9	Recognizing Numbers in Turkish	Listening and Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
10	Introducing Friends in Turkish	Listening and Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
11	Explaining daily life	Listening and Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
12	Describe what you do in your spare time	Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
13	Tell About Hobbies	Speaking Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
14	Dative Case in Turkish Ablative Case in Turkish	Language Practices	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
15	Country Names in TurkishNationalities in Turkish	Language Exercises	İSTANBUL YABANCI AD İÇİN TÜRKÇE D
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students can introduce their family and circle of friends in detail by using possessive suffixes.
C02	Students can write a letter to their distant family explaining their situation.
C03	Students can tell the times. Can use expressions such as 'quarter past, quarter past, half past,' when telling the time. He can determine the date and place for a meeting, and understands when an
C04	Students recognize special days and holidays of Turkish culture.
C05	Students can introduce the holidays and special days of their own culture.
C06	Students can compare the special days and holidays in their own culture with those in Turkish culture in terms of their meanings and ways of celebrating.
C07	Students can describe the address of where they live and what features the place they live in has.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	1	2	3	5	3	2	2
C01	1	2	3	5	3	2	2
C02	1	2	3	5	3	2	2
C03	1	2	3	5	3	2	2
C04	1	2	3	5	3	2	2
C05	1	2	3	5	3	2	2
C06	1	2	3	5	3	2	2
C07	1	2	3	5	3	2	2



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

ÜSDTUR112 Turkish for Foreigners II					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDTUR112	Türkisch for Foreigners II	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to enable foreign students to acquire A2 level Turkish language skills. Students will be able to express themselves at a basic level on topics such as family, hobbies, and leisure activities; and they will reach a level where they can use speaking, writing, reading, and listening skills in daily life.

Teaching Methods and Techniques:

In this course, foreign students are taught A2 level Turkish language skills.

Prerequisites and co-requisites:**Course Coordinator:**

Instructor Dr. Gül Ayşe AKAR

Name of Lecturers:

Instructor Dr. Gül Ayşe AKAR

Assistants:**Recommended or Required Reading**

Resources	
	İSTANBUL YABANCILAR İÇİN TÜRKÇE DERS KİTABI A2
	İSTANBUL YABANCILAR İÇİN TÜRKÇE DERS KİTABI A2
	İSTANBUL YABANCILAR İÇİN TÜRKÇE DERS KİTABI A2
	+
	Ara Sınav+Final

Course Category

Mathematics and Basic Sciences	:	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	: 100	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Saying the Times in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
2	Accusative Case in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
3	Suffixes Used to Specify Place and Time	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
4	Special Days in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
5	Editing a Meeting Dialogue in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
6	Getting to Know Our Body in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
7	Diseases in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
8	Midterm Exam		
9	Giving Directions in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
10	Directions in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
11	Noun Phrases in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
12	-ki suffix in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
13	Making comparisons in Turkish	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
14	Language Exercises-1	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
15	Language Exercises-2	Listening and reading activities.	İSTANBUL YABANCILAR İÇİN TÜRKÇE D
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Students can design Turkish sentences that can be used when meeting new people.
C02	Students can make sentences to introduce themselves.
C03	Students can ask questions about the places, objects, events and people around them.
C04	Students can count in Turkish and show the order in which objects and people are placed.
C05	Students can name and describe the place according to its function.
C06	Students can describe a friend's external characteristics and introduce him/her with his/her personal characteristics.
C07	When students go to a hotel, they can write the necessary information on the form.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
All	1	1	3	5	1	1	2
C01	1	1	3	5	1	1	2
C02	1	1	3	5	1	1	2
C03	1	1	3	5	1	1	2
C04	1	1	3	5	1	1	2
C05	1	1	3	5	1	1	2
C06	1	1	3	5	1	1	2
C07	1	1	3	5	1	1	2



ÜSDVWL101 Economics Literacy					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	ÜSDVWL101	Economics Literacy	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

Turkish

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course is designed to equip students with foundational knowledge of macroeconomics and microeconomics. It aims to help students understand economic concepts and principles, grasp the relationship between law and economics, and acquire basic knowledge of economic analysis methods.

Teaching Methods and Techniques:

This course encompasses consumer and producer theory and thoroughly examines firm behaviors. Additionally, it focuses on the analysis of goods and factor markets and explores the concepts of inflation and money.

Prerequisites and co-requisites:**Course Coordinator:**

Prof. Dr. Elif Nuroğlu

Name of Lecturers:

Prof. Dr. Elif Nuroğlu

Assistants:**Recommended or Required Reading****Resources**

- Gans, J., King, S., Stonecash, R., & Mankiw, N. G. (2011). Principles of economics. Cengage Learning.
- Dinler, Zeynel (2015). İktisada giriş. Ekin Kitabevi Yayınları.
 - Gans, J., King, S., Stonecash, R., & Mankiw, N. G. (2011). Principles of economics. Cengage Learning.
 - Dinler, Zeynel (2015). İktisada giriş. Ekin Kitabevi Yayınları.

Course Category

Mathematics and Basic Sciences	:	30		Education	:	
Engineering	:			Science	:	
Engineering Design	:			Health	:	
Social Sciences	:	70		Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction - Ten Rules of Economics	-	-
2	Economic Thoughts		
3	Interdependence and Benefits of Trade		
4	Supply and Demand I: How do markets work?		
5	Supply and Demand II: How do markets work?		
6	Flexibility concept and applications,		
7	Supply and Demand III: Markets and prosperity, efficiency of consumers, producers and markets		
8	Midterm exam		
9	Supply, demand and economic measures		
10	Firm behavior, monopoly markets, industrial economics		
11	Monopolistic competition, oligopoly		
12	Working economy, income and discrimination		
13	Macro economics		
14	National income, inflation, money		
15	Conjuncture		
16	Final Exam		

Course Learning Outcomes**No Learning Outcomes**

- C01 Students gain familiarity with fundamental economic theories.
- C02 They acquire the ability to apply and evaluate basic economic models to analyze economic issues.
- C03 They develop the competence to analyze current problems using theoretical arguments.
- C04 They gain the ability to comprehend and assess the meaning of political economy and its impact on society.

Program Learning Outcomes**No Learning Outcome**

- P01 Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
- P02 The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
- P03 The ability to communicate effectively with diverse audiences.
- P04 The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and societal contexts.
- P05 The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
- P06 Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
- P07 The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes

bbb

	P01	P02	P03	P04	P05	P06	P07
C01	4	4	4	4	4	4	4
C02	4	4	4	4	4	4	4
C03	4	4	4	4	4	4	4
C04	4	4	4	4	4	4	4

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%20
Quizzes	0	%0
Assignment	2	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	7	98
Assignments	3	8	24
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
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							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	3	1	4	5	4	4	3
C02	3	1	4	5	4	4	3
C03	3	1	4	5	4	4	3
C04	3	1	4	5	4	4	3



VWL303 Public Finance and Public Economics					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
5	VWL303	Public Finance and Public Economics	3	3	5

Mode of Delivery:
Face to Face

Language of Instruction:
German

Level of Course Unit:
Bachelor's Degree

Work Placement(s):
No

Department / Program:
Department of Civil Engineering (German)

Type of Course Unit:
Elective

Objectives of the Course:
The aim of this course is to enable students to analyze the economic activities of states and address issues related to contemporary economic policy from a scientific perspective. Additionally, by examining state borrowing as a financial policy tool and the impacts of public debt policy, the course aims to equip students with the knowledge and skills to analyze and critically evaluate the economic actions of states.

Teaching Methods and Techniques:
This course addresses key topics such as contemporary issues in economic policy, fiscal policy, state borrowing, and public debt policy. Additionally, it covers major subjects including public revenues and expenditures, budget policy, budget planning, market and government failures, and reform processes.

Prerequisites and co-requisites:

Course Coordinator:
Prof. Dr. Elif Nuroğlu

Name of Lecturers:

Assistants:

Recommended or Required Reading

Resources

Vahlen. Corneo, G. (2012). Öffentliche Finanzen: Ausgabenpolitik (4. Auflage). Wigger, B. (2006). Grundzüge der Finanzwissenschaft (2. Auflage), Springer

Wigger, B. U. 2006. Grundzüge der Finanzwissenschaft. Springer: Berlin.

Ewald Nowotny, 1999, Der Öffentliche Sektor: Einführung in die Finanzwissenschaft.

Charles Blankart, 2011, Öffentliche Finanzen in der Demokratie.

Frank Cowell, 2009, Measuring Inequality,

Course Category

Mathematics and Basic Sciences	:		:	
Engineering	:		:	
Engineering Design	:		:	
Social Sciences	:	100	:	
			Education	:
			Science	:
			Health	:
			Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Normative state activity theory	-	Ewald Nowotny, 1999, Der Öffentliche S
2	Public goods and externality	-	Wigger, B. U. 2006. Grundzüge der Fina
3	Public goods and externality	-	Wigger, B. U. 2006. Grundzüge der Fina
4	The welfare economy, competitive equilibrium and Pareto efficiency	-	Wigger, Chapter 2; Durmuş, Chapter 2;
5	Externalities	-	Wigger, Kap. 4; Durmuş, Kap. 6
6	Imperfect Information	-	Wigger, Kap. 5; Nowotny, Kap.3
7	Efficiency and justice, state failure	-	Wigger, Chapters 12-14
8	Midterm Exam	-	Wigger, Chapters 12-14
9	Shared decision making	-	Wigger, Chapter- 9
10	Shared Decision Making	-	Wigger, Chapter- 9
11	Taxation and public debt	-	Wigger, Chapters 10-11
12	Taxation and public debt	-	Wigger, Chapters 10-11
13	Welfare, Prevention of Poverty, social security, education	-	Frank Cowell, 2009, Measuring Inequalit
14	Welfare, Prevention of Poverty, social security, education	-	Frank Cowell, 2009, Measuring Inequalit
15	Welfare, Prevention of Poverty, social security, education	-	Frank Cowell, 2009, Measuring Inequalit
16	Final Exam	-	Frank Cowell, 2009, Measuring Inequalit

Course Learning Outcomes

No	Learning Outcomes
C01	Understanding and resolving current economic policy issues
C02	Financial policy and government borrowing structure are learned.
C03	Managing public debt policy and its problems
C04	Public income and expenses, budget policy, budget planning

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic fact
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic,
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%20
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	1	%20
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	10	8	80
Assignments	0	0	0
Presentation	1	14	14
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	4	2	4	5	5	3	3
C02	4	2	4	5	5	3	3
C03	4	2	4	5	5	3	3
C04	4	2	4	5	5	3	3



VWL304 History of Economic Thoughts					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
6	VWL304	History of Economic Thoughts	3	3	5

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

It is aimed to present a general framework on the history of economic thought and to introduce schools of economic discipline within the historical development process.

Teaching Methods and Techniques:

opics covered include Economic Thought in the Middle Ages and the Islamic World, Mercantilists, and Physiocrats.

Prerequisites and co-requisites:**Course Coordinator:**

Asist Prof.Dr. Zehra Çankaya Bayraklı

Name of Lecturers:

Asist Prof.Dr. Zehra Çankaya Bayraklı

Assistants:**Recommended or Required Reading****Resources**

Politik İktisadın Evrimi, Gülten Kazgan, History of Economic Analysis, J. A. Schumpeter
Geschichte des ökonomischen Denkens, Heinz D. Kunst, Verlag C.H. Beck.
Ders Kitabı
Sunumlar
Vize ve Final

Course Category

Mathematics and Basic Sciences	:		Education	:	
Engineering	:		Science	:	
Engineering Design	:		Health	:	
Social Sciences	:	100	Field	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to the History of Economic Thought: Scope, Importance, Basic Concepts		
2	Introduction to the History of Economic Thought: Scope, Importance, Basic Concepts		
3	Economic Thought in Antiquity		
4	Economic Thought in Europe in the Middle Ages		
5	Economic Thought in Europe in the Middle Ages		
6	Mercantilism		
7	Physiocratic Economic Thought		
8	Midterm Exam		
9	Classical Economic Thought		
10	Criticism of Classical Economic Thought		
11	Classical Economic Thought and Karl Marx		
12	Neo-Classical Economic Thought		
13	Economic Problems Encountered in the Twentieth Century		
14	Economic Problems Encountered in the Twentieth Century		
15	Student Presentations 1		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	To have information about the History of Economic Thought
C02	Chronologically, information about economic thoughts and economic schools is obtained.
C03	Students learn to conduct a research using the sources related to the History of Economic Thought and to present this research in an organized manner.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	0	%0
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	1	%20
Laboratory	0	%0
Final examination	0	%0
Total		%40

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	9	6	54
Assignments	0	0	0
Presentation	10	4	40
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			140
ECTS Credit of the Course			5

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
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	P01	P02	P03	P04	P05	P06	P07
C01	3	1	5	5	4	3	5
C02	3	1	5	5	4	3	5
C03	3	1	5	5	4	3	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

WIN091 Introduction to Industrial Engineering					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	WIN091	Introduction to Industrial Engineering	2	2	2

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

This course aims to teach concepts, techniques, and methods that assist in the design, analysis, and improvement of various operations in businesses. Accordingly, it focuses on the transformation of inputs into products and services through development, production, distribution, and market delivery. The course emphasizes the effective management and control of processes and operations to ensure efficiency, cost-effectiveness, quality, and timely delivery to customers. Additionally, it introduces fundamental management principles and relevant methodologies.

Teaching Methods and Techniques:

This course covers topics including an introduction to industrial engineering, fundamental concepts, project management, classification of production/service systems, process design, facility location selection, demand forecasting, inventory management, production planning (aggregate production planning, MES, MPS, MRP, ERP, JIT), and production scheduling.

Prerequisites and co-requisites:

Course Coordinator:

Asist. Prof. Dr. Damla Durak Uşar

Name of Lecturers:

Asist. Prof. Dr. Damla Durak Uşar

Assistants:

Recommended or Required Reading

Resources

Operations Management; Auftragsbefüllung bei Sach- und Dienstleistungen, Thomas Grabner, Drath, P.; Leitfaden für den Gebrauch des Internationalen Einheitensystems. Lecture notes are available in electronic format.

Course Category

Mathematics and Basic Sciences :	Education :
Engineering : 100	Science :
Engineering Design :	Health :
Social Sciences :	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Introduction to Industrial Engineering		
2	Scientific Research Methods		
3	Presentation Techniques		
4	Project Management		
5	Units, Norms, Standards, and Patents		
6	Introduction to Linear Programming		
7	Process Design		
8	Midterm Exam		
9	Facility Location Selection		
10	Demand Forecasting		
11	Inventory Management		
12	Production Planning (Aggregate Production Planning, MES, MPS, MRP, ERP, JIT)		
13	Production Scheduling		
14	Sustainable Production and Operations Management		
15	Review		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Effectively communicates professional knowledge and findings both in written and oral form using presentation and reporting techniques.
C02	Explains the fundamental principles and methods of industrial engineering and applies them in problem-solving processes.
C03	Follows, interprets, and integrates current developments and trends in the field of industrial engineering into professional practices.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	1	%10
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	12	2	24
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			56
ECTS Credit of the Course			2

Contribution of Learning Outcomes to Programme Outcomes							
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bbb							
	P01	P02	P03	P04	P05	P06	P07
C01	5	4	3	4	3	5	5
C02	5	4	3	4	3	5	5
C03	5	4	3	5	3	5	5



Turkish-German University
Faculty of Engineering
Department of Civil Engineering (German)

Rechnungswesen und Bilanzierung					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
4	WIN204	Rechnungswesen und Bilanzierung	5	3,5	6

Mode of Delivery:

Face to Face

Language of Instruction:

German

Level of Course Unit:

Bachelor's Degree

Work Placement(s):

No

Department / Program:

Department of Civil Engineering (German)

Type of Course Unit:

Elective

Objectives of the Course:

The aim of this course is to teach accounting and basic financial statements to Industrial Engineering undergraduate students, ensuring that graduates master fundamental accounting practices and acquire sufficient literacy in financial statements.

Teaching Methods and Techniques:

This course covers the following topics: Fundamentals of Accounting, Double-Entry Bookkeeping Method, Documents Used in Accounting, Ledgers in Accounting, General Communiqué on Accounting System Application, Uniform Chart of Accounts, Basic Financial Statements (Balance Sheet, Income Statement), Closing Procedures in Accounting, Preparing Payroll, Inventory Valuation Methods, Depreciation Methods, Valuation Methods, and Taxes.

Prerequisites and co-requisites:

Course Coordinator:

Dr. Marc Jaeschke

Name of Lecturers:

Dr. Marc Jaeschke

Assistants:

Recommended or Required Reading

Resources Einführung in die Allgemeine Betriebswirtschaftslehre, Prof. Dr. Günter Wöhe., Einführung in die EDV-unterstützte Buchführung, Prof. Dr. Haluk Sumer., Genel Muhasebe, F

Course Category

Mathematics and Basic Sciences :	Education :
Engineering :	Science :
Engineering Design :	Health :
Social Sciences : 100	Field :

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Concept of Accounting, Its Function, Importance		
2	Basic Concepts of Accounting, Stakeholders of Accounting		
3	Documents Used in Accounting, Ledgers in Accounting, Inventory, Changes in Values in the Balance Sheet		
4	Concept of Account, Types of Accounts (Balance Sheet Accounts vs. Income Statement Accounts), Profit-Loss Concepts		
5	Value Added Tax (VAT) Concept, Related Legislation, VAT Calculation and Accounting Records		
6	Cost of Goods Sold (COGS), Accounting Records, Periodic and Perpetual Inventory Methods		
7	Accounting Closing I: Inventory Valuation Methods, Depreciation Expenses, Exchange Rate Valuation		
8	Midterm Exam		
9	Accounting Closing II: Accounting for Inventory and Delivery Differences		
10	rial Balance and Permanent Trial Balance; Preparing Balance Sheet and Income Statement from Trial Balance		
11	Calculating Net Salary from Gross, Payroll Preparation, Accounting for Salary Expenses and Payments		
12	Accounting Practice from Opening to Closing – 1		
13	Corporate Tax Calculation and Accounting Records - 1		
14	Corporate Tax Calculation and Accounting Records - 2		
15	Accounting Practice from Opening to Closing – 2		
16	Final Exam		

Course Learning Outcomes

No	Learning Outcomes
C01	Defines and explains the fundamental concepts of accounting.
C02	Applies the double-entry bookkeeping method and records financial transactions accurately.
C03	Identifies accounting documents and books, and acquires the skill to create accounting entries.
C04	Prepares basic financial statements and is capable of preparing these statements at the end of the period.
C05	Learns the accounting closing process and performs basic closing procedures.
C06	Learns stock valuation methods and applies these methods.
C07	Learns the concept of depreciation, calculates depreciation, and records expense entries.
C08	Learns to calculate net salary from gross salary and prepares payroll.

Program Learning Outcomes

No	Learning Outcome
P01	Ability to identify, formulate, and solve complex technical problems by applying the principles of engineering, science, and mathematics.
P02	The ability to apply engineering design to develop solutions that meet specific needs, taking into account public health, safety and welfare, global, cultural, social, environmental and economic factors.
P03	The ability to communicate effectively with diverse audiences.
P04	The ability to recognize ethical and professional responsibilities in technical situations and to make informed judgments that must consider the implications of technical solutions in global, economic, social, and environmental contexts.
P05	The ability to work effectively in a team whose members share leadership, create a collaborative and inclusive environment, set goals, plan tasks, and achieve goals.
P06	Ability to design and conduct appropriate experiments, analyze and interpret data, and draw conclusions using technical judgment.
P07	The ability to acquire and apply new knowledge when needed, using appropriate learning strategies.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	5	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Presentation	0	%0
Laboratory	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	5	70
Assignments	5	5	25
Presentation	0	0	0
Mid-terms	1	1	1
Practice	14	2	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

bbb

	P01	P02	P03	P04	P05	P06	P07
C01	1	1	1	1	1	1	2
C02	1	1	1	1	1	1	1
C03	1	1	1	1	1	1	1
C04	1	1	1	1	1	1	1
C05	1	1	1	1	1	1	1
C06	1	1	1	1	1	1	1
C07	1	1	1	1	1	1	1
C08	1	1	1	1	1	1	1