The English syllabi of the courses given in Eskişehir Osmangazi University Department of Aeronautical Engineering undergraduate education are given in the following order.

Semester	Course Code	Course Name	T+A	Credit, ECTS	Comp./Elec.
1	152411001	INTRODUCTION TO AERONAUTICAL ENG.	3+0	3 crd, 6 ects	Compulsory
1	152411002	COMPUTER AIDED DRAWING	2+2	4 crd, 6 ects	Compulsory
1	152411003	OCCUPATIONAL HEALTH AND SAFETY (I)	1+0	1 crd, 1 ects	Compulsory
1	152411004	PHYSICS I	3+0	3 crd, 3 ects	Compulsory
1	152411005	PHYSICS I LAB.	0+2	1 crd, 2 ects	Compulsory
1	152411006	CALCULUS I	4+0	4 crd, 5 ects	Compulsory
1	152411007	CHEMISTRY	3+0	3 crd, 3 ects	Compulsory
1	152411008	TECHNICAL ENGLISH	2+0	2 crd, 2 ects	Compulsory
1	152411009	TURKISH LANGUAGE (I)	2+0	0 crd, 2 ects	Compulsory
2	152412001	PHYSICS II	3+0	3 crd, 3 ects	Compulsory
2	152412002	PHYSICS II LAB.	0+2	1 crd, 2 ects	Compulsory
2	152412003	CALCULUS II	4+0	4 crd, 5 ects	Compulsory
2	152412004	FUNDAMENTALS OF COMPUTER PROGRAMMING	2+2	3 crd, 5 ects	Compulsory
2	152412005	INTRODUCTION TO AERIAL VEHICLES	3+0	3 crd, 5 ects	Compulsory
2	152412006	STATICS	3+0	3 crd, 3 ects	Compulsory
2	152412007	ACADEMIC WRITING	3+0	3 crd, 4 ects	Compulsory
2	152412008	OCCUPATIONAL HEALTH AND SAFETY (II)	1+0	1 crd, 1 ects	Compulsory
2	152412009	TURKISH LANGUAGE (II)	2+0	0 crd, 2 ects	Compulsory
3	152413001	DIFFERENTIAL EQUATIONS	3+0	3 crd, 5 ects	Compulsory
3	152413002	MECHANICS OF MATERIALS	4+0	4 crd, 6 ects	Compulsory
3	152413003	DYNAMICS	3+0	3 crd, 4 ects	Compulsory
3	152413004	MATERIALS SCIENCE	3+0	3 crd, 5 ects	Compulsory
3	152413005	FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS	3+0	3 crd, 4 ects	Compulsory
3	152413006	LINEAR ALGEBRA	3+0	3 crd, 4 ects	Compulsory
3	152413007	HISTORY OF TURKISH REVOLUTION (I)	2+0	2 crd, 2 ects	Compulsory
4	152414001	NUMERICAL METHODS	3+0	3 crd, 4 ects	Compulsory
4	152414002	ENGINEERING THERMODYNAMICS	3+0	3 crd, 5 ects	Compulsory
4	152414003	AEROSPACE MATERIALS	3+0	3 crd, 5 ects	Compulsory
4	152414004	FLUID MECHANICS	3+0	3 crd, 5 ects	Compulsory
4	152414005	MEASUREMENT TECHNIQUES	3+0	3 crd, 4 ects	Compulsory
4	152414006	MACHINE ELEMENTS	3+0	3 crd, 5 ects	Compulsory
4	152414007	HISTORY OF TURKISH REVOLUTION (II)	2+0	2 crd, 2 ects	Compulsory
5	152415001	FUNDAMENTALS OF AERODYNAMICS	3+0	3 crd, 5 ects	Compulsory
5	152415002	HEAT TRANSFER	3+0	3 crd, 5 ects	Compulsory
5	152415003	ELASTICITY	3+0	3 crd, 4 ects	Compulsory
5	152415004	FUNDAMENTALS OF CONTROL SYSTEMS	3+0	3 crd, 5 ects	Compulsory
5	152415005	MANUFACTURING TECHNOLOGIES	3+0	3 crd, 5 ects	Compulsory
5	152415006	AIRCRAFT PERFORMANCE	3+0	3 crd, 3 ects	Compulsory
5	152415007	PRODUCTION PLANNING	3+0	3 crd, 3 ects	Non-Tech. Elec.
5	152415008	BEGINNING FRENCH 1	3+0	3 crd, 3 ects	Non-Tech. Elec.
5	152415009	GERMAN 1	3+0	3 crd, 3 ects	Non-Tech. Elec.
6	152416001	COMPRESSIBLE AERODYNAMICS	3+0	3 crd, 5 ects	Compulsory
6	152416002	AEROSPACE STRUCTURES	3+0	3 crd, 5 ects	Compulsory
6	152416003	AIRCRAFT STABILITY AND CONTROL	3+0	3 crd, 5 ects	Compulsory
6	152416004	PROPULSION SYSTEMS	3+0	3 crd, 5 ects	Compulsory
6	152416005	MECHANICAL VIBRATIONS	3+0	3 crd, 4 ects	Compulsory
6	152416006	PRACTICAL TRAINING 1	0+0	0 crd, 3 ects	Compulsory
6	152416007	BEGINNING FRENCH 2	3+0	3 crd, 3 ects	Non-Tech. Elec.
6	152416008	GERMAN 2	3+0	3 crd, 3 ects	Non-Tech. Elec.
7	152417xxx	AERONAUTICAL ENGINEERING LAB (I)	0+4	2 crd, 5 ects	Compulsory
7	152417xxx	MAINTENANCE ENGINEERING	3+0	3 crd, 5 ects	Compulsory
7	152417xxx	PRINCIPLES OF AIRCRAFT DESIGN	3+0	3 crd, 5 ects	Compulsory
7	152417xxx	AIRCRAFT SYSTEMS	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	STRUCTURES OF FUSELAGE	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	AERODYNAMIC SHAPE OPTIMIZATION	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	AVIATION METEOROLOGY	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	ACOUSTICS AND NOISE CONTROL	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	AIRCRAFT MECHATRONICS	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	GAS TURBINE ENGINE SYSTEMS	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	INTRODUCTION TO JET ENGINES	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	PRINCIPLES OF COMBUSTION	3+0	3 crd, 5 ects	Technical Elec.
7	152417xxx	INTERNAL COMBUSTION ENGINES	3+0	3 crd, 5 ects	Technical Elec.

7	152417xxx	DESIGN OF CONTROL SYSTEMS	3+0	3 crd, 5 ects	Design Elec.
7	152417xxx	DESIGN OF UNMANNED AERIAL SYSTEMS	3+0	3 crd, 5 ects	Design Elec.
7	152417xxx	GUIDED MISSILE DESIGN	3+0	3 crd, 5 ects	Design Elec.
7	152417xxx	COMPOSITE MATERIALS DESIGN	3+0	3 crd, 5 ects	Design Elec.
8	152418xxx	AERONAUTICAL ENGINEERING LAB (II)	0+4	2 crd, 5 ects	Compulsory
8	152418xxx	RESEARCH IN AIRCRAFT ENGINEERING (Bitirme)	1+4	3 crd, 4 ects	Compulsory
8	152418xxx	PRACTICAL TRAINING 2	0+3	3 crd, 3 ects	Compulsory
8	152418xxx	COMPUTATIONAL AERODYNAMICS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	NUMERICAL METHODS IN AEROSPACE ENGINNERING	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	INTRODUCTION TO FINITE ELEMENT ANALYSIS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	HYPERSONIC FLOWS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	COMPUTATIONAL FLUID DYNAMICS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	ENGINEERING WITH POLYMERS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	DEFENSE TECHNOLOGY MATERIALS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	FAILURE ANALYSIS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	CORROSION AND OXIDATION OF METALS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	MANUFACTURING METHODS IN AERONAUTICAL ENG.	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	TESTING AND EVALUATION OF ENG. MATERIALS	3+0	3 crd, 4 ects	Technical Elec.
8	152418xxx	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	3+0	3 crd, 5 ects	Technical Elec.
8	152418xxx	INTRODUCTION TO DATABASE MANAGEMENT SYST.	3+0	3 crd, 5 ects	Technical Elec.
8	152418xxx	SOFTWARE ENGINEERING	3+0	3 crd, 5 ects	Technical Elec.
8	152418xxx	REMOTE SENSING AND RADAR SYSTEMS	3+0	3 crd, 5 ects	Technical Elec.
8	152418xxx	DIGITAL IMAGE PROCESSING	3+0	3 crd, 5 ects	Technical Elec.
8	152418xxx	POWER ELECTRONICS	3+0	3 crd, 5 ects	Technical Elec.
8	152418xxx	ROTORCRAFT DYNAMICS AND DESIGN	3+0	3 crd, 5 ects	Design Elec.
8	152418xxx	AIRCRAFT ENGINE DESIGN	3+0	3 crd, 5 ects	Design Elec.
8	152418xxx	SPACE PROPULSION SYSTEMS DESIGN	3+0	3 crd, 5 ects	Design Elec.

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152411001	COURSE NAME	Introduction to Aeronautical Engineering

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
1	3	-	-	3	6	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X	X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	20
	2nd Mid-Term		
	Quiz		
	Homework	4	40
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	40

PREREQUIEITE(S)	-
COURSE DESCRIPTION	The course offered within the scope of the undergraduate education activities under the Department of Aeronautical Engineering of ESOGU will be an introductory course for the students who are just starting the undergraduate level.
COURSE OBJECTIVES	Basic knowledge of aviation/aeronautics history, aircraft types and characteristics, structural components of aircraft, aircraft control and control surfaces, atmosphere models, aerostatics and aerodynamics (basic level).
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Structuring the fundamental knowledge for the upcoming theoretical courses
COURSE OUTCOMES	Brief world and Turkish aviation/aeronautics history, atmosphere models, aircraft structural elements (wing, fuselage, tail...), information about basic aircraft design processes, understanding aircraft control and control surfaces.
TEXTBOOK	Uçuşa Başlangıç (Introduction To Flight), John D. Anderson, Jr., (Çev: Adil Yükselen), Nobel Akademik Yayıncılık, Nobel Akademik Yayıncılık
OTHER REFERENCES	Yechout, T. R., & Morris, S. L. (2003). Introduction to aircraft flight mechanics: Performance, static stability, dynamic stability, and classical feedback control. Reston, VA: American Institute of Aeronautics and Astronautics.
TOOLS AND EQUIPMENTS REQUIRED	Projector, overhead document projector,

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to engineering and ethics
2	Overview of aeronautics and aviation, brief aviation/aeronautics history
3	Overview of aeronautics and aviation, brief aviation/aeronautics history
4	Atmosphere models
5	Aircraft classification
6	Airplane structural elements
7	Industry visits – I (1. HİBMK)
8	Propulsion systems
9	Industry visits – I (TEI)
10	Rotary wing fundamental knowledge
11	Industry visits – I (Alp Aviation)
12	Aerostatics – Aerodynamics
13	Airports, Civil aviation regulations
14	Industry visits – I (ESTU – Hasan Polatkan Airport)
15,16	

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.		**X**	
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	**X**		
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	**X**		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature:

Date:

Dr. Öğr. Üyesi Zafer ÖZNALBANT 22.06.2021

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152411002	COURSE NAME	Computer Aided Design

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
	2	2		4	6	COMPULSORY (x) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	√	√	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework	1	10
	Project		
	Report		
	Others (……)		
FINAL EXAM			50

PREREQUIEITE(S)	
COURSE DESCRIPTION	Learning 2D and 3D technical drawing skills. Solid models and assembly knowledge.
COURSE OBJECTIVES	Learning fundamentals of 2 and 3D design and parametric moddelling in computer.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Aerospace engineers use technical drawings and modelling skills in engineering life.
COURSE OUTCOMES	Understanding design, reading and evaluating of technical drawings. Basic knowledge of assembly structures and design criteria.
TEXTBOOK	TECHNICAL DRAWING WITH ENGINEERING GRAPHICS, Giesecke et. al, 15th edition, 2016, Prentence Hall
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	Computer

COURSE SYLLABUS	
WEEK	**TOPICS**
1	What is graphic design?
2	Visualization and sketching
3	Geometry for modeling and design
4	Modeling and design: 2D
5	Modeling and design: 3D
6	2D Drawing
7	Section views
8	Auxilary views
9	Modeling for manufacturing and assembly
10	Modeling for manufacturing and assembly
11	Dimensioning
12	Tolerancing
13	Drawing control and data management
14	Welding represantation
15,16	

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**x**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**x**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	**x**		
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**x**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**x**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**x**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**x**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**x**		
9	Understanding of professional and ethical issues and taking responsibility		**x**	
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**x**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**x**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Dr.Gökçe Mehmet AY

Signature: **Date:**
04/07/2021

ESOGÜ Mechanical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152411003	COURSE NAME	OCCUPATIONAL HEALTH and SAFETY 1

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
1	1	0	0	1	1	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	20	30	50

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	NONE
COURSE DESCRIPTION	Concept of Occupational Health and Safety and its development; Developments related to Occupational Health and Safety in the World and in Turkey; A general view of Occupational Health and Safety and culture of safety, the tasks belong to institutions, organizations and workers in forming the safety culture; National and international institutions, agreements related to Occupational Health and Safety; Occupational Health and Safety management systems; Danger and risk terms in Occupational Health and Safety; Risk management, evaluation and methodology, risk analysis and case studies; Occupational Health and Safety risk reasons (physical, chemical, biological…); Occupational accident, reasons, preventing and protecting principles; Occupational diseases, reasons, preventing and protecting principles; Ergonomy; First aid
COURSE OBJECTIVES	To educate students on basic Occupational Health and Safety; to form safety culture; to give information about the aim and scope of 6331 numbered Occupational Health and Safety law; to give basic information about tasks, authority and responsibilities to provide Occupational Health and Safety in works; to educate employer and workers basically about right and obligation in work; student To provide following legal regulation and evaluating Occupational Health and Safety subject to students
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Evaluation of Occupational Health and Safety in Aeronautical Engineering
COURSE OUTCOMES	To learn Occupational Safety regulations and basic terms of Occupational Occupational accident definition, reasons and ability to use international accident evaluation methodologies To learn national institutions related to Occupational Safety, Occupational Safety specialist authority and responsibilities

	To learn design and standarts of work equipments oriented to Occupational Safety, education of health safety in works, documentation, OHSAS 18001 (TS 18001) Occupational Health and Safety quality standarts To learn regulations related to occupation
TEXTBOOK	Özkılıç, Ö. (2005), İş Sağlığı ve Güvenliği Yönetim Sistemleri ve Risk Değerlendirme Metodolojileri, TİSK Yayınları, Ankara.Bahr, N.J., 1997. System Safety Engineering and Risk Assesment: A Practical Approach, Taylor&Francis, Ney York, 251 s. Hale, A. & Baram, M.,1998. Safety Management The Challenge of Change, Pergamon, Netherlands, 275 s. Bayır, M., Ergül, M. (2006), İş Güvenliği, Alfa Aktüel Yayınları, s: 213, Bursa. İş Güvenliği Uzmanlığı Temel Eğitim Notları; Kanun, Tüzük ve Yönetmelikler; Mevzuatlar; Ders Notları; Slaytlar, Videolar ve Fotoğraflar.
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	Computer and projector

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Concept of Occupational Health and Safety and its development
2	Developments related to Occupational Health and Safety in the World and in Turkey
3	A general view of Occupational Health and Safety and culture of safety, the tasks belong to institutions, organizations and workers in forming the safety culture
4	National and international institutions, agreements related to Occupational Health and Safety
5	Occupational Health and Safety management systems
6	Danger and risk terms in Occupational Health and Safety
7	Risk management, evaluation and methodology, risk analysis and case studies
8	MIDTERM
9	Occupational Health and Safety risk reasons (physical, chemical, biological…)
10	Occupational accident, reasons, preventing and protecting principles
11	Occupational diseases, reasons, preventing and protecting principles
12	Ergonomy
13	First aid
14	First aid
15,16	FINAL

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of aeronautical engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex aeronautical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for aeronautical engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate aeronautical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**X**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	**X**		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Işıl YAZAR

Signature: **Date:** 29/06/2021

ESOGU Aeronautical Engineering
Course Information Form

SEMESTER	AUTUMN

COURSE CODE	152411004	COURSE NAME	Physics I

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
1	3	0	0	3	3	COMPULSORY (x) ELECTIVE ( )	Türkish ( ) English (x)

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering [if it contains considerable design, mark with (√)]	Social Science
100		( )	

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	30
	2nd Mid-Term		
	Quiz	2	10
	Homework		
	Project	1	10
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	Measurement and units; vectors; Kinematics; Dynamics; Work and Energy; Linear Momentum and Collisions; Rotational Motion; Equilibrium; Oscillatory Motion
COURSE OBJECTIVES	To teach the basic concepts and laws of physics and practices of daily life.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	In practice, varieties of physical systems to recognize and solve problems and at the same time improve their ability to practice in daily life. Using them, students will realize the role of physics in applied sciences such as health sciences and engineering.
COURSE OUTCOMES	Students realize of the variety problems of physical systems and solve these problems. Understands the importance of measurement and the units. Physical systems apply in their personal daily life. Recognizes the role of physics in engineering and health sciences. The basic laws of physics and concepts.
TEXTBOOK	**Physics for Scientists and Engineers** Raymond A. Serway - Emeritus, John W. Jewett - ISBN 0534408427 Thomson Brooks/Cole © 2004; 6th Edition
OTHER REFERENCES	1. Physics for Scientists and Engineers,Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. (1996). Physics for Scientists and Engineers. Prentice Hall, Inc. 2. Fundamentals of Physics ,Halliday, D. , Resnick, R., & Walker, J. (2006) 6th ed. Fundamentals of Physics. New York: John Wiley & Sons, Inc.

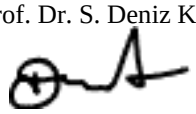
TOOLS AND EQUIPMENTS REQUIRED	Calculater, Projector and Computer, Black board

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Measurement and units
2	Vectors
3	Motion in One Dimension
4	Motion in Two Dimensions
5	Newton's Laws
6	Work and Power
7	Energy
8	Mid-Term Examination
9	Linear Momentum and Collisions
10	Rotational Motion
11	Applications of Rotational Motion
12	Equilibrium
13	Oscillatory Motion
14	Gravity
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Aeronauticalengineering; an ability to apply theoretical and practical knowledge on solving and modeling of Metallurgical and Materials engineering problems.	x		
2	Ability to determine, define, formulate and solve complex Aeronauticalengineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		X	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		X	
4	Ability to develop, select and use modern methods and tools required for Metallurgical and Materials engineering applications; ability to effective use of information technologies.			X
5	In order to investigate Aeronauticalengineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		X	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	X		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			X
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	X		
9	Understanding of professional and ethical issues and taking responsibility			X
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			X
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			X
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. S. Deniz KORKMAZ **Date:**

Signature(s):



ESOGU Aeronautical Engineering
Course Information Form

SEMESTER	AUTUMN

COURSE CODE	152411005	COURSE NAME	Physics Lab I

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
1	0	0	2	1	2	COMPULSORY (X) ELECTIVE ( )	Turkish

COURSE CATAGORY			
Basic Science	Basic Engineering	AeronauticalEngineering [if it contains considerable design, mark with (√)]	Social Science
100		( )	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term		
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report	5	50
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	General instructions; measurements; free fall and projectile motion; Newton's second law; the simple pendulum and moment of inertia; hooke's law and spiral spring; viscosity
COURSE OBJECTIVES	learning the basic principles and concepts of physics
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	To use existing technology and to produce new technologies.
COURSE OUTCOMES	To explain natural phenomena and analysis learn the science of physics, Understanding of scientific method and research skills.
TEXTBOOK	**M.C.Baykul, E.Algın, S.Eroğlu, C.Aşıcı, Physics I-II Lab Manuel foe scientist and engineers,** Eskisehir Osmangazi University
OTHER REFERENCES	Ekem, N. Ve Şenyel, M., **Fizik I-II Deneyleri**
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	General instructions
2	The education of occupational health and safety
3	Measurements
4	Free fall and projectile motion
5	Free fall and projectile motion
6	Newton's second law
7	Measurements
8	Mid-term examination
9	The simple pendulum and moment of inertia
10	The simple pendulum and moment of inertia
11	Hooke's law and spiral spring
12	Hooke's law and spiral spring
13	Viscosity
14	Viscosity
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Aeronauticalengineering; an ability to apply theoretical and practical knowledge on solving and modeling of Aeronauticalengineering problems.	**x**		
2	Ability to determine, define, formulate and solve complex Aeronauticalengineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for Aeronauticalengineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate Aeronauticalengineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**x**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Fen Edebiyat Fak. Fizik Bölümü Öğr.Üyesi **Date:**

Signature:

T.C. ESKİŞEHİR OSMANGAZİ UNİVERSİTY
FACULTY OF ENGINEERING AND ARCHITECTURE
AERONAUTİCAL ENGİNEERİNG

COURSE INFORMATION FORM

PERIOD	AUTUMN

COURSE CODE	152411006	COURSE NAME	CALCULUS I

SEMESTER	WEEKLY HOURS		COURSE			
	Theoretical	Application / Labaratory	Credit	ECTS	Type	Language
1	4	0	4	5	Compulsory (X) Elective ( )	EN

Basic Science	Basic Engineering	AERONAUTİCAL ENGİNEERİNG [Mark (√) if there is high design content.]	Humanities
4			

ASSESSMENT

	Exam Types	Number	%
Midterm	Midterm	1	40
Final	Final	1	60

Prerequisites	
Brief content of the course	Functions. their graphs, limits and continuity. Differentiation. Applications of derivative, indefinite Integration. definite integral, area,volume, surface ares, parametric curves, polar coordinate systems.
Objectives of the course	Main objective of this course is to teach students basic concepts, theorems of calculus and provide them the ability to solve mathematical problems
Contribution of the course towards professional education	the students gain necessary mathematical background for engineering courses and their professional lives.
Outcomes of the course	1. Solving limit problems. 2. Defining differentiation. 3. Applying derivatives to certain problems. 4. Defining integration. 5. Solving definite integrals. 6. Analyzing sequences and series.
Textbook of the course	**Calculus: one and several variables , Saturnino L. Salas, Garret J. Etgen, Einar Hille.**

Other reference books	**1) Calculus and Analytic Geometry, 9th Edition, G. B. Thomas,Jr., R. L. Finney, Addison-Wesley, 1998.2) Calculus the Maple Way, Robert B. Israel, Addison-Wesley, 2000.** 2) **Calculus, A Complete Course-Fifth Edition, Robert A. Adams, Addison-Wesley, 2001**

DERSİN HAFTALIK PLANI	
HAFTA	**İŞLENEN KONULAR**
1	Functions, elementary functions , combination of functions , Transcendental functions
2	Limits and continuity:definition of limits, some limit teorems, continuity
3	Derivatives:mean value theorem, Derivatives rules
4	Derivatives of elementary functions
5	Max-Mim. Problems, concavity
6	Graph of special functions
7	Differentials, Taylor theorem
8	Midterm
9	Integrals, area of certain region,
10	Some application of integrals
11	Integrals of elementary functions
12	Surface, ares, volme of certain solids, length of parametric curves
13	Polar coordinate system, area using polar coordinate system.
14	Indefinite integral
15,16	Final exam

NO	**PROGRAM ÇIKTISI**	**4**	**3**	**2**	**1**
1	Adequate knowledge of mathematics, science and Electrical and Electronic Engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving complex problems of Electrical and Electronic Engineering	[X]	[ ]	[ ]	[ ]
2	Ability to identify complex engineering problems in Electrical and Electronic Engineering and related fields, for this purpose having skills to formulate, select and apply appropriate methods.	[ ]	[ ]	[ ]	[X]
3	Having skills to apply modern design methods to design a complex system, process, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements concerning the Electrical and Electronic Engineering.	[ ]	[ ]	[ ]	[X]
4	aving skills to develop, select and apply modern techniques and tools needed to analyze and solve complex applications in Aeronautical Engineering, skills to use information technology effectively	[ ]	[ ]	[ ]	[X]
5	kills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of complex problems in Aeronautical Engineering	[ ]	[ ]	[ ]	[X]
6	ility to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas	[ ]	[ ]	[ ]	[X]

7	Communicating effectively in oral and written form both in Turkish and English. Effective report writing and understanding written reports, preparing design and manufacturing reports, making effective presentations, skills to give and receive clear and concise instructions.	[ ]	[ ]	[ ]	[X]
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to self-renewing	[ ]	[ ]	[ ]	[X]
9	Understanding of professional and ethical responsibility	[ ]	[ ]	[ ]	[X]
10	nformation on project management, change management and risk management practices, awareness on entrepreneurship and innovation, knowledge on sustainable development.	[ ]	[ ]	[ ]	[X]
11	Information about universal and societal effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.	[ ]	[ ]	[ ]	[X]
	4: High 3: Medium 2: Low 1:None				

Name of Instroctor(s): Dr. Öğr. Üyesi Emrah Atılgan **Date:** 1/07/2021

Signiture:

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152411007	COURSE NAME	Chemistry

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
01	3	0	0	3	3	COMPULSORY (x) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering [if it contains considerable design, mark with (√)]	Social Science
X			

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUISITE(S)	No
COURSE DESCRIPTION	Basic properties of subsances, measurements, atoms and atomic theory, periodic table and periodic properties, chemical reactions and stoichiometry, gaseous state, thermodynamics and thermochemistry, solutions, chemical equilibria, electrochemistry
COURSE OBJECTIVES	To introduce the main subjects of chemistry, to provide the basic chemistry knowledge necessary for electrical engineering
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Providing the fundamental chemistry knowledge and the ability of solving problems in chemistry
COURSE OUTCOMES	The student can define, explain and use the basic knowledge on the subjects in the course contents and can also solve the prroblems related to these areas
TEXTBOOK	Chemistry, The Study of Matter and Its Changes; J. E. Brady, J. R. Holum; John Wiley & Sons, Inc.
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Basic concepts and properties, measurements, units, dimensions, basic calculations
2	Atoms and atomic theory, periodic table and periodic properties, the mol concept
3	Chemical reactions and stoichiometry
4	Chemical compounds, mole and chemical Formula calculations, mass relationships in chemical phenomena
5	Concentration units, stoichiometry in solutions
6	Gaseous state
7	Chemical Kinetics
8	MIDTERM
9	Thermodynamics
10	Thermochemistry
11	Equilibrium
12	Solutions, colligative properties
13	Chemical equilibria
14	Electrochemistry
15,16	FINAL

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	X		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			X
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			X
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			X
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			X
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			X
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			X
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		X	
9	Understanding of professional and ethical issues and taking responsibility			X
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			X
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			X
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Prof. Dr. O. Sermet Kabasakal

Signature: **Date:**

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152411008	COURSE NAME	Technical English

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
1	2	0	0	2	2	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATEGORY			
Basic Science	Basic Engineering	Aeronautical Engineering [if it contains considerable design, mark with (√)]	Social Science

ASSESSMENT CRITERIA			
MID-TERM	Evaluation Type	Quantity	%
	1st Mid-Term	1	20
	2nd Mid-Term		
	Quiz	3	15
	Homework		
	Project	1	10
	Report	1	10
	Others (……)		
FINAL EXAM		1	45

PREREQUISITE(S)	To have sufficient knowledge of English (students must have successfully completed or have to be exempt from the English preparatory class).
COURSE DESCRIPTION	Introduction to technical English, aeronautical terminology, military and civil applications, design, production, maintenance practices, aviation administrations and certifications, mishap and incident reporting, describing and troubleshooting problems, using technical manuals, technical log entries, forms/checklists, parts catalogs, formal reports, academic research and writing, technical communication skills, presenting technical data.
COURSE OBJECTIVES	To provide required understanding of Technical English for Aeronautical Engineering education.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION	In this course, students of the Aeronautical Engineering Department will gain the most necessary Technical English knowledge used in civil/military aviation companies operating in the fields of aircraft design, manufacture, maintenance and repair.
COURSE OUTCOMES	On completion of the course the student should; 1. Have contributed to both oral and written Technical English, 2. Have experience in real life English language used in aeronautical engineering, 3. Understand how these outcomes are related to aeronautical engineering practice.
TEXTBOOK	-
OTHER REFERENCES	-
TOOLS AND EQUIPMENTS REQUIRED	Computer system equipped with suitable speakers, projector and writing board.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to Technical English
2	Aeronautical Terminology
3	Military and Civil Applications
4	Design, Production, Maintenance Practices
5	Aviation Administrations and Certifications
6	Mishap and Incident Reporting
7	Describing and Troubleshooting Problems
8	Mid-Term Examination
9	Using Technical Manuals
10	Technical Log Entries, Forms/Checklists, Parts Catalogs
11	Formal Reports
12	Academic Research and Writing
13	Technical Communication Skills
14	Presenting Technical Data
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	[ ]	[x]	[ ]
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	[ ]	[x]	[ ]
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	[ ]	[x]	[ ]
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	[ ]	[x]	[ ]
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[ ]	[ ]	[x]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[x]	[ ]	[ ]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[x]	[ ]	[ ]
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	[x]	[ ]	[ ]
9	Understanding of professional and ethical issues and taking responsibility	[ ]	[x]	[ ]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[ ]	[ ]	[x]
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	[ ]	[x]	[ ]
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s) : Assistant Prof. S. Fehmi DİLTEMİZ

Signature :

Date : 30.06.2021

ESOGÜ Aeronautical Engineering Department

COURSE CODE: 151221181 - 151241181 **COURSE TITLE:** Turkish I

Semester	Weekly Hours		COURSE		
	Theoretical	Practical	Credits	ECTS	Type
1	2	0	0	2	Compulsory (x) Elective ( )

Write the credit (for non-credit courses weekly hours) below (If necessary distribute the credits.).

Math and Basic Science	Aeronautical Engineering	General Education	Humanities
	[mark (√) if there is high design content]	2	

Assessment	THEORETICAL-PRACTICAL COURSES			LABORATORY COURSES		
Midterm	Type	Number	%	Activity Type	Number	%
	Midterm	1	50	Quiz		
	Quiz			Lab performance		
	Homework			Report		
	Project			Oral exam		
	Other (……)			Other (……)		
Final		1	50			
Makeup exam (Oral/Written)	Oral					

Prerequisites	-
Brief content of the course	The contents of this course are description and features of language, languages of the world, Position of Turkish among other languages, historical development of Turkish, development of western Turkish, Atatürk's ideas and projects on Turkish, pronunciation and punctuation, language policies.
Objectives of the course	The subject of the course is to expose the value of Turkish language by giving information about development of Turkish language, to gain national language awareness, to develop reading and writing skills, to compare and contrast Turkish language to other languages, to compare and contrast language policy of developed countries to Turkish language policy, to gain skill of speaking.
Contribution of the course towards professional education	1. Learn Turkish grammar 2. Gain an understanding of the position of Turkish among other languages 3. Gain an understanding of history of Turkish language 4. Gain knowledge about Turkish languages in the world 5. Develop the ability of using Turkish properly 6. Learn the language policies 7. Gain writing skill 8. Gain speaking skill 9. Learn sentence structure and analyzing 10. Be able to realize Turkish vowels 11. Be able to realize formation of Turkish 12. Be able to read and comprehend 13. Be able to speak simultaneously 14. Be able to write compositions
Outcomes of the course	
Textbook of the course	1. Ergin, M. (1997). Üniversiteler İçin Türk Dili. İstanbul: Bayrak Yayınları 2. Kaplan, M. (1993). Kültür ve Dil. İstanbul: Dergâh Yayınları (8. baskı) 3. Fuat, M. (2001). Dil Üstüne. İstanbul: Adam Yayınları 4. Aksan, D. (1984). Türkçe'nin Gücü. Ankara: Bilgi Yayınevi (4. baskı) 5. Karamanlıoğlu, A. F. (1984). Türk Dili. İstanbul: Dergâh Yayınları (3. baskı) 6. Anday, M. C. (1996). Dilimiz Üstüne Konuşmalar. İstanbul: Yapı Kredi Yayınları 7. Karaağaç, G. (2002). Dil Tarih ve İnsan. Ankara: Akçağ Yayınevi 8. Aksan, D. (2003). Dil Şu Büyülü Düzen. Ankara: Bilgi Yayınevi

	9. Banarlı, N. S. (2002). Türkçe'nin Sırları. İstanbul: Kubbealtı Neşriyatı (18. baskı) 10. Parlatır,İ. & Korkmaz, Z. & Gülensoy, T. & Zülfikar, H. & Birinci, N. (2005). Türk Dili ve Kompozisyon. Ankara: Ekin Yayınları
Other reference books	
Required material for the course	

WEEKLY PLAN OF THE COURSE	
Week	**Topics**
1	Description and features of language
2	Description and features of language
3	Languages of the world
4	Position of Turkish among other languages
5	Historical development of Turkish
6	Historical development of Turkish
7	Development of western Turkish
8	Midterm
9	Midterm
10	Atatürk's ideas and projects on Turkish
11	Pronunciation
12	Punctuation
13	Punctuation
14	Language policies
15,16	Final

Contribution of the course to the program outcomes

NO	OUTCOMES OF THE PROGRAMME	4	3	2	1
1	Adequate knowledge of mathematics, science and Electrical and Electronic Engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving problems of Electrical and Electronic Engineering				x
2	Ability to identify complex engineering problems in Electrical and Electronic Engineering and related fields, for this purpose having skills to formulate, select and apply appropriate methods.				x
3	Having skills to apply modern design methods to design a complex system, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements concerning the Electrical and Electronic Engineering.				x
4	Having skills to develop, select and apply modern techniques and tools needed for Electrical and Electronic Engineering applications, skills to use information technology effectively.				x
5	Skills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of Electrical and Electronic Engineering problems				x
6	Ability to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas.				x
7	Communicating effectively in oral and written form both in Turkish and English.	x			
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to self-renewing		x		
9	Understanding of professional and ethical responsibility				x
10	Information on project management, change management and risk management practices, awareness on entrepreneurship, innovation and sustainable development.				x
11	Information about universal and societal effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.				x

Scale for assessing the contribution of the course to the program outcomes:

4: High **3: Medium** **2: Low** **1:None**

Name of Instructor(s):

Signature(s): **Date:**

ESOGU Aeronautical Engineering
Course Information Form

SEMESTER	SPRING

COURSE CODE	152412001	**COURSE NAME**	Physics II

SEMESTER	**WEEKLY COURSE PERIOD**			**COURSE OF**			
	Theory	**Practice**	**Laboratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
2	3	0	0	3	3	COMPULSORY (x) ELECTIVE ( )	Türkçe

COURSE CATAGORY			
Basic Science	**Basic Engineering**	**AeronauticalEngineering [if it contains considerable design, mark with (√)]**	**Social Science**
100		( )	

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	1st Mid-Term	1	30
	2nd Mid-Term		
	Quiz	2	10
	Homework		
	Project	1	10
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	Electric Charges; Coulomb's Law; The Electric Field; Electric Potential; Capacitance and Dielectrics; Current and Resistance; Magnetic Fields; Sources of the Magnetic Field; Faraday's Law, AC cureents, Electromagnetic waves
COURSE OBJECTIVES	To teach the basic concepts and laws of physics and practices of daily life.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	In practice, varieties of physical systems to recognize and solve problems and at the same time improve their ability to practice in daily life. Using them, students will realize the role of physics in applied sciences such as health sciences and engineering.
COURSE OUTCOMES	Students realize of the variety problems of physical systems and solve these problems. Understands the importance of measurement and the units. Physical systems apply in their personal daily life. Recognizes the role of physics in engineering and health sciences. The basic laws of physics and concepts.
TEXTBOOK	Physics For Scientists And Engineers Wıth Modern Physics Raymond A. Serway - John W. Jewett, - 8th Edition (International Edition), Brooks / Cole, 2010
OTHER REFERENCES	Physics for Scientists and Engineers with Modern Physics **By** Fishbane, P.M., Gasiorowicz, S., & Thornton, S.T. 3rd Edition, 2005 Prentice-Hall
TOOLS AND EQUIPMENTS REQUIRED	Calculater, Projector, Computer, Black board

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Electric Charges; Coulomb's Law
2	The Electric Field
3	The Electric Field, continuous charge distribution
4	Electric Potential
5	Capacitance and Dielectrics
6	Capacitance and Dielectrics
7	Current and resistivity
8	Mid-Term Examination
9	DC circuits, Kirchhoffís Rules
10	Magnetic fields
11	Sources of the Magnetic Field, Biot-Savart Laws
12	Sources of the Magnetic Field Ampere law
13	Faraday's Law and Induction
14	Altervative current and Electromagnetic Waves
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Metallurgical and Materials engineering; an ability to apply theoretical and practical knowledge on solving and modeling of Aeronauticalengineering problems.	**x**		
2	Ability to determine, define, formulate and solve complex Aeronauticalengineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for Aeronauticalengineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate Aeronauticalengineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. S. Deniz KORKMAZ **Date:**

Signature(s):

ESOGU Aeronautical Engineering
Course Information Form

SEMESTER	SPRING

COURSE CODE	152412002	COURSE NAME	Physics Lab II

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
2	0	0	2	1	2	COMPULSORY (X) ELECTIVE ( )	Turkish

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering [if it contains considerable design, mark with (√)]	Social Science
100		( )	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term		
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report	5	50
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	General instructions; Electrolysis; Magnetic Force; Ohm's Law; Resonance tube and stable waves; transformers
COURSE OBJECTIVES	learning the basic principles and concepts of physics
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	To use existing technology and to produce new technologies.
COURSE OUTCOMES	To explain natural phenomena and analysis learn the science of physics, Understanding of scientific method and research skills.
TEXTBOOK	**M.C.Baykul, E.Alğın, S.Eroğlu, C.Aşıcı, Physics I-II Lab Manuel foe scientist and engineers,** Eskisehir Osmangazi University
OTHER REFERENCES	Ekem, N. Ve Şenyel, M., **Fizik I-II Deneyleri**
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	General instructions
2	Electrolysis
3	Electrolysis
4	Magnetic force
5	Magnetic force
6	Ohm's law
7	Ohm's law
8	Mid-Term Examination
9	Transformers
10	Transformers
11	Resonance tube and stable waves
12	Resonance tube and stable waves
13	Compensated experiments
14	Compensated experiments
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Metallurgical and Materials engineering; an ability to apply theoretical and practical knowledge on solving and modeling of Metallurgical and Materials engineering problems.	**x**		
2	Ability to determine, define, formulate and solve complex Aeronauticalengineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for Metallurgical and Materials engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate Metallurgical and Materials engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**x**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Fen Edebiyat Fak.Öğretim Üyesi **Date:**

Signature(s):

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152412003	COURSE NAME	CALCULUS 2

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
2	4	0	0	4	5	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Mechanical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
X			

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	
COURSE DESCRIPTION	Polar coordinates. Curvilinear coordinate systems. Vectors. Partial derivatives. Vector differential operators. Multiple integrals. Integration in vector fields.
COURSE OBJECTIVES	Main objective of this course is to teach students basic concepts, theorems of calculus and provide them the ability to solve mathematical problems.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	By taking this course, the students gain necessary mathematical background for engineering courses and their professional lives.
COURSE OUTCOMES	1. Defining coordinate systems and vectors. 2. Solving problems with partial derivatives. 3. Defining vector differential operators. 4. Solving problems with multiple integrals. 5. Defining integral theorems related to vector fields. 6. Solving problems with line and surface integrals.
TEXTBOOK	George B. Thomas Jr., Thomas' Calculus, 12th edition, Pearson Publications, 2009.
OTHER REFERENCES	- Abdülkadir Özdeğer ve Nursun Özdeğer, Çözümlü Yüksek Matematik Problemleri Cilt I, İTÜ Fen Fakültesi Yayınları, 1994. - Ahmet A. Karadeniz, Yüksek Matematik Cilt: 2, 9. Baskı, Çağlayan Kitabevi, 2007. - Ahmet A. Karadeniz, Yüksek Matematik Cilt: 3, 8. Baskı, Çağlayan Kitabevi, 2004.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Parametric curves.
2	Polar coordinates. Graphing in polar coordinates.
3	Vectors. Dot product. Cross product. Curvilinear coordinate systems.
4	Functions of several variables. Limits and continuity. Partial derivatives.
5	Partial derivative. Chain rule. Directional derivatives.
6	Extreme values and saddle points. Lagrange multipliers.
7	Gradient, divergence and curl operators.
8	Midterm
9	Gradient, divergence and curl operators.
10	Double integrals and their applications
11	Triple integrals and their applications.
12	Line and surface integrals.
13	Line and surface integrals.
14	Green's theorem in the plane. Gauss' and Stokes' theorems.
15,16	Final

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	X		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			X
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			X
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			X
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			X
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			X
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			X
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.			X
9	Understanding of professional and ethical issues and taking responsibility			X
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			X
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			X
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Assist Prof. Dr. Emrah Atılgan

Signature: **Date:** 10/07/2021

ESOGÜ Aeronautical Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152412004	COURSE NAME	Fundamentals of Computer Programming

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
II	2 hours	2	0	3	5	COMPULSORY ( ) ELECTIVE ( )	TURKISH() ENGLISH (X)

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
0	3		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework	1	10
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Introduction to Python programming; flow diagram, data types/conversion, operators, expressions and statements, interpreters, conditionals, loops, functions, basic structure of a program, arrays
COURSE OBJECTIVES	Learn to write simple programs in Python
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Students aiming to be a future programmer get familiar with introductory details of the programming in Python.
COURSE OUTCOMES	1. Students will know how to write simple programs in Python. 2. Understand and follow code written in this language. 3. Gain ability to create simple algorithms and methods to solve simple problems
TEXTBOOK	Brian Heinold, A Practical Introduction to Python Programming
OTHER REFERENCES	Lecture notes, previous exams and homeworks, resources on the internet
TOOLS AND EQUIPMENTS REQUIRED	Accessible computers for each student, installed Public Licensed Python and additional development applications.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Getting started, Installing Python, A first program, printing, Variables
2	For loops
3	Numbers
4	İf statements
5	Misc. Topics I; Counting, Summing, Swapping, Flag variables, Comments, Simple Debugging
6	Strings
7	Lists
8	Ara sınav
9	While loops
10	Misc. Topics II; str,int,float, and list. String formatting
11	Dictionaries
12	Text Files
13	Functions
14	Object-Oriented Programming
15,16	Graphics

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.		**x**	
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**x**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**x**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.		**x**	
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**x**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**x**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**x**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**x**	
9	Understanding of professional and ethical issues and taking responsibility		**x**	
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**x**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**x**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Dr. Öğr. Üyesi Gökhan DINDIŞ

Signature: **Date:**

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152412005	COURSE NAME	Introduction to Aerial Vehicles

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
2nd	3	-	-	3	5	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X	X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	20
	2nd Mid-Term		
	Quiz		
	Homework	4	40
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	40

PREREQUIEITE(S)	152411xxx - Uçak Mühendisliğine Giriş (152411xxx - Introduction to Aeronautical Engineering)
COURSE DESCRIPTION	Understanding aircraft morphology and performance characteristics, deriving necessary equations of motion and performance equations.
COURSE OBJECTIVES	Understanding the standard atmosphere model, understanding aerostatic buoyancy and aerodynamic lift forces, understanding fixed-wing aircraft morphology, control surfaces and operating principles, deriving equations of motion with point-body approach, cruising, climbing, descending, take-off, landing, return flights in turbojet and piston-propeller aircraft. equations, determination of required performance parameters (L/D, W/S, T/W…) for minimum and maximum flight capabilities (maximum lift, maximum range, minimum turning radius, minimum descent rate,…), flight and performance envelopes understanding, understanding the Vn diagram, understanding the energy model.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Derivation of performance equations of turbojet and piston-propeller airplanes, their use in design and analysis activities.
COURSE OUTCOMES	Upon successful completion of the course, the student will have the following abilities: - Learning basic aircraft elements, control surfaces and operating principles, - Derivation of standard atmosphere model equations, - Learning aerostatic lift and aerodynamic bearing forces, - Performance calculations for turbojet and piston-propeller airplanes
TEXTBOOK	Uçuşa Başlangıç (Introduction To Flight), John D. Anderson, Jr., (Çev: Adil Yükselen), Nobel Akademik Yayıncılık, Nobel Akademik Yayıncılık
OTHER REFERENCES	Yechout, T. R., & Morris, S. L. (2003). Introduction to aircraft flight mechanics: Performance, static stability, dynamic stability, and classical feedback control. Reston, VA: American Institute of Aeronautics and Astronautics.
TOOLS AND EQUIPMENTS REQUIRED	Projector, overhead document projector,

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Standard atmosphere
2	Standard atmosphere
3	Aerostatic lift (balloons and airships)
4	Fixed-wing aircraft morphology
5	Fixed-wing aircraft morphology
6	Aerodynamic lift and aerodynamic coefficients
7	Aerodynamic lift and aerodynamic coefficients
8	Equations of motion with point-body approach
9	Midterm
10	Steady state level flight performance equations
11	Steady state level flight performance equations
12	Climb and descent flight performance equations
13	Climb and descent flight performance equations
14	Turning flight performance equations
15,16	Turning flight performance equations

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.		**X**	
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	**X**		
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	**X**		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature:

Date:

Dr. Öğr. Üyesi Zafer ÖZNALBANT 12.07.2021

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152412006	COURSE NAME	STATICS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
2	3	0	0	3	3	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None
COURSE DESCRIPTION	The course, Statics deals with forces acting on particles or rigid bodies at rest state. Forces are from a wide range covering forces in plane, forces in space, equilibrium, moment of a force, moment of a couple etc. Within the scope of this course, analyses on resultant forces are given. In addition to single bodies, force analyses in many-body systems such as structures and assemblies are taught. The course mainly needs a trigonometry background along with main physics concepts.
COURSE OBJECTIVES	To provide the basic skills required of engineering students in mechanics of static structures.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Basic knowledge and ability for analyzing static structures in engineering applications.
COURSE OUTCOMES	1. etermining force and moment components. 2. nderstanding vector analysis, computing dot products, moments and resultants related to engineering problems. 3. roducing simple Free-Body-Diagrams for static structures. 4. olving equilibrium equations of static structures. 5. inding member forces in many-body systems such as trusses, frames and structures.
TEXTBOOK	R. C. Hibbeler, Engineering mechanics. Statics, Fourteenth edition. Hoboken, N.J: Pearson Prentice Hall, 2016.
OTHER REFERENCES	J. L. Meriam and L. G. Kraige, Engineering mechanics. Statics. Hoboken, Wiley, 2010.

TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	General Principles: Mechanics, Fundamental Concepts, Units of Measurement, The International System of Units, Numerical Calculations, General Procedure for Analysis
2	Force Vectors: Scalars and Vectors, Vector Operations, Vector Addition of Forces, Addition of a System of Coplanar Forces, Cartesian Vectors, Addition of Cartesian Vectors, Position Vectors
3	Equilibrium of a Particle: Force Vector, Dot Product, Condition for the Equilibrium of a Particle, The Free-Body Diagram, Coplanar Force Systems, Three-Dimensional Force Systems
4	Force System Resultants: Moment of a Force-Scalar Formulation, Cross Product, Moment of a Force-Vector Formulation, Principle of Moments, Moment of a Force, Moment of a Couple
5	Force System Resultants: Simplification of a Force and Couple System, Further Simplification of a Force and Couple System, Reduction of a Simple Distributed Loading
6	Equilibrium of a Rigid Body: Conditions for Rigid-Body Equilibrium, Free-Body Diagrams, Equations of Equilibrium, Two- and Three-Force Members
7	Equilibrium of a Rigid Body: Free-Body Diagrams, Equations of Equilibrium, Constraints
8	Mid-Term Exam
9	Structural Analysis: Simple Trusses, The Method of Joints, Zero-Force Members, The Method of Sections, Space Trusses, Frames and Machines
10	Internal Forces: Internal Loadings Developed in Structural Members, Shear and Moment Equations and Diagrams, Relations between Distributed Load, Shear, and Moment, Cables
11	Friction: Dry Friction, Problems Involving Dry Friction, Wedges, Frictional Forces on Screws
12	Friction: Frictional Forces on Flat Belts, Frictional Forces on Collar Bearings, Pivot Bearings, and Disks, Frictional Forces on Journal Bearings, Rolling Resistance
13	Center of Gravity and Centroid: Center of Gravity, Center of Mass, and the Centroid of a Body, Composite Bodies, Resultant of a General Distributed Loading
14	Moments of Inertia: Definition of Moments of Inertia for Areas, Product of Inertia for an Area, Moments of Inertia for an Area about Inclined Axes, Mohr's Circle for Moments of Inertia
15,16	Final Exams

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Selim GÜRGEN

Signature:

Date: 25.05.2021

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152412007	COURSE NAME	ACADEMIC WRITING

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
2	3	0	0	3	4	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
			100

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	30
	2nd Mid-Term		
	Quiz		
	Homework		30
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	100

PREREQUIEITE(S)	NONE
COURSE DESCRIPTION	Writing process, brainstorming, planning, drafting, revising, editing, paragraph writing, 5-paragraph essay, introduction, body and conclusion paragraphs, process essay, classification essay, cause-effect essay, comparison-contrast essay
COURSE OBJECTIVES	Writing process, brainstorming, planning, drafting, revising, editing, paragraph writing, 5-paragraph essay, introduction, body and conclusion paragraphs, process essay, classification essay, cause-effect essay, comparison-contrast essay
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Development of written communication skills Introduction to the professional composition writing
COURSE OUTCOMES	Having successfully completed this course, students should be able to write 5-paragraph or longer essays without borrowing information.
TEXTBOOK	Karen Blanchard and Christine Root, Ready to Write More, Longman, 1997
OTHER REFERENCES	Ellen Lipp, From Paragraph to Term Paper, Macmillan,
TOOLS AND EQUIPMENTS REQUIRED	Ruled sheets of paper or a notebook

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to the course, purpose and expectations
2	The writing process
3	Subject, purpose and audience
4	Developing paragraphs
5	Unity and coherence in paragraphs
6	5-Paragraph essay, introduction and conclusion paragraphs
7	Process essay
8	MIDTERM
9	Process essay
10	Process essay practice
11	Classification essay
12	Cause/Effect essay
13	Cause/Effect essay practice
14	Comparison/contrast essay
15,16	FINAL

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of aeronautical engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex aeronautical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for aeronautical engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate aeronautical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**X**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	**X**		
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.			**X**
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:** 29/06/2021

ESOGÜ Mechanical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152412008	COURSE NAME	OCCUPATIONAL HEALTH and SAFETY 2

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
2	1	0	0	1	1	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Mechanical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	20	30	50

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	NONE
COURSE DESCRIPTION	Concept of Occupational Health and Safety and its development; Developments related to Occupational Health and Safety in the World and in Turkey; A general view of Occupational Health and Safety and culture of safety, the tasks belong to institutions, organizations and workers in forming the safety culture; National and international institutions, agreements related to Occupational Health and Safety; Occupational Health and Safety management systems; Danger and risk terms in Occupational Health and Safety; Risk management, evaluation and methodology, risk analysis and case studies; Occupational Health and Safety risk reasons (physical, chemical, biological…); Occupational accident, reasons, preventing and protecting principles; Occupational diseases, reasons, preventing and protecting principles; Ergonomy; First aid
COURSE OBJECTIVES	To educate students on basic Occupational Health and Safety; to form safety culture; to give information about the aim and scope of 6331 numbered Occupational Health and Safety law; to give basic information about tasks, authority and responsibilities to provide Occupational Health and Safety in works; to educate employer and workers basically about right and obligation in work; student To provide following legal regulation and evaluating Occupational Health and Safety subject to students
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Evaluation of Occupational Health and Safety in Aeronautical Engineering
COURSE OUTCOMES	To learn Occupational Safety regulations and basic terms of Occupational Occupational accident definition, reasons and ability to use international accident evaluation methodologies To learn national institutions related to Occupational Safety, Occupational Safety specialist authority and responsibilities

	To learn design and standarts of work equipments oriented to Occupational Safety, education of health safety in works, documentation, OHSAS 18001 (TS 18001) Occupational Health and Safety quality standarts To learn regulations related to occupation
TEXTBOOK	Özkılıç, Ö. (2005), İş Sağlığı ve Güvenliği Yönetim Sistemleri ve Risk Değerlendirme Metodolojileri, TİSK Yayınları, Ankara.Bahr, N.J., 1997. System Safety Engineering and Risk Assesment: A Practical Approach, Taylor&Francis, Ney York, 251 s. Hale, A. & Baram, M.,1998. Safety Management The Challenge of Change, Pergamon, Netherlands, 275 s. Bayır, M., Ergül, M. (2006), İş Güvenliği, Alfa Aktüel Yayınları, s: 213, Bursa. İş Güvenliği Uzmanlığı Temel Eğitim Notları; Kanun, Tüzük ve Yönetmelikler; Mevzuatlar; Ders Notları; Slaytlar, Videolar ve Fotoğraflar.
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	Computer and projector

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Information about Occupational Health and Safety regulations
2	Employer and worker legal right and liabilities
3	Legal results originated from work accidents and occupational diseases
4	Occupational Health and Safety commitees
5	Work area observation, work hygiene, work area cleanliness and layout
6	Flaming, explosion, fire and fire protection
7	Electric, its hazards, risks and precautions
8	MIDTERM
9	Operating and protection principles in screened vehicles
10	Occupational Health and Safety in hand-lifted and transport work
11	Safety usage of work equipments and personal protector
12	Safety and health signs
13	Required Checks and correction required documents from the view of Occupational Health and Safety
14	Emergency action plans, exits, eviction and rescue
15,16	FINAL

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of aeronautical engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex aeronautical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for aeronautical engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate aeronautical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**X**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	**X**		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Işıl YAZAR

Signature: **Date:** 29/06/2021

ESOGÜ Aeronautical Engineering Department

COURSE CODE: 152412XXX **COURSE TITLE:** Turkish II

Semester	Weekly Hours		COURSE		
	Theoretical	Practical	Credits	ECTS	Type
2	2	0	0	2	Compulsory (x) Elective ( )

Write the credit (for non-credit courses weekly hours) below (If necessary distribute the credits.).

Math and Basic Science	Electrical Engineering [mark (√) if there is high design content]	General Education	Humanities
	( )	2	

Assessment	THEORETICAL-PRACTICAL COURSES			LABORATORY COURSES		
	Type	Number	%	Activity Type	Number	%
Midterm	Midterm	1	50	Quiz		
	Quiz			Lab performance		
	Homework			Report		
	Project			Oral exam		
	Other (……)			Other (……)		
Final		1	50			
Makeup exam (Oral/Written)						

Prerequisites	-
Brief content of the course	The contents of this course are word information, word sorts, sentence and word order of Turkish, composition, kinds of oral and written composition, oral and written narration techniques, present problems of Turkish, text (poetry, novel, story, article, etc.) analyzing methods.
Objectives of the course	The subject of the course is to expose the value of Turkish language by giving information about development of Turkish language, to gain national language awareness, to develop reading and writing skills, to compare and contrast Turkish language to other languages, to compare and contrast language policy of developed countries to Turkish language policy, to gain skill of speaking.
Contribution of the course towards professional education	15. Learn Turkish grammar 16. Develop the ability of using Turkish properly 17. Gain knowledge of present problems of Turkish 18. Be able to read and comprehend 19. Learn text analyzing methods 20. Learn about the Turkish language policy and be able to make comments on improving the policy 21. Gain writing skill 22. Gain speaking skill 23. Learn narration techniques 24. Be able to pronounce vowels 25. Be able to read phonetically right 26. Be able to write compositions 27. Be able to write on his/her ideas 28. Be able to talk on his/her ideas
Outcomes of the course	
Textbook of the course	1. Ergin, M. (1997). Üniversiteler İçin Türk Dili. İstanbul: Bayrak Yayınları 2. Kaplan, M. (1993). Kültür ve Dil. İstanbul: Dergâh Yayınları (8. baskı) 3. Fuat, M. (2001). Dil Üstüne. İstanbul: Adam Yayınları 4. Aksan, D. (1984). Türkçe'nin Gücü. Ankara: Bilgi Yayınevi (4. baskı) 5. Karamanlıoğlu, A. F. (1984). Türk Dili. İstanbul: Dergâh Yayınları 6. Anday, M. C. (1996). Dilimiz Üstüne Konuşmalar. İstanbul: Yapı Kredi Yayınları 7. Karaağaç, G. (2002). Dil Tarih ve İnsan. Ankara: Akçağ Yayınevi 8. Aksan, D. (2003). Dil Şu Büyülü Düzen. Ankara: Bilgi Yayınevi 9. Banarlı, N. S. (2002). Türkçe'nin Sırları. İstanbul: Kubbealtı Neşriyatı 10. Parlatır,İ. & Korkmaz, Z. & Gülensoy, T. & Zülfikar, H. & Birinci, N.

	(2005). Türk Dili ve Kompozisyon. Ankara: Ekin Yayınları
Other reference books	
Required material for the course	

WEEKLY PLAN OF THE COURSE	
Week	**Topics**
1	Word information
2	Word sorts
3	Sentence and word order of Turkish
4	Sentence and word order of Turkish
5	Composition
6	Composition
7	Kinds of oral and written composition
8	Midterm
9	Midterm
10	Oral and written narration techniques
11	Oral and written narration techniques
12	Present problems of Turkish
13	Text (poetry, novel, story, article, etc.) analyzing methods
14	Text (poetry, novel, story, article, etc.) analyzing methods
15,16	Final

Contribution of the course to the program outcomes

NO	OUTCOMES OF THE PROGRAMME	4	3	2	1
1	Adequate knowledge of mathematics, science and Electrical and Electronic Engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving problems of Electrical and Electronic Engineering				x
2	Ability to identify complex engineering problems in Electrical and Electronic Engineering and related fields, for this purpose having skills to formulate, select and apply appropriate methods.				x
3	Having skills to apply modern design methods to design a complex system, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements concerning the Electrical and Electronic Engineering.				x
4	Having skills to develop, select and apply modern techniques and tools needed for Electrical and Electronic Engineering applications, skills to use information technology effectively.				x
5	Skills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of Electrical and Electronic Engineering problems				x
6	Ability to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas.				x
7	Communicating effectively in oral and written form both in Turkish and English.	x			
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to self-renewing		x		
9	Understanding of professional and ethical responsibility				x
10	Information on project management, change management and risk management practices, awareness on entrepreneurship, innovation and sustainable development.				x
11	Information about universal and societal effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.				x

Scale for assessing the contribution of the course to the program outcomes:

4: High **3: Medium** **2: Low** **1:None**

Name of Instructor(s):

Signature(s): **Date:**

ESOGU AERONAUTICAL ENGINEERING DEPARTMENT
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152413001	COURSE NAME	DIFFERENTIAL EQUATIONS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
3	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
X		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	NONE
COURSE DESCRIPTION	Differential equations and solutions, first-order differential equations and solution methods, applications of first-order differential equations, higher order differential equations and solution methods, Laplace transform and applications, linear differential equation systems.
COURSE OBJECTIVES	The main of the course is to introduce the basic terminology of differential equations and to examine, how differential equations are derived in an attempt to formulate, or describe, physical phenomena in terms of mathematics.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	To apply theoretical and practical knowledge on solving and modeling of engineering problems by using sufficient knowledge of engineering subjects related with mathematics.
COURSE OUTCOMES	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.
TEXTBOOK	Özer, N. ve, Eser, D. “Diferensiyel Denklemler”, Eskişehir.
OTHER REFERENCES	A Palm, W.J., A Yunus A. Cengel, D., “Differential Equations for Engineers and Scientists”, McGraw-Hill Education
TOOLS AND EQUIPMENTS REQUIRED	Blackboard, computer and projection

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Definition and classification of differential equations, first-order differential equations, separable equations, homogeneous equations and solution methods
2	Exact differential equations and solution methods, integrating factors
3	Linear and nonlinear differential equation and solution methods
4	Higher-degree differential equations, substitutions.
5	Applications of first-order differential equations
6	Higher-order differential equations and solution methods, differential equations with the dependent and independent variables,
7	Linear differential equations, linear dependence and linear independence, homogeneous linear equations and solution methods
8	Midterm Exam
9	Midterm Exam
10	Solutions of non- homogeneous linear equations and linear differential equations with constant coefficients, Cauchy-Euler and Lagrange equations and solution methods
11	Laplace transform and applications
12	Inverse Laplace transform and applications
13	Linear differential equation systems
14	Solution methods of the linear differential equation systems
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	**X**		
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.		**X**	
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**X**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Dr. Öğr. Üy. S. Fehmi DİLTEMİZ

Signature:

Date: 06/05/2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152413002	COURSE NAME	MECHANICS OF MATERIALS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
3	4	0	0	4	6	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Introduction to stress and strain concepts. Concept of analysis and design. Joints. Introduction to determinate and indeterminate problems and composites. Stress concentrations, simple optimization, linearly elastic and elastic-perfectly plastic problems in axial loading, torsion, and pure bending cases. Transverse loading and bending of beams. Analysis of shear stresses.
COURSE OBJECTIVES	To give the basics of stress analysis and design and to prepare them for higher level stress analysis courses.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Basic knowledge and ability for stress analyses and design in engineering applications.
COURSE OUTCOMES	1. Understanding stress and strain concepts. 2. Understanding the loading modes. 3. Analyzing the structures in terms of stress and strain aspects. 4. Gaining the basics of structural design.
TEXTBOOK	F. P. Beer and E. R. Johnston, Jr., "Mechanics of Materials", Mc Graw-Hill Book, 1992.
OTHER REFERENCES	R. C. Hibbeler, "Mechanics of Materials" Prentice-Hall International Edition, 1994.
TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction
2	Pure Axial Loading
3	Pure Axial Loading
4	Pure Torsion
5	Pure Torsion
6	Pure Bending
7	Pure Bending
8	Mid-Term Exam
9	Transverse Loading (or Bending with Shear)
10	Eccentric Axial Loading and Bending
11	Unsymmetric Bending
12	General Combined Loadings (Axial Loading/Torsion/Bending)
13	Stress Transformations
14	Deflection in Beams, Strain Energy
15,16	Final Exams

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Selim GÜRGEN

Signature: **Date:** 25.05.2021

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152413003	COURSE NAME	DYNAMICS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
3	3	0	0	3	4	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Dynamics of particles and rigid bodies, applications of free-body diagrams, Newton's second law, the impulse-momentum method and the work-energy principle to solve dynamic problems in mechanical systems.
COURSE OBJECTIVES	The objective of the course is to introduce the physical principles to the analysis of particle and rigid-body motion problems.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Knowledge acquired and skills developed in this class are used extensively in later engineering courses.
COURSE OUTCOMES	By the end of this course, students will be able to: • draw the free-body diagram for a particle or for a rigid body in plane motion • relate linear and angular impulse to changes in the linear and angular momentum of a particle; • relate the work done by one or more forces to changes in the kinetic energy of a particle; • implement the concepts of force/acceleration, impulse/momentum, and work/energy to closed systems of particles; • relate the motion of one location on a rigid body to that of another; and • extend the concepts of force/acceleration, impulse/momentum, and work/energy to one or more rigid bodies.
TEXTBOOK	Vector Mechanics for Engineers – Dynamics, F.P. Beer, E.R. Johnston, P.J. Cornwell
OTHER REFERENCES	Engineering Mechanics – Dynamics, R.C. Hibbeler
TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction, basic terms
2	Particle kinematics; rectilinear motion (position-velocity-acceleration, relative and dependant motions, uniform rectilinear and uniform accelerated rectilinear motions), curvilinear motion (position-velocity-acceleration, relative motion, recatangular components), derivatives of vector functions
3	Particle kinematics; projectile motion, tangential-normal and radial-transverse components
4	Particle kinetics; Newton's 2nd law of motion: linear momentum, equations of motion, dynamic equilibrium, free-body diagrams, normal-tangential and radial-transverse components (equations of motion), angular momentum
5	Particle kinetics; Newton's 2nd law of motion: conservation of angular momentum, particle trajectory under a central force, radial-transverse components (equations of motion), Newton's law of universal gravitation
6	Particle kinetics; Energy and Momentum Methods: work-energy principle, power and efficiency
7	Particle kinetics; Energy and Momentum Methods: potential energy, conservative forces (motions governed by conservative forces), conservation of energy, impulsive motion, impulse-momentum principle
8	Mid-Term Exam
9	Particle kinetics; Energy and Momentum Methods: impact, direct-oblique central impacts, problems involving multiple principles
10	Systems of particles: applying Newton's law and momentum principles, motion of the mass center, angular momentum about the mass center, conservation of momentum
11	kinetic energy, work-energy principle and conservation of energy, impulse-momentum principle, steady stream of particles, mass gaining or losing streams
12	Kinematics of rigid bodies; translation, rotation, general plane motion, absolute and relative velocity acceleration in plane motion, instant center of rotation, motions relative to a rotating frame (planar and 3D)
13	Plane motion of rigid bodies: Forces and accelerations
14	Plane motion of rigid bodies: Energy and momentum principles
15,16	Final Exams

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Selim GÜRGEN

T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
AERONAUTICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152413004	COURSE NAME	MATERIALS SCIENCE

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
3	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Subjects [if it contains considerable design, mark with (√)]	Social Science
	X	( )	

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	40
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)	1	20
FINAL EXAM		1	40

PREREQUIEITE(S)	
COURSE DESCRIPTION	Internal Structure of Materials, Crystalline Structure, Crystal Defects, Miller Indices, Phase Rules, Alloys, Phase Diagrams, Corrosion, Wear, Mechanical Behaviour of Materials: Hardness, Tensile Test, Compression Test, Bending and Torsion Test, Creep, Stress Relaxation Test, Impact Test and Fatigue
COURSE OBJECTIVES	To instruct the fundamental informations about materials, to estimate reliable suggestions about performance of materials and life on service
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	1.Structure and constitution of materials 2.Definition of material's properties
COURSE OUTCOMES	Knowledge of materials structure and properties, interpration of materials properties, adaptation of theoretical knowledge to practical applications, experimental studies of materials science, design of materials, determining of working conditions of engineering materials
TEXTBOOK	Malzeme Bilimi ve Mühendisliği, Çev. Kenan Genel, Nobel Yayın, 2014
OTHER REFERENCES	1. Elements of Materials Science and Engineering, Vlack, L.H.V., Addison-Wesley Pub.Co., 1995 2. Malzeme Bilimi ve Mühendisliği, Smith, W.F., Çev.Kınıkoğlu, N., lit. 3.Malzeme bilgisi I-II, Bargel, Çev. Güleç, Ş., Tübitak Yayınları,1987 4.Malzemelerin Yapı ve özellikleri, I-II-III-IV, Moffat, W.G., Pearsall, G.W., Çev. Onaran, K., İTÜ Yayınları, 1992
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Internal Structure of Materials
2	Crystalline Structure, Crystal Defects
3	Miller Indices
4	Phase Rules, Alloys
5	Phase Diagrams
6	Mechanical Behaviour of Materials,: Hardness
7	Tensile Test and Compression Test
8	Mid-Term Examination
9	Mid-Term Examination
10	Bending and Torsion Test
11	Creep
12	Corrosion and Wear,
13	Stress Relaxation Test
14	Impact and Fatigue Test
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and mechanical engineering; an ability to apply theoretical and practical knowledge on solving and modeling of mechanical engineering problems.	[ ]	[X]	[ ]
2	Ability to determine, define, formulate and solve complex mechanical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	[ ]	[X]	[ ]
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	[ ]	[X]	[ ]
4	Ability to develop, select and use modern methods and tools required for mechanical engineering applications; ability to effective use of information technologies.	[X]	[ ]	[ ]
5	In order to investigate mechanical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[X]	[ ]	[ ]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[ ]	[ ]	[X]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[ ]	[ ]	[X]
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	[X]	[ ]	[ ]
9	Understanding of professional and ethical issues and taking responsibility	[X]	[ ]	[ ]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[ ]	[X]	[ ]
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	[ ]	[ ]	[X]
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Dr. Öğr. Üy. S. Fehmi DİLTEMİZ **Date:** 09/05/2022

Signature(s):

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152413005	COURSE NAME	FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
3	3	0	0	3	4	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Basic concepts, resistive circuits, resistivity, Kirchhoff's current and voltage laws, Electric power and energy, nodal analysis, mesh analysis, Thevenin Equivalent, Maximum Power Transfer, operational amplifiers, first order circuits, second order circuits, frequency domain analysis, active and reactive power, Semiconductors and pn-junctions, Transistors, Solar cells, Electric Motors, and Electrical safety
COURSE OBJECTIVES	1- Providing basic information about electricity, electronic components, power, energy, solar cells and electrical machinery 2- Providing basic information about electrical safety
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Sufficient knowledge of engineering subjects related with mathematics, science and mechanical engineering
COURSE OUTCOMES	1- Ability to analyze resistive and first order electric circuits 2- Ability to analyze ac RLC circuits 3- Understanding of semiconductor switches and solar cells. 4- Basic information about electric motors and electric safety.
TEXTBOOK	Bobrow, L S., "Fundamentals of Electrical Engineering", Rinehart and Winston, Inc. 1985.
OTHER REFERENCES	Any circuit analysis book
TOOLS AND EQUIPMENTS REQUIRED	none

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Importance of electricity and electronics in engineering, Basic concepts, Electric Current
2	Sources, Ohm's Law, resistivity, Kirchhoff's current law, Electric power and energy
3	Nodal analysis
4	Kirchhoff's voltage law, mesh analysis
5	Thevenin and Norton Equivalents, Maximum Power Transfer, operational amplifiers
6	Inductance, Capacitance, first order circuits
7	Second order circuits, frequency domain analysis, impedance, active and reactive power
8	Midterm
9	Semiconductors and pn-junctions
10	Diode circuits, Transistors
11	Transistor as a switch
12	Solar cells
13	Electric Motors
14	Electrical safety
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.		**X**	
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.		**X**	
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Doç. Dr. Işıl Yazar

Signature:

Date:

T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
AERONAUTICAL ENGINEERING DEPARTMENT

SEMESTER	AUTUMN

COURSE CODE	152413006	COURSE NAME	Linear Algebra

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
3	3	0	0	3	4	COMPULSORY (x) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	30
	2nd Mid-Term	3	30
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	40

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Linear equations and matrices, solving linear systems, vector spaces, inner product spaces, linear transformations, determinants, eigenvalues and eigenvectors
COURSE OBJECTIVES	To be able to use matrices and vectors, to apply basic methods to solve linear systems, to make matrix and vector operations in n-dimensional space, to be able to make eigen-decomposition.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	In this course students learn how to use matrices and vectors in order to solve related basic engineering problems. Also this course is necessary to understand the important topics taught in the other Aeronautical engineering classes.
COURSE OUTCOMES	1) Students can find the solution of linear equation and system. 2) Students can use matrices and vectors in confidence. 3) Students can easily find a vector sets spanning different real vector spaces. Students can make eigen-decomposition on matrix.
TEXTBOOK	**B. Kolman, D. R. Hill, *Elementary Linear Algebra*, Prentice Hall, 8th edition, 2004.**
OTHER REFERENCES	1) D. C Lay, *Linear Algebra and Its Applications*, Addison Wesley Longman, Inc., 2n edition 1997. 2)**D. Poole, *Linear Algebra - a Modern Introduction*, Thomson Brooks/Cole, 2006**
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Linear systems and matrices
2	Solving linear systems
3	Special matrices and finding inverses
4	LU decomposition
5	Vector Spaces
6	Subspaces and linear independence
7	Span and linear independence
8	Midterm
9	Midterm
10	Homogeneous systems
11	Inner product spaces
12	Linear Transformations and transformation matrices
13	Determinants
14	Eigenvalues and eigenvectors
15,16	Final

NO	PROGRAM OUTCOMES	3	2	1
1	Adequate knowledge of mathematics, science and Aeronautical Engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving complex problems of Aeronautical Engineering			
2	Ability to identify complex engineering problems in Aeronautical Engineering and related fields, for this purpose having skills to formulate, select and apply appropriate methods.			
3	Having skills to apply modern design methods to design a complex system, process, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements concerning the Aeronautical Engineering.			
4	Having skills to develop, select and apply modern techniques and tools needed to analyze and solve complex applications in Aeronautical Engineering, skills to use information technology effectively.			
5	Skills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of complex problems in Aeronautical Engineering			
6	Ability to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas.			
7	Communicating effectively in oral and written form both in Turkish and English. Effective report writing and understanding written reports, preparing design and manufacturing reports, making effective presentations, skills to give and receive clear and concise instructions.			
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to self-renewing			
9	Understanding of professional and ethical responsibility			
10	Information on project management, change management and risk management practices, awareness on entrepreneurship and innovation, knowledge on sustainable development.			
11	Information about universal and societal effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.			
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): **Dr. Öğr. Üy. S. Fehmi DİLTEMİZ**

Signature:

Date: 05 / 05 / 2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152413007	COURSE NAME	ATATÜRK İLKELERİ VE İNKILÂP TARİHİ I

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
3	2	0	0	2	2	COMPULSORY (X) ELECTIVE ( )	TURKISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Mechanical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
			X

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	
COURSE DESCRIPTION	Tarih açısından Türk Devriminin temellerini, Türk devrimin tarihi gelişimi, zaman dizinsel eksende karşılaştırmalı olarak ele alınarak, Tam bağımsızlık ve Ulusal egemenlik kavramlarını irdelemekte, verilen savaşım genç bireylere aktarılmaktadır.
COURSE OBJECTIVES	Öğrencilerin, Atatürk ilke ve devrimlerine bağlı, laik, demokratik ve çağdaş değerleri benimseyen ve koruyan bireyler olarak yetişmelerini sağlamak. Bu ders boyunca öğrencilere, demokrasinin çağımızın en iyi yaşam tarzı olduğu kavratılır, demokrasinin korunması ve geliştirilmesi bilinci kazandırılır.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Kişilik gelişimini tamamlama sürecinde tam bağımsızlık ve ulusal egemenlik kavramları ile bilinçlenme işleminin tamamlanmaktadır. Dersin genel anlamda, kendini gerçekleştiren, kültürlü, gündeme duyarlı olan eleştirel yaklaşımı benimsemiş, yapıcı ve çözüm odaklı birey oluşturma sürecinde katkısı gözlenmiştir
COURSE OUTCOMES	Sosyal bilimlere ilişkin bilgilerini uygulama becerisi Verileri analiz edebilme, değerlendirebilme ve tasarlama becerisi Disiplinler arası bir takıma liderlik edebilme becerisi Yaşama karşılaştırmalı bakabilme becerisi, mesleki ve etik sorumluluğu anlama, etkin yazılı ve sözlü iletişim becerisi Verilerin ulusal ve küresel tesiri ile sonuçlarını anlama becerisi Hayat boyu öğrenimin önemini kavrama ve uygulama becerisi Mesleki güncel konuları izleme becerisi Bağımsız ya da danışman yönetiminde bilimsel araştırma yapabilme becerisi
TEXTBOOK	Gazi Mustafa Kemal Atatürk, Nutuk (Söylev), C. I-II, TTK., Ankara, 1986. İmparatorluktan Ulus Devlete Türk İnkılâp Tarihi, Cemil Öztürk (ed.), Ank., 2011.

OTHER REFERENCES	Niyazi Berkes, Türkiye'de Çağdaşlaşma, İstanbul, 1978. Enver Ziya Karal, Atatürk ve Devrim (Konferanslar ve Makaleler), TTK., Ankara, 1980. Enver Ziya Karal, Atatürk'ten Düşünceler, MEB. Yay., Ankara, 1981. Bernard Lewis, Modern Türkiye'nin Doğuşu, Çev.M.Kıratlı, TTK., Ankara, 1970. Ahmet Mumcu, Tarih Açısından Türk Devriminin Temelleri ve Gelişimi, Ankara, 1976.
TOOLS AND EQUIPMENTS REQUIRED	Projeksiyon Makinesi, Harita, Fotoğraf, İstatistikî Tablolar, Grafikler

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Atatürk İlkeleri ve İnkılâp Tarihi dersini okutmanın amacı ve İnkılâp kavramı
2	Osmanlı İmparatorluğu'nun Yıkılışını ve Türk inkılâbını Hazırlayan Sebeplere Toplu Bakış
3	Osmanlı İmparatorluğu'nun Parçalanması (Trablusgarp, Balkan Savaşları ve Birinci Dünya Savaşı)
4	Mondros Ateşkes Antlaşması
5	İşgaller Karşısında Memleketin Durumu ve Mustafa Kemal Paşa'nın Tepkisi
6	Mustafa Kemal Paşa'nın Samsun'a Çıkışı, Milli Mücadele İçin İlk Adım, Kongreler Yolu İle Teşkilatlanma
7	Kuva-yı Milliye ve Misak-ı Milli
8	Ara sınav
9	Türkiye Büyük Millet Meclisi'nin Açılması
10	Türkiye Büyük Millet Meclisi'nin İstiklal Savaşı'nın Yönetimini ele alması
11	Sakarya Zaferine Kadar Milli Mücadele; Eğitim ve Kültür Alanında Milli Mücadele
12	Sakarya Savaşı ve Büyük Taarruz
13	Mudanya'dan Lozan'a
14	Özet
15,16	Yarıyıl sonu sınavı

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility		**X**	
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature:

Date:

ESOGU AERONAUTICAL ENGINEERING DEPARTMENT
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152414001	COURSE NAME	Numerical Methods

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
4	3	0	0	3	4	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Mechanical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	NONE
COURSE DESCRIPTION	Approximations and errors. Roots of equations. System of algebraic equations, eigenvalues and eigenvectors. Curve fitting, interpolation, least squares. Numerical differentiation and integration.
COURSE OBJECTIVES	At the end of this course, the students will - learn the basic concepts of mathematical modeling, programming, approximations and round-off errors, truncation errors, - learn the evaluation of roots of equations, - learn basic concepts of solving linear algebraic equations, Gauss elimination, Gauss-Jordan, Gauss-Seidel methods, - learn basic concepts of numerical differentiation and integration - learn basic concepts of numerical solution of ordinary differential equations Runge-Kutta methods, multistep methods, boundary value problems
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Students who successfully complete this course will be able to solve engineering problems with numerical methods.
COURSE OUTCOMES	Student, who passed the course satisfactorily will be able to - solve mechanical engineering problems using numerical techniques, - analyze errors due to digital computation, - compute integral and derivative of functions, - solve differential equations using numerical techniques,
TEXTBOOK	Steven C. Chapra, Raymond P. Canale, “Numerical Methods for Engineers”, McGraw-Hill.
OTHER REFERENCES	Numerical Methods by R.W. Hornbeck
TOOLS AND EQUIPMENTS REQUIRED	Computer and suitable programing language (MATLAB, Fortran, C, C+, python, etc.)

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Programming, flow charts and algorithms
2	Error analysis, truncation errors, introduction to selected programing language
3	Taylor series
4	Finding roots of single-variable functions numerically
5	Numerical solution of linear system equations
6	Finding maximum and minimum values of single-variable functions
7	Curve fitting
8	Midterm exam
9	Midterm exam
10	Numerical integration
11	Numerical differentiation
12	Numerical solution of ordinary differential equations
13	Boundary value problems
14	Eigenvalue – Eigenvector problems
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	**X**		
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.		**X**	
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**X**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:**

T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ARCHITECTURE AND ENGINEERING FACULTY
AERONAUTICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152414002	COURSE NAME	Engineering Thermodynamics

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
4	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Subjects [if it contains considerable design, mark with (√)]	Social Science
		( )	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	40
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	
COURSE DESCRIPTION	Basic concepts of thermodynamics, Pure substance, the first law of thermodynamics for closed systems and control volumes, Carnot cycle and the second law of thermodynamics.
COURSE OBJECTIVES	To give students detailed knowledge of basic thermodynamic principles and their applications, the importance of heat and work, heat engines, refrigeration systems, heat pump systems, cycles, power generation systems and major components used in these systems and their analyses, and give basic information about losses and efficiencies.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	The students will be capable to analyze energy conversion systems and thermal power plants, understand losses, calculate overall efficiencies, follow and understand the new developments in the power plant technology area, and put their skills in practice in the field of power plant technology.
COURSE OUTCOMES	1.Capable to know the basic concepts of Thermodynamics. 2. Recognizes the phases of pure substances, phase-change processes and property diagrams for phase-change processes. 3. Manages the use of thermodynamic property tables. 4. Applies the first law of thermodynamics to closed systems and control volumes 5. Calculates the thermal efficiencies and coefficients of performance of heat engines, refrigerators and heat pumps
TEXTBOOK	Yunus Ali Çengel and Michael A. Boles, " Thermodynamics: An Engineering Approach ", Seventh Edition, McGraw-Hill Book Company, 2011.
OTHER REFERENCES	.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to Engineering Thermodynamics – I. Basic Concepts of Thermodynamics.
2	Pure substance, its phases, phase change processes, property diagrams
3	Property tables, the ideal-gas equation of state, compressibility factor.
4	Heat, work, the first law of Thermodynamics for closed systems.
5	The internal energy, enthalpy, and specific heats of ideal gases
6	The first law of Thermodynamics for control volumes , steady-flow engineering devices.
7	Transient control volumes
8	Mid-Term Examination
9	Mid-Term Examination
10	Reversible and irreversible processes, Carnot cycle
11	The Carnot heat engine, the Carnot refrigerator and heat pump.
12	The Carnot heat engine, the Carnot refrigerator and heat pump
13	Second-law analysis of engineering systems.
14	Second-law analysis of engineering systems.
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Mechanical engineering; an ability to apply theoretical and practical knowledge on solving and modeling of Mechanical engineering problems.	X		
2	Ability to determine, define, formulate and solve complex Mechanical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		X	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			X
4	Ability to develop, select and use modern methods and tools required for Mechanical engineering applications; ability to effective use of information technologies.			X
5	In order to investigate Mechanical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		X	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		X	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		X	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	X		
9	Understanding of professional and ethical issues and taking responsibility	X		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Dr. Öğr. Üy. S. Fehmi DİLTEMİZ **Date: 05/05/2022**

Signature(s):

T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY ENGINEERING AND ARCHITECTURE FACULTY AERONAUTICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152414003	COURSE NAME	Aerospace Materials

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
4	3	0	0	3	5	COMPULSORY (X) ELECTIVE ()	ENGLİSH

COURSE CATAGORY			
Basic Science	Basic Engineering	Engineering Subjects [if it contains considerable design, mark with (√)]	Social Science
		(√)	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	10
	Quiz		
	Homework	1	60
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	30

PREREQUIEITE(S)	---
COURSE DESCRIPTION	*While introducing the materials used in lectures Aerospace Industry, firstly all Aerospace industry products and technologies used on land, in the air and in the sea are introduced. For this purpose, the material group is first considered and its application in the sector is introduced.*
COURSE OBJECTIVES	*Considering today's technology as the engine of the locomotive and space and aviation as the sector,* *• Introduction of newly developed materials* *• These materials "Aerospace Industry Practices"* *• recognize the technological developments reflected in the civilian sector through these applications* *• As an engineer, to be able to design new designs in this light of development and to be able to perceive existing developments* *• To have knowledge about the industrial facilities in the sector and to have information about their possibilities so that they can establish relations between the topics seen and learned and the topics in the sector.*
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION	If a contemporary mechanical engineer reaches the ball in today's information age and the importance of sharing information is considered, students who take this course will make a valuable contribution to their vocational training by getting the most up-to-date information on the topic of locomotives. This up-to-date is about both engineering materials and Aerospace Industry Technologies.
COURSE OUTCOMES	Through this course, because it is the fastest growing technology, aerospace, professional literature, is considered to be updated very often.

TEXTBOOK	• Aerospace Industry Material Lecture Notes (Kuşhan M.C.) • Composite Materials for Aircraft Applications (Deo R.B.)

	A'dan Z'ye Dünya Uçakları ve Helikopterleri, KUŞHAN M.C.
OTHER REFERENCES	• Recent Advantages in Aircraft Technology, AGARWAL K. • Uçaklar ve Helikopterler, ŞAHİN K. • Uçak Ana Elemanları, ÖZŞAHİN E.
TOOLS AND EQUIPMENTS REQUIRED	Equipment of PPT presentation

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Aerospace Industry Material and Classification in General
2	Metals as Aerospace Industry Materials
3	Composites as Aerospace Industry Materials
4	Composites as Aerospace Industry Ceramics
5	Composites as Aerospace Industry Plastics
6	RAM
7	Vehicle Armour
8	Mid-Term Examination
9	Mid-Term Examination
10	Airctaft Ballistic Protection Products
11	Pyrotechnic
12	Fuselage of aircraft and helicopters
13	Fuselage of tank
14	Fuselage of ship and submarine
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**[X]**	**[ ]**	**[ ]**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**[X]**	**[ ]**	**[ ]**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	**[X]**	**[ ]**	**[ ]**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**[x]**	**[ ]**	**[ ]**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**[ ]**	**[X]**	**[ ]**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**[ ]**	**[X]**	**[ ]**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	**[X]**	**[ ]**	**[ ]**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**[X]**	**[ ]**	**[ ]**
9	Understanding of professional and ethical issues and taking responsibility	**[X]**	**[ ]**	**[ ]**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	**[X]**	**[ ]**	**[ ]**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	**[X]**	**[ ]**	**[ ]**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. Melih Cemal Kushan **Date: 16/ 05 / 2022**

ESOGU AERONAUTICAL ENGINEERING DEPARTMENT
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152414004	COURSE NAME	Fluid Mechanics

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
4	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Mechanical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
		X	

ASSESSMENT CRITERIA			
MID-TERM	Evaluation Type	Quantity	%
	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	NONE
COURSE DESCRIPTION	Introductory concepts and definitions, The continuity equation, Euler equations of motion, Hydrostatics, Navier-Stokes equations, Some solutions of Navier-Stokes equations, The Bernoulli equation, Engineering applications of the Bernoulli equation, Momentum theorems, Dimensional analysis, Analysis of flow in pipes and over surfaces, Laminar and turbulent boundary layers, Potential flow, Lift around cylinder, Flow around source/sink doublets.
COURSE OBJECTIVES	Derivations of continuity equation, Euler's equations of motion, Navier-Stokes equations, Bernoulli equation, momentum equations used in Fluid Mechanics, and their usage and utilization in engineering applications.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Students who successfully complete this course will be able to model the fluid characteristics about an aircraft and wing, establish a mathematical model and solve the potential flow problems around a body, solve Navier-Stokes equation with numerical method approaches.
COURSE OUTCOMES	Students who passed the course satisfactorily will be able to (1) define fundamental equations of fluid mechanics, (2) recognize the streamlines and stream function, (3) analyze hydrostatic problems, (4) Comprehends some exact solutions of the Navier-Stokes Equations, (5) Identifies dimensionless parameters employed in fluid mechanics.
TEXTBOOK	Çengel Y., Cimbala J.M., "Akışkanlar Mekaniği Temelleri ve uygulamaları", Palme Yayıncılık.
OTHER REFERENCES	Frank M. White, "Akışkanlar Mekaniği", McGraw-Hill Book Company.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to Fluid Mechanics, Concepts and Definitions
2	Hydrostatics
3	The Continuity Equation, Streamlines and Stream Function
4	Euler's Equation of Motion
5	Bernoulli Equation, Engineering Applications of the Bernoulli Equation.
6	Derivation of Navier-Stokes Equations
7	Some Solutions of Navier-Stokes Equations
8	Midterm Exam
9	Midterm Exam
10	Momentum Theorems
11	Dimensional Analysis
12	Turbulent Pipe Flow
13	Flow Around Source, Creation of Lift Around a Cylinder
14	Flow Around Sink/Source Doubles
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:**

T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
AERONAUTICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152414005	COURSE NAME	Measurement Technique

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
4	3	0	0	3	4	COMPULSORY (x) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering [if it contains considerable design, mark with (√)]	Social Science
		x ( )	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	50
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	General principles of measurement techniques, SI units, Analysis of results, ISO tolerances, gauges, strain gauges, dimension, hardness, force, torque measurement, surface roughness, gear, vibration, noise, pressure, temperature and flow measurement.
COURSE OBJECTIVES	Students who successfully pass this course gain knowledge, skill and competency about measurement in mechanical engineering.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Students learn measurement and applications in mechanical engineering. They can design and solve the new problems about measurement.
COURSE OUTCOMES	By the end of this module students will be able to: 1. Recognize basic measurement devices related to engineering subjects, 2. Analyze measurement results, 3. Has knowledge of measuring instruments to be used in various applications.
TEXTBOOK	Ölçme Tekniği, Tezcan Şekercioğlu, Birsen Yayınevi, 2016
OTHER REFERENCES	Ölçme Tekniği, Osman F. Genceli, Birsen Yayınevi, 2015 Mechanical Measurement, Figliola and Beasley, Wiley, 2011
TOOLS AND EQUIPMENTS REQUIRED	Computer, Lecture Notes, Book, Projector

COURSE SYLLABUS	
WEEK	**TOPICS**
1	General principles of measurement techniques
2	SI units
3	Analysis of measurement results
4	Dimension measurement
5	ISO tolerances
6	Control gauges
7	Strain gauges
8	Mid-Term Examination
9	Mid-Term Examination
10	Hardness measurement
11	Force and torque measurement
12	Surface roughness measurement, and Gear measurement
13	vibration and noise measurement, and Pressure measurement
14	Temperature measurement, and Flow measurement
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and mechanical engineering; an ability to apply theoretical and practical knowledge on solving and modeling of mechanical engineering problems.		**x**	
2	Ability to determine, define, formulate and solve complex mechanical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**x**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**x**
4	Ability to develop, select and use modern methods and tools required for mechanical engineering applications; ability to effective use of information technologies.	**x**		
5	In order to investigate mechanical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**x**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**x**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**x**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**x**	
9	Understanding of professional and ethical issues and taking responsibility			**x**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**x**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.		**x**	
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Dr. Öğr. Üy. S. Fehmi DİLTEMİZ **Date:** 09.05.2022

Signature(s):

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152414006	COURSE NAME	MACHINE ELEMENTS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
4	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Machine elements, calculations, shapings, basis of applications, in constructional activities; welded joints, shaft-hub joints, pins and pivot pins, bolt joints, screw mechanisms, springs.
COURSE OBJECTIVES	Description of machine elements; To give capability for strength of materials by using basic engineering data, standards and design criteria.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	The aim is to provide necessary data and capability for calculation of strength of materials by basic engineering data, standards and design criteria on design of machine elements.
COURSE OUTCOMES	1. Can recognize the machine elements and application basics. 2. Can comment on strength of material calculations by basic engineering data for machine elements 3. Can apply the constructional data for machine elements shaping. 4. Can calculate the steady strength of machine elements. 5. Can design shaft-hub joints, pin and pivot pins joints, bolt joints, screw mechanism and springs. 6. Can evaluate the production of designed machine elements and observe the improvements and updating the data.
TEXTBOOK	SHIGLEY, J.E., Mechanical Engineering Design (Metric Edition), McGraw-Hill Book Company, 1986.
OTHER REFERENCES	AKKURT, M., Makine Elemanları Cilt I, Birsen Yayınevi, İstanbul, 1990.
TOOLS AND EQUIPMENTS REQUIRED	None.

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Methods of calculation of strength of machine elements
2	Steady strength, the calculation of machine elements under dynamic and static load
3	Welded joints, Types of welded joints, rules of weld constructional basis
4	Calculation of strength of welding seams
5	Shaft-hub joints, profiled shaft and hub joints, pins, pivot pins
6	Shaft-hub joints
7	Forced shaft-hub joints
8	Mid-Term Exam
9	Forced shaft-hub joints
10	Bolt joints, Calculation methods for bolt strength
11	Pre-loaded bolt joints; Actuator bolts
12	Pre-loaded bolt joints; Actuator bolts
13	Springs
14	Springs
15,16	Final Exams

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Selim GÜRGEN

Signature:

Date: 16.05.2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152414007	COURSE NAME	ATATÜRK İLKELERİ VE İNKILÂP TARİHİ II

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
4	2	0	0	2	2	COMPULSORY (X) ELECTIVE ( )	TURKISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Mechanical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
			X

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	
COURSE DESCRIPTION	Tarih açısından Türk Devriminin temellerini, Türk devrimin tarihi gelişimi, zamandizinsel eksende karşılaştırmalı olarak ele alınarak, Tam bağımsızlık ve Ulusal egemenlik kavramlarını irdelemekte, verilen savaşım genç bireylere aktarılmaktadır.
COURSE OBJECTIVES	Öğrencilerin, Atatürk ilke ve devrimlerine bağlı, laik, demokratik ve çağdaş değerleri benimseyen ve koruyan bireyler olarak yetişmelerini sağlamak. Bu ders boyunca öğrencilere, demokrasinin çağımızın en iyi yaşam tarzı olduğu kavratılır, demokrasinin korunması ve geliştirilmesi bilinci kazandırılır.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Kişilik gelişimini tamamlama sürecinde tam bağımsızlık ve ulusal egemenlik kavramları ile bilinçlenme işleminin tamamlanmaktadır. Dersin genel anlamda, kendini gerçekleştiren, kültürlü, gündeme duyarlı olan eleştirel yaklaşımı benimsemiş, yapıcı ve çözüm odaklı birey oluşturma sürecinde katkısı gözlenmiştir
COURSE OUTCOMES	Sosyal bilimlere ilişkin bilgilerini uygulama becerisi Verileri analiz edebilme, değerlendirebilme ve tasarlama becerisi Disiplinler arası bir takıma liderlik edebilme becerisi Yaşama karşılaştırmalı bakabilme becerisi, mesleki ve etik sorumluluğu anlama, etkin yazılı ve sözlü iletişim becerisi Verilerin ulusal ve küresel tesiri ile sonuçlarını anlama becerisi Hayat boyu öğrenimin önemini kavrama ve uygulama becerisi Mesleki güncel konuları izleme becerisi Bağımsız ya da danışman yönetiminde bilimsel araştırma yapabilme becerisi
TEXTBOOK	Gazi Mustafa Kemal Atatürk, Nutuk (Söylev), C. I-II, TTK., Ankara, 1986.

OTHER REFERENCES	Fatma Acun (Ed.), Atatürk ve Türk İnkılâp Tarihi, Ankara, 2010. Niyazi Berkes, Türkiye'de Çağdaşlaşma, İstanbul, 1978. Enver Ziya Karal, Atatürk ve Devrim (Konferanslar ve Makaleler), TTK., Ankara, 1980. Enver Ziya Karal, Atatürk'ten Düşünceler, MEB. Yay., Ankara, 1981. Bernard Lewis, Modern Türkiye'nin Doğuşu, Çev.M.Kıratlı, TTK., Ankara, 1970. Ahmet Mumcu, Tarih Açısından Türk Devriminin Temelleri ve Gelişimi, Ankara, 1976.
TOOLS AND EQUIPMENTS REQUIRED	Projeksiyon Makinesi, Harita, Fotoğraf, İstatistikî Tablolar, Grafikler

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Türk İnkılâbının Stratejisi
2	Sevr ve Lozan Barış Antlaşması
3	Siyasi Alanda İki Büyük İnkılâp
4	Çok Partili Hayata Geçme Denemesi ve Bazı İç Siyasi Olaylar (TCF ve Takrir-i Sükûn Dönemi)
5	Türk Hukuk İnkılâbı
6	Eğitim ve Kültür İnkılâbı
7	İktisat Alanında Yapılan İnkılâplar
8	Ara Sınav
9	Sosyal Yapıda ve Sağlık Alanında İnkılâplar
10	Türkiye Cumhuriyeti'nin Dış Politikası
11	Üniversite Gençliğine Yönelik Psikolojik Harekât Tehdidi
12	Atatürk İlkeleri ve Bu İlkelere Yönelik Tehditler
13	Yükseköğretim Alanındaki Faaliyetler ve Üniversite Reformu
14	Özet
15,16	Yarıyıl Sonu Sınavı

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility		**X**	
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature:

Date:

ESOGÜ Aeronautical Engineering Course Information Form

SEMESTER	AUTUMN

COURSE CODE	152415001	COURSE NAME	Fundamentals of Aerodynamics

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAG E
5	3	0	0	3	5	COMPULSORY (X) ELECTIVE ()	Turkish

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Subjects [if it contains considerable design, mark with (√)	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	30
	Quiz		
	Homework	4	10
	Project	1	10
	Report		
	Others (Class Notes)	1	10
FINAL EXAM		1	40

PREREQUIEITE(S)	Differential Equations, Fluid Mechanics, Numerical Methods
COURSE DESCRIPTION	A Brief History of Aviation, Fundamental Equations of Aerodynamics, Inviscous Flow, Incompressible Flow over Airfoil, Incompressible Flow Over Finite Wing, 3-dimensional Incompressible Flow
COURSE OBJECTIVES	In this course, it is aimed to express the basic principles of aerodynamics with equations, to recognize inviscous and incompressible flow, to explain the finite and infinite wing theory and to solve the equations in this context both analytically and numerically. It is aimed to reinforce the objectives with the notes and assignments kept in the lectures.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	It provides to understand the main reasons of flight. It contributes to offering suggestions for better flights in terms of aerodynamic forces and implementing these suggestions.
COURSE OUTCOMES	Defines and solves the basic equations of aerodynamics and the equations of inviscous flows. Identify and formulate changes related to incompressible flow in the infinite wing and the finite wing. Extracts the differences between 3-dimensional and 2-dimensional incompressible flows.
TEXTBOOK	ANDERSON. (2016). Fundamentals of aerodynamics (6th ed.). McGraw-Hill Education.
OTHER REFERENCES	Peiqing Liu. (2022). A General Theory of Fluid Mechanics. Springer. Aerodynamics for Engineering Students, Sixth Edition, Houghton et al., Elsevier
TOOLS AND EQUIPMENTS REQUIRED	Projector, computer, textbook, A4 notebook, pencil, eraser, ruler, calculator

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Brief history of aviation
2	Basic concepts in aerodynamics
3	Basic principles in aerodynamics
4	Basic equations in aerodynamics
5	Inviscous flows
6	Incompressible and inviscous flows over airfoil
7	Incompressible and viscous flows over airfoil
8	Midterm Exam
9	Incompressible and inviscous flows on a finite wing
10	Incompressible and viscous flows on a finite wing
11	3-dimensional incompressible flows
12	Theoretical and experimental solutions for aerodynamic problems
13	Numerical solutions for aerodynamic problems
14	Project-homework presentations
15,16	Final

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Aeronautical engineering: an ability to apply theoretical and practical knowledge on solving and modeling of Aeronautical engineering problems.	X		
2	Ability to determine, define, formulate, and solve complex Aeronautical engineering problems; for that purpose, an ability to select and use convenient analytical and experimental methods.	X		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economic and political problems; for that purpose an ability to apply modern design methods.		X	
4	Ability to develop, select and use modern methods and tools required for Aeronautical engineering applications; ability to effective use of information technologies.		X	
5	In order to investigate Aeronautical engineering problems; ability to set up and conductexperiments and ability to analyze and interpretation of experimental results.		X	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		X	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		X	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		X	
9	Understanding of professional and ethical issues and taking responsibility		X	
10	Awareness of project, risk, and change management; awareness of entrepreneurship, innovativeness and sustainable development.		X	
11	Knowledge of actual problems and effects of engineering applications on health, environment, and security in global and social scale; an awareness of juridical results of engineering solutions.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. Kürşad Melih GÜLEREN **Date: 13/02/2023**

Signature(s):

ESOGÜ Aeronautical Engineering Course Information Form

SEMESTER	AUTUMN

COURSE CODE	152415002	COURSE NAME	Heat Transfer

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAG E
5	3	0	0	3	5	COMPULSORY (X) ELECTIVE ()	Turkish

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Subjects [if it contains considerable design, mark with (√)	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	30
	Quiz		
	Homework	4	10
	Project	1	10
	Report		
	Others (Class Notes)	1	10
FINAL EXAM		1	40

PREREQUIEITE(S)	Differential Equations, Numerical Methods
COURSE DESCRIPTION	Heat conduction, heat convection, radiation.
COURSE OBJECTIVES	Understanding the physical mechanisms that are the basic of heat transfer types and the derivation of the basic equations and and create a method in order to calculate the energy transferred per unit of time.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Basic physical mechanisms of convection, conduction and radiation. Gain ability to solve and analyze heat transfer problems using empirical correlations, analytical solutions, the practical charts and graphs
COURSE OUTCOMES	Have knowledge about heat transfer mechanisms and heat properties of environment. Have ability to solve methods which are used in analysis of heat transfer problems.
TEXTBOOK	Fundamentals of Thermal - Fluid Sciences, by Y.A. Cengel and R.H. Turner, McGraw Hill Higher Education
OTHER REFERENCES	F. P. Incropera ve D. P. Dewitt, "Isı ve Kütle Geçişinin Temelleri," Türkçe Çevirisi, Literatür Yayıncılık.
TOOLS AND EQUIPMENTS REQUIRED	Projector, computer, textbook, A4 notebook, pencil, eraser, ruler, calculator

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to heat conduction, fundamentals of conduction, convection, and radiation
2	One dimensional heat conduction in steady state
3	One dimensional heat conduction in steady state
4	Fins
5	Transient heat conduction
6	Introduction to heat convection
7	External Flow
8	Midterm Exam
9	External Flow, Internal Flow
10	Internal Flow
11	Natural convection
12	Introduction to radiation, basic methods, and properties
13	Radiation heat transfer exchange between surfaces
14	Radiation heat transfer exchange between surfaces
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Aeronautical engineering: an ability to apply theoretical and practical knowledge on solving and modeling of Aeronautical engineering problems.	X		
2	Ability to determine, define, formulate, and solve complex Aeronautical engineering problems; for that purpose, an ability to select and use convenient analytical and experimental methods.	X		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economic and political problems; for that purpose an ability to apply modern design methods.		X	
4	Ability to develop, select and use modern methods and tools required for Aeronautical engineering applications; ability to effective use of information technologies.		X	
5	In order to investigate Aeronautical engineering problems; ability to set up and conductexperiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		X	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			X
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility		**X**	
10	Awareness of project, risk, and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment, and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. Kürşad Melih GÜLEREN **Date: 13/02/2023**

Signature(s):

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152415003	COURSE NAME	ELASTICITY

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
5	3	0	0	3	4	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	-
COURSE DESCRIPTION	Concepts of stress and strain in 3-D. Transformations of stress and strain in 2D and 3D. Stress-strain and strain-displacement relations. Generalized Hooke's law. Energy methods. Castigliano's theorem. Problems in 2D elasticity. Plane stress and plane strain applications.
COURSE OBJECTIVES	This course lays down the fundamentals of linear elasticity. It introduces the advanced methods for the analysis of deformable bodies and educates students to apply this knowledge in the solution of aerospace engineering problems. It also equips students with the necessary background to design aerosystems and components.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	The course will provide the basics about elastic structures and support the students about understanding of aerostructures.
COURSE OUTCOMES	Understanding stress and strain in 3D. Understanding the loadings. Analyzing the structures in terms of stress and strain aspects. Gaining the basics of aerostructural design.
TEXTBOOK	A.C. Ugural and S.K. Fenster, "Advanced Strength and Applied Elasticity" Prentice Hall PTR, 3rd Edition, 1995, ISBN: 0-13-137589-X
OTHER REFERENCES	B.K. Donaldson, "Analysis of Aircraft Structures" Mc Graw-Hill Book Company, 1993, ISBN: 0-07-112591-4 S.Timoshenko and J.N. Goodier, "Theory of Elasticity", Mc Graw-Hill Book Company, 3rd Edition, 1982, ISBN: 0-07-Y85805-5
TOOLS AND EQUIPMENTS REQUIRED	-

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Analysis of Stress in 2-D and 3-D
2	Variation of stress within a body in 2-D and 3-D; Principal stresses in 2-D and 3-D
3	Stress-Strain Relations
4	Equations of compatibility; Generalized Hooke's Law
5	Energy Methods; Strain Energy
6	Principles of Work and Energy; Castigliano's Theorem
7	2D Problems in Elasticity
8	MIDTERM EXAMS
9	Plane strain problems
10	Plane stress problems
11	Thermal stresses
12	Torsion of Non-circular Bars
13	General solution of the torsion problem
14	Torsion of thin-walled members of open cross-section
15,16	FINAL EXAMS

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Selim GÜRGEN

Signature: **Date:** 23.12.2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152415004	COURSE NAME	FUNDAMENTALS of CONTROL SYSTEMS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
5	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
		X	

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	The course aims to provide the student the knowledge of designing systems which can be automatically controlled and of making design changes to a system to increase its performance. The specific topics addressed are: Classical control theory in the frequency and time domains, stability- performance methods based on Bode/Nyquist and root-locus diagrams, representation in state space, reduction of multiple subsystems, application of feedback analysis and design to physical systems with feedback.
COURSE OBJECTIVES	1) Introduction to design, analysis, and synthesis of control systems. To teach the fundamental concepts of mathematical modeling and Control of engineering systems
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Demonstration of how to apply what is learned theoretically in the field of control engineering. The course aims to provide the ability to analyze the performance of engineering systems and design controllers to improve the performance.
COURSE OUTCOMES	By the end of this module students will be able to learn: 1) to obtain mathematical modeling of engineering systems, 2) system representation by block diagrams, 3) time response analysis of dynamic systems, 4) stability analysis of systems, 5) performance specifications and analysis, 6) frequency response of a system and frequency response analysis of existing systems (Bode & Nyquist methods), 7) Root Locus method for the control system design and analysis, 8) proportional, integral, and derivative (PID) control, 9) knowledge of MATLAB “Control Toolbox” commands.
TEXTBOOK	Control Systems Engineering, Norman S. Nise

OTHER REFERENCES	1) Otomatik Kontrol Sistemleri, Benjamin C. Kuo & Farid Golnaraghi 2) Modern Control Engineering, Ogata, K. 3) Otomatik Kontrol / Sistem Dinamiği ve Denetim Sistemleri, İbrahim Yüksel
TOOLS AND EQUIPMENTS REQUIRED	MATLAB, Computer

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to Control Systems
2	Math. Modeling: Modeling in the Time Domain (Modeling, Approximations & Linearization
3	Mathematical Modeling: Modeling in the Time Domain (Mechanical, Electrical, Electromechanical, Thermal & Hydraulic Elements & Systems)
4	Math. Modeling: Modeling in the Frequency Domain (Laplace Transform Review)
5	Math. Modeling: Modeling in the Frequency Domain (Transfer Functions, Impedance Approach)
6	Block Diagrams
7	State-Space Model, State-Space Model Conversion to/From Transfer Functions
8	MIDTERM
9	Time Response (Stability, Routh Hurwitz Criteria)
10	Time Response (Feedback Control & Steady-State Errors)
11	Time Response (First, Second and Higher Order System Responses, Effects of Nonlinearities)
12	Frequency Response Analysis (Bode Plots)
13	Frequency Response Analysis (Nyquist Diagram)
14	Controller design with Root Locus curve
15,16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**X**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Associate Prof. Isil YAZAR

Signature: **Date:** 25/12/2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152415005	COURSE NAME	MANUFACTURING TECHNOLOGIES

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
5	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X		

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	-
COURSE DESCRIPTION	Introduction. Casting. Powder metallurgy. Metal working; hot working and cold working processes. Chip removal processes. Non-traditional machining processes. Welding. Additive manufacturing.
COURSE OBJECTIVES	The objective of this course is to teach students the descriptions of manufacturing processes. Students are to learn to identify the processes and to perform simple calculations like machining time in metal removal processes, etc.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	In this course, students will learn about manufacturing and applications as well as how to produce aerostructures by using manufacturing methods and selection of method for a specific application.
COURSE OUTCOMES	Understanding of manufacturing methods in aerospace industry Understanding the selection of a manufacturing processes for a specific application Developing a manufacturing process of aerostructures Developing professional skills to solve technical problems
TEXTBOOK	E. P. DeGarmo, J. T. Black and R. A. Kohser, Materials and Processes in Manufacturing, MacMillan.
OTHER REFERENCES	S. Kalpakjian, Manufacturing Processes for Engineering Materials, Addison Wesley.
TOOLS AND EQUIPMENTS REQUIRED	-

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction
2	Casting
3	Powder metallurgy
4	Metal working: general description
5	Hot working processes
6	Cold working processes
7	Chip removal; general description, drilling and reaming
8	MIDTERM EXAMS
9	Turning and related operations, milling, broaching
10	Gear cutting, abrasive machining
11	Non-traditional machining processes
12	Non-traditional machining processes
13	Welding
14	Additive Manufacturing
15,16	FINAL EXAMS

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.		**X**	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr. Selim GÜRGEN

Signature: **Date:** 23.12.2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152415006	COURSE NAME	Aircraft Performance

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
5	3	0	-	3	3	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X	X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	152415xxx - Uçak Mühendisliğine Giriş (152411xxx - Introduction to Aeronautical Engineering)
COURSE DESCRIPTION	Understanding aircraft morphology and performance characteristics, deriving necessary equations of motion and performance equations.
COURSE OBJECTIVES	Understanding the standard atmosphere model, understanding aerostatic buoyancy and aerodynamic lift forces, deriving equations of motion with point-body approach, cruising, climbing, descending, take-off, landing, return flights in turbojet and piston-propeller aircraft. equations, determination of required performance parameters (L/D, W/S, T/W…) for minimum and maximum flight capabilities (maximum lift, maximum range, minimum turning radius, minimum descent rate,…), flight and performance envelopes understanding, understanding the Vn diagram, understanding the energy model.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Derivation of performance equations of turbojet and piston-propeller airplanes, their use in design and analysis activities.
COURSE OUTCOMES	Upon successful completion of the course, the student will have the following abilities: - Derivation of standard atmosphere model equations, - Learning aerostatic lift and aerodynamic bearing forces, - Performance calculations for turbojet and piston-propeller airplanes
TEXTBOOK	John D. Anderson, Jr., Uçuşa Başlangıç (Introduction To Flight), Çev: Adil Yükselen, Nobel Akademik Yayıncılık,
OTHER REFERENCES	Yechout, T. R., & Morris, S. L. (2003). Introduction to aircraft flight mechanics: Performance, static stability, dynamic stability, and classical feedback control. Reston, VA: American Institute of Aeronautics and Astronautics.
TOOLS AND EQUIPMENTS REQUIRED	Projector, overhead document projector,

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Basic properties of fluids, and standard atmosphere,
2	Fundamentals of propulsion
3	Dynamic similarity, Reynold and Mach numbers
4	Flow around airfoil @ one AoA, pitot-static tube and airspeed measurement,
5	Aerostatic and aerodynamic forces, dimensional analysis, aerodynamic coefficients
6	Introduction to aircraft performance, equations of motion for point-mass model, Calculation of performance parameters of steady state level flight turbojet aircraft,
7	Calculation of performance parameters of steady state level flight turbojet aircraft,
8	Midterm
9	Calculation of performance parameters of steady state level flight propeller aircraft,
10	Calculation of performance parameters of steady state level flight propeller aircraft,
11	Climb and descent flight performance equations
12	Turning flight performance equations
13	Performance parameters calculation with energy model
14	Performance parameters calculation with energy model
15,16	Final

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.		**X**	
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.		**X**	
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	**X**		
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	**X**		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:**

Ass. Prof. Zafer ÖZNALBANT, PhD 14.01.2023

T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
AERONAUTICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152415007	COURSE NAME	PRODUCTION PLANNING

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
5	3	0	0	3	3	COMPULSORY ( ) ELECTIVE (X)	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Engineering Subjects [if it contains considerable design, mark with (√)]	Social Science
		( )	√

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	40
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	---
COURSE DESCRIPTION	Demand forecasting, Aggregate Production Planning, Material Requirement Planning, Stock Control, Project Management
COURSE OBJECTIVES	Demand forecasting, Aggregate Production Planning, Material Requirement Planning, Stock Control, Project Management
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Aeronautical engineer a contemporary and knowledge sharing to reach the ball to forward the importance of today's information age, given that the locomotive of this course the student technologies based on the most current information in a matter of professional training contribute very valuable.
COURSE OUTCOMES	• An ability to perform demand forecasting using different techniques in the business enterprise • An ability to prepare the aggregate production planning in the business enterprise An ability to perform and revise master production schedule in the business enterprise
TEXTBOOK	The Fundamentals of Production Planning and Control, Stephen Chapman
OTHER REFERENCES	PRODUCTION PLANNING & CONTROL, D.R. Kiran
TOOLS AND EQUIPMENTS REQUIRED	---

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Production and Production Management Definition
2	Historical Background and Approach to Production Management Systems
3	Production Management Activities
4	Production Management Functional Structure
5	Plastics as Defense Technology Materials
6	Factors Affecting Product Design and product design
7	The Importance of Demand Forecasts
8	Mid-Term Examination
9	Enterprise Resource Planning
10	Enterprise Resource Planning
11	Application of Demand Forecasts
12	Stock Concept and Business Economy
13	Stock Control Methods
14	Inventory Control Models
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**[X]**	**[ ]**	**[ ]**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**[X]**	**[ ]**	**[ ]**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	**[X]**	**[ ]**	**[ ]**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**[ ]**	**[X]**	**[ ]**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**[X]**	**[ ]**	**[ ]**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**[ ]**	**[X]**	**[ ]**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	**[X]**	**[ ]**	**[ ]**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**[X]**	**[ ]**	**[ ]**
9	Understanding of professional and ethical issues and taking responsibility	**[X]**	**[ ]**	**[ ]**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	**[X]**	**[ ]**	**[ ]**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	**[X]**	**[ ]**	**[ ]**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. Melih Cemal Kushan **Date:**

Signature(s):

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152415008	COURSE NAME	BEGINNING FRENCH 1

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
5	3	0	0	3	3	COMPULSORY ( ) ELECTIVE (X)	FRENCH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
			X

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	None
COURSE DESCRIPTION	Se présenter et parler de soi. Parler de sa famille.Proposer de faire quelque chose.
COURSE OBJECTIVES	Saluer (registre formel et informel) Demander une informationes sur une personne.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Communication skills in a foreign language (French) Understanding a foreign culture (French)
COURSE OUTCOMES	1. Introduction of self in French and providing info about self. 2. Asking for personal information and comprehending it. 3. Description of the physical appearance of a person. 4. Uses expression of time.
TEXTBOOK	Francofolie I
OTHER REFERENCES	Grammaire progressive du français.
TOOLS AND EQUIPMENTS REQUIRED	none

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Se présenter et parler de soi.
2	Présenter quelqu'un.
3	Saluer registre formel et informel.
4	Demander quelque chose (registre formel et informel)
5	Informations sur une personne.
6	Parler de son caractères et de ses gouts.
7	Parler de sa famille.
8	MIDTERM
9	Raconter des moments de la vie quotidienne.
10	Demander, donner l'heure.
11	Proposer de faire quelque chose.
12	Donner des ordres.
13	Quelques verbes irreguliers.
14	Quelques verbes irreguliers.
15,16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.			**X**
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:** 25/12/2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	AUTUMN

COURSE CODE	152415009	COURSE NAME	GERMAN 1

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
5	3	0	0	3	3	COMPULSORY ( ) ELECTIVE (X)	GERMAN

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
			X

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	Content of the course: Artikel, Singular und Plural, das Präsens, trennbare und untrennbare Verben, starke Verben, die Zahlen, die Zeit, die Wortstellung, Präpositionen mit dem Dativ, Präpositionen mit dem Akkusativ, Wechselpräpositionen, Fragepronomen, Personalpronomen, Possessivpronomen, Modalverben
COURSE OBJECTIVES	The main aim of this course is to help students to get the basics of the German grammar
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	By the end of this course student will be able to: 1. Read, write and understand simple German
COURSE OUTCOMES	1. Introduction of self in French and providing info about self. 2. Asking for personal information and comprehending it. 3. Description of the physical appearance of a person. 4. Uses expression of time.
TEXTBOOK	Schulz-Griesbach: Deutsch für Ausländer., Dreyer-Schmitt: Lehr- und Übungsbuch der deutschen Grammatik, Vlachos N.: Exakt 1-2, Schulz-Sundermeyer: Deutsche Sprachlehre für Ausländer, Mahler G., Schmitt R.: Wir lernen Deutsch, 1-2
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Der Artikel, das Verb
2	Konjugation Praesens, Personalpronomen
3	Die Nomen, Singular und Plural
4	Fragepronomen, der Akkusativ
5	Der Satz, die Zahlen
6	Praesens der starken Verben
7	Trennbare Verben
8	MIDTERM
9	Wiederholung und Übungen
10	Praepositionen mit dem Dativ
11	Praepositionen mit dem Akkusativ
12	Der Dativ
13	Possessivpronomen
14	Possessivpronomen
15,16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:** 25/12/2022

ESOGÜ Aeronautical Engineering Course Information Form

SEMESTER	SPRING

COURSE CODE	152416001	COURSE NAME	Compressible Aerodynamics

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAG E
6	3	0	0	3	5	COMPULSORY (X) ELECTIVE ()	Turkish

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Subjects [if it contains considerable design, mark with (√)	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	30
	Quiz		
	Homework	4	10
	Project	1	10
	Report		
	Others (Class Notes)	1	10
FINAL EXAM		1	40

PREREQUIEITE(S)	Differential Equations, Fluid Mechanics, Numerical Methods, Fundamentals of Aerodynamics
COURSE DESCRIPTION	Fundamentals of Compressible Flow, Normal Shock Waves and Related Topics, Oblique Shock and Expansion Waves, Compressible Flows in Nozzle-Diffuser and Wind Tunnels, Subsonic Compressible Flows over Wings, Supersonic Flow and Numerical Methods, Hypersonic Flow Fundamentals
COURSE OBJECTIVES	This course aims to express the basic principles of compressible aerodynamics with equations, distinguish between normal and oblique shock waves, describe compressible flow in different platforms, develop supersonic flows and related numerical methods, and become familiar with hypersonic flows. It is aimed to reinforce the objectives with the notes and assignments kept in the lectures.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	It provides to understand the basic reasons for the flying of high-speed aircraft. It helps in correctly identifying and analyzing the aerodynamic forces that affect the design of transonic and supersonic vehicles. In this sense, it contributes to offering suggestions and implementing these suggestions.
COURSE OUTCOMES	Explain the concept of compressible flow. Know the differences between normal and oblique shock and makes related equation inferences. Can identify different application areas of compressible flow. Apply the theories and related equations in subsonic and supersonic flows. Can use numerical methods in this framework.
TEXTBOOK	ANDERSON. (2016). Fundamentals of aerodynamics (6th ed.). McGraw-Hill Education.
OTHER REFERENCES	Peiqing Liu. (2022). A General Theory of Fluid Mechanics. Springer. Aerodynamics for Engineering Students, Sixth Edition, Houghton et al., Elsevier
TOOLS AND EQUIPMENTS REQUIRED	Projector, computer, textbook, A4 notebook, pencil, eraser, ruler, calculator

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Basic concepts of compressible flow
2	Normal shock waves
3	Normal shockwave equations
4	Oblique shock waves
5	Oblique shock waves equations
6	Expansion waves
7	Compressible flow applications
8	Midterm Exam
9	Compressible flows in nozzle, diffuser and wind tunnels
10	Subsonic compressible flows over the wing
11	Supersonic flows
12	Numerical methods for supersonic flows
13	Hypersonic flows
14	Project-homework presentations
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and Aeronautical engineering: an ability to apply theoretical and practical knowledge on solving and modeling of Aeronautical engineering problems.	X		
2	Ability to determine, define, formulate, and solve complex Aeronautical engineering problems; for that purpose, an ability to select and use convenient analytical and experimental methods.	X		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economic and political problems; for that purpose an ability to apply modern design methods.		X	
4	Ability to develop, select and use modern methods and tools required for Aeronautical engineering applications; ability to effective use of information technologies.		X	
5	In order to investigate Aeronautical engineering problems; ability to set up and conductexperiments and ability to analyze and interpretation of experimental results.		X	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		X	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		X	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		X	
9	Understanding of professional and ethical issues and taking responsibility		X	
10	Awareness of project, risk, and change management; awareness of entrepreneurship, innovativeness and sustainable development.		X	
11	Knowledge of actual problems and effects of engineering applications on health, environment, and security in global and social scale; an awareness of juridical results of engineering solutions.		X	
1: None. **2**: Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. Kürşad Melih GÜLEREN **Date: 13/02/2023**

Signature(s):

T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
AERONAUTICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152416002	COURSE NAME	Aerospace Structures

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	5	COMPULSORY (X) ELECTIVE ()	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Engineering Subjects [if it contains considerable design, mark with (√)]	Social Science
		( )	√

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	20
	Quiz		
	Homework	1	40
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	40

PREREQUIEITE(S)	---
COURSE DESCRIPTION	Material properties. The main structural elements in the aircraft. Loads on the plane. V-N diagrams. Aircraft loads. Structural analysis of aircraft infrastructures. frames, wing sections. Elastic stability: Column buckling, buckling of flat and curved panels, buckling analysis of stiffened closed section box beams, post-buckling behavior of stiffened straight and curved panels.
COURSE OBJECTIVES	The student who takes the course will have the necessary information about the examination of the conditions that determine the design of aircraft structures and the analysis of aerospace structures.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	The most important detail for an aircraft engineer is to be able to do the engineering design expected from him in the best way. As a product, of course, the most important design is an airplane, helicopter or aircraft design. This feature, which is the most important feature that he will gain with his education, will be gained with this course.
COURSE OUTCOMES	• Makes the definition of air platforms. • Knows and classifies these platforms. • Knows and classifies airplanes and helicopters. • Knows trunk analysis methods.
TEXTBOOK	Aircraft Structures, David J. Peery
OTHER REFERENCES	A to Z; World Planes, Helicopters, Unmanned Aerial Vehicles, Engines and Equipment. Kushan M.C.

TOOLS AND EQUIPMENTS REQUIRED	---

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Main structural elements in aircraft and spacecraft, their functions. Flexible truss structures used in space applications
2	Flexural analysis of tapered and non-tapered open-section beams: stiffener loads, web shear flows, shear center.
3	Flexural and torsional analysis of tapered and non-tapered wing and fuselage and spacecraft structures as closed-section multi cell box beams. Usual assumptions for such structures in the analysis of stiffener loads, shear flow, shear center and angle of twist.
4	Production Management Functional Structure
5	Plastics as Defense Technology Materials
6	Bending of unsymmetrical sections with emphasis on unsymmetrical wing-box cross-sections
7	The stability (local buckling) of wing and fuselage skin panels as flat and curved plates under compression, bending, shear, and combined loading; local buckling of round tubes
8	Mid-Term Examination
9	Post-buckling behavior of stiffened flat and curved plates : effective width concept used in the analysis of wing and fuselage skin panels
10	Failure criteria for isotropic brittle and ductile materials.
11	Application of Demand Forecasts
12	Stock Concept and Business Economy
13	Stock Control Methods
14	Inventory Control Models
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	[X]	[ ]	[ ]
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	[X]	[ ]	[ ]
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	[X]	[ ]	[ ]
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	[ ]	[X]	[ ]
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[X]	[ ]	[ ]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[ ]	[X]	[ ]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[X]	[ ]	[ ]
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	[X]	[ ]	[ ]
9	Understanding of professional and ethical issues and taking responsibility	[X]	[ ]	[ ]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[X]	[ ]	[ ]
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	[X]	[ ]	[ ]
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Prepared by: Prof. Dr. Melih Cemal Kushan **Date:**

Signature(s):

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152416003	COURSE NAME	Aircraft Stability and Control

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X	X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	152413xxx – Differential Equations 152413003 – Dynamic 152415xxx – Fundamentals of Aerodynamic 152415xxx – Aircraft Performance
COURSE DESCRIPTION	Understanding the dynamic behavior of the aircraft as a rigid body, derivation of equations of motion under standard atmosphere and flat earth assumption, analysis of static and dynamic stability properties, understanding of linear and non-linear analyses
COURSE OBJECTIVES	It is aimed that students taking this course will have the knowledge about the following topics: • Understanding the aircraft static and dynamic characteristics, • Understanding the aerodynamics and control derivatives, • Derivation of the airplane equations of motion, • Analysis of the aircraft's time-dependent response, • Understanding of longitudinal and lateral linear analysis,
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Defining the stability and control capabilities needed in the aircraft design phase, analyses of the stability and control capabilities of an existing aircraft
COURSE OUTCOMES	Upon successful completion of the course, the student will have the following abilities: • Ability to analyze aircraft static stability, • Ability to analyze aircraft dynamic stability, • Ability to analyze the response of aircraft to control input and atmospheric disturbances
TEXTBOOK	Rober C Nelson, Flight Stability and Automatic Control Bernard Etkin, Lloyd Duff Reid, Dynamics of Flight: Stability and Control
OTHER REFERENCES	Yechout, T. R., & Morris, S. L. (2003). Introduction to aircraft flight mechanics: Performance, static stability, dynamic stability, and classical feedback control. Reston, VA: American Institute of Aeronautics and Astronautics.
TOOLS AND EQUIPMENTS REQUIRED	Projector, overhead document projector,

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Lecture details, Basic definitions
2	Static and dynamic stability
3	Longitudinal static stability, Contributions of aircraft components, Longitudinal control, Stick-fixed neutral point
4	Lateral-Directional static stability, Contributions of aircraft components, Lateral-Directional control
5	Aircraft equations of motion I: force and moment (dynamic) equations
6	Aircraft equations of motion I: kinematic equations
7	Linearization of equations of motion
8	Midterm
9	Stability derivatives
10	Longitudinal motion dynamic analysis
11	Longitudinal motion short period and long period (phugoid) approaches
12	Lateral-Directional motion dynamic analysis
13	Lateral-Directional motion roll, spiral, Dutch-roll mode approaches
14	Aircraft response to control or atmospheric inputs
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	**X**		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	**X**		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	**X**		
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility	**X**		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.		**X**	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.		**X**	
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:**

Ass. Prof. Zafer ÖZNALBANT, PhD 16.01.2023

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152416004	COURSE NAME	PROPULSION SYSTEMS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	5	COMPULSORY (X) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	Introduction to Propulsion (Propulsion, Units and Dimensions, Operational Conditions and Standard Atmosphere, Air Breathing Engines, Aircraft Performance). Aircraft Gas Turbine Engine (Thrust Equation, Thrust Efficiency, Gas Turbine Engine Components, Brayton Cycle). Parametric Cycle Analysis of Ideal Engines (Engine Parametric Cycle Analysis, Ideal Ramjet, Ideal Turbojet, Ideal Turbofan). Component Performance (Change in Gas Properties, Pressure Recovery in Air Intake and Diffuser, Compressor and Turbine Efficiency, Combustion Chamber Efficiency and Pressure Loss, Exhaust Nozzle Loss, Shaft Mechanical Efficiency, Component Performance Criteria). Parametric Cycle Analysis of Real Engines (Turbojet, Turbofan). Engine Performance Analysis (Gas Generator, Turbojet Engine, Turbofan Engine).
COURSE OBJECTIVES	Understanding how thrust is produced in jet engines, Calculating the ideal performance of all engine and engine components under different design conditions, Making performance calculations in conditions other than the design point, Understanding the amount of performance variation due to component losses in real conditions, To acquire the ability to use this information in the design process.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Propulsion systems, system components and working principles will be learned.
COURSE OUTCOMES	1- To understand how different aircraft engines are classified and to know the differences between them 2- Understanding how thrust is produced in aircraft engines 3- Understanding the key performance parameters of aircraft engines 4- To know how to use thermodynamic cycles in aircraft engine performance analysis

	5- Calculate the ideal performances of the aircraft engine and its components under design point conditions 6- Considering the losses in engine components, knowing their reflections on overall performance and understanding the effects of component performance 7- Calculating engine performance in real conditions and considering losses 8- Performing and evaluating aircraft engine performance analysis
TEXTBOOK	Elements of Propulsion: Gas Turbines and Rockets, Mattingly, J.D., AIAA Education Series, 2006.
OTHER REFERENCES	Aerothermodynamics of Gas Turbine and Rocket Propulsion, Third Edition, G. C. Oates, AIAA Education Series, 1997
TOOLS AND EQUIPMENTS REQUIRED	Computer

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to Propulsion (Propulsion, Units and Dimensions, Operational Conditions and Standard Atmosphere, Air Breathing Engines, Aircraft Performance)
2	Aircraft Gas Turbine Engine (Thrust Equation, Thrust Efficiency, Gas Turbine Engine Components, Brayton Cycle)
3	Parametric Cycle Analysis of Ideal Engines (Engine Parametric Cycle Analysis, Ideal Ramjet)
4	Parametric Cycle Analysis of Ideal Engines (Ideal Turbojet)
5	Parametric Cycle Analysis of Ideal Engines (Ideal Turbofan)
6	Component Performance (Change in gas properties, Pressure Recovery in Air Intake and Diffuser, Compressor and Turbine Efficiency, Combustion Chamber Efficiency and Pressure Loss, Exhaust Nozzle Loss)
7	Component Performance (Summary of Component Performance Metrics, Component Performance with Variable Cp), Parametric Cycle Analysis of Real Engines (Turbojet)
8	MIDTERM
9	Parametric Cycle Analysis of Real Engines (Turbojet with Afterburner)
10	Parametric Cycle Analysis of Real Engines (Seperated Exhaust Flow Turbofan)
11	Engine Performance Analysis (Input, Gas Generator)
12	Engine Performance Analysis (Turbojet Engine)
13	Engine Performance Analysis (Turbofan Engine)
14	Review
15,16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**X**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**X**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**X**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	**X**		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			**X**
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**X**	
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Associate Prof. Isil YAZAR

Signature: **Date:** 25/12/2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152416005	COURSE NAME	MECHANICAL VIBRATIONS

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	4	COMPULSORY (*) ELECTIVE ( )	ENGLISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
	X	X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	-
COURSE DESCRIPTION	Kinetics of vibration, single-degree of freedom system, vibration isolation, two degrees of freedom system, dynamic vibration absorber, multi-degree of freedom system,torsional vibration.
COURSE OBJECTIVES	The objective of the course is to provide the student with the ability to model mechanical systems and determine their natural frequencies, grasping the basics of the theory of vibration isolation.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION	The main aim of the course is to prevent the system from being damaged by using/and applying vibration isolation theory.
COURSE OUTCOMES	I. Be able to recognize and identify the problems of Mechanical Systems. II. Defining the problem. III. Calculating and analyzing the problems by using necessary formulas. IV. Evaluating the results. V. Evaluating the solution by considering the calculation results. VI. Be able to apply the vibration isolation theory.
TEXTBOOK	Mechanical Vibrations Lecture Notes, Prof.Dr. Zeki Kıral
OTHER REFERENCES	1. Rao, S. S. Mechanical Vibrations. 3rd ed. Addison Wesley, 1995. 2. Beer, Ferdinand Pierre. Vector Mechanics for Engineers. McGraw-Hill, 1988. 3. Williams, James H., Jr. Fundamentals of Applied Dynamics. John Wiley & Sons, Inc., 1996.
TOOLS AND EQUIPMENTS REQUIRED	-

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Kinetics of vibration
2	Single-degree of freedom systems
3	Rayleigh method
4	Undamped vibration problems
5	Damped vibrations logarithmic decrement
6	Forced vibration
7	Forced vibration problems
8	EXAM
9	Vibration isolation
10	Two degrees of freedom system
11	Dynamic vibration absorber
12	Multi-degree of freedom system
13	Torsional vibration
14	Continous systems
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	**x**		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	**x**		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		**x**	
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		**x**	
9	Understanding of professional and ethical issues and taking responsibility			
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Assoc. Prof. Dr M. Alper Sofuoğlu

Signature:

Date: 14.02.2023

ESOGÜ AERONAUTICAL ENGINEERING DEPARTMENT
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152416006	COURSE NAME	PRACTICAL TRAINING 1

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	0	0	0	0	3	COMPULSORY (X) ELECTIVE ( )	TURKISH

COURSE CATAGORY			
Basic Science	Basic Engineering	Mechanical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
		X	

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term		
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM			100

PREREQUIEITE(S)	NONE
COURSE DESCRIPTION	Practical training
COURSE OBJECTIVES	Organization Application
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Organization Application
COURSE OUTCOMES	Organization Application
TEXTBOOK	
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Organization Application
2	Organization Application
3	Organization Application
4	Organization Application
5	Organization Application
6	Organization Application
7	Organization Application
8	MIDTERM
9	Organization Application
10	Organization Application
11	Organization Application
12	Organization Application
13	Organization Application
14	Organization Application
15,16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	X		
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	X		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	X		
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	X		
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	X		
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	X		
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	X		
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	X		
9	Understanding of professional and ethical issues and taking responsibility	X		
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	X		
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	X		
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:** 13/02/2023

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152416007	COURSE NAME	BEGINNING FRENCH 2

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	3	COMPULSORY ( ) ELECTIVE (X)	FRENCH

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
			X

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	Beginning French I
COURSE DESCRIPTION	Acheter quelque chose.Parler du temps qu'il fait.Raconter quelque chose au passAcheter quelque chose.Parler du temps qu'il fait.Raconter quelque chose au passé.
COURSE OBJECTIVES	Demander et donner des indications.Commander un repas.Décrire un appartement.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Communication skills in a foreign language (French) Understanding a foreign culture (French)
COURSE OUTCOMES	1.Ordering food at a restaurant 2. Describing a house or building. 3. Telling about an event from past 4. Writing a message or letter to a friend. 5. Handling communication for shopping and traveling
TEXTBOOK	Francofolie I
OTHER REFERENCES	Grammaire progressive du français.
TOOLS AND EQUIPMENTS REQUIRED	none

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Acheter quelque chose:Demander le prix et payer.
2	S'orienter:Demander et donner des indications.
3	Commander un repas.
4	Décrire un appartement.
5	Proposer et accepter un rendez-vous.
6	Faire des suppositions.
7	Etablir des comparaisons.
8	MIDTERM
9	Parler du temps qu'il fait.
10	Raconter quelque chose au passé.
11	Parler de ce qui va passer.
12	Organiser un voyage et réserver ses places.
13	Ecrire un message amical.(lettre,courriel)
14	Ecrire un message amical.(lettre,courriel)
15,16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.		**X**	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.			**X**
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:** 25/12/2022

ESOGÜ Aeronautical Engineering Department
COURSE INFORMATION FORM

SEMESTER	SPRING

COURSE CODE	152416008	COURSE NAME	GERMAN 2

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
6	3	0	0	3	3	COMPULSORY ( ) ELECTIVE (X)	GERMAN

COURSE CATAGORY			
Basic Science	Basic Engineering	Aeronautical Engineering Profession [if it contains considerable design, mark with (√)]	Social Science
			X

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	50
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	50

PREREQUIEITE(S)	GERMAN I
COURSE DESCRIPTION	Demonstrativpronomen, Wechselpräpositionen, reflexive Verben, das Präteritum, das Perfekt, Ergänzung der Deklination, Verben mit Präpositionen, der Genitiv
COURSE OBJECTIVES	The main aim of this course is to help students to get the basics of the German grammar.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	By the end of this course student will be able to: 1. Read, write and understand simple German
COURSE OUTCOMES	Read, write and understand simple German
TEXTBOOK	Schulz-Griesbach: Deutsch für Ausländer. Dreyer-Schmitt: Lehr- und Übungsbuch der deutschen Grammatik, Vlachos N.: Exakt 1-2, Schulz-Sundermeyer: Deutsche Sprachlehre für Ausländer, Mahler G., Schmitt R.: Wir lernen Deutsch, 1-2
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Demonstrativpronomen
2	Demonstrativpronomen
3	Wechselpräpositionen
4	Wechselpräpositionen
5	Reflexive Verben
6	Reflexive Verben
7	Reflexive Verben
8	MIDTERM
9	Das Präteritum, das Perfekt
10	Ergänzung der Deklination
11	Verben mit Präpositionen
12	Der Genitiv
13	Der Genitiv
14	Der Genitiv
15,16	FINAL EXAM

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.			**X**
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.			**X**
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.			**X**
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.			**X**
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			**X**
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.		**X**	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			**X**
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	**X**		
9	Understanding of professional and ethical issues and taking responsibility			**X**
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			**X**
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			**X**
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s):

Signature: **Date:** 25/12/2022