Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

TEB291	Oral Expression				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	TEB291	Oral Expression	2	2	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Seçmeli
Goals:
Comprehends and applies the aims of oral expression. •Comprehends and applies the principles of oral expression. •Comprehends and applies the types of oral expression.
Teaching Methods and Techniques:
The main features of Lecture . The main features of speech skills (using natural language and body language) . The basic principles of a good conversation . Should have a good speaker features (stress, intonation, pause , speed, etc. .) Impromptu (Daily) and Preparedness (Mass) Speeches . Types of speech: Impromptu (Day Speeches: (Greetings, their health ask, Dating and Introductions , Questioning and Response , Celebration (Congratulations) Condolences (sympathy) , Apology , telephone conversation , to the staff talk. Prepared speech (topic selection and limiting , the objective point of view, the main and supporting ideas , planning , writing the text and presentation of the speech) . prepared Speech (mass speeches) : Conference, Plenary Session , Panel, Symposium , Forum, Dialogue, Debate, Interview / Interview, survey , speech , speeches , Radio and Television speech , Culture and arts programs joining as a speaker .) studies on speech samples and oral applications, correcting errors in speech language and expression .
Prerequisites:

Course Coordinator:

Instructors:
Asist Prof. Dr. MEHMET ULUCAN
Assistants:

Recommended Sources

Textbook	:	1.	Türk Dili ve Kompozisyon Bilgileri (20010), Mehmet Ulucan vd. Data Yay., Ank.
Resources	:	2.	Söz ve Diksiyon Sanatı (2008), Nüzhet Şenbay, YKY, İst.
Documents	:	3.	Konuşma Eğitimi (2000), Konuşma Eğitimi, Papirüs Yay., İst.
Assignments	:	4.	Sözlü Anlatım Nasıl Konuşabilirim? (2011), Sıddık Akbayır, Pegem Akademi, Ank.
Exams	:	5.	Türkçe Sözlük (2005) TDK Yay., Ank.
		6.	Yazım Kılavuzu (2005) TDK Yay., ank.

Course Category

Mathmatics and Basic Sciences	:	**Education**	:	25
Engineering	:	**Science**	:	
Engineering Design	:	**Health**	:	
Social Sciences	:	**Field**	:	75

Course Content

Week	Topics	Study Materials	Materials
1	The techniques used for the development of appropriate and effective speaking skills, diction and its importance, training v		
2	Using body language, speech, issues that are important for the correct pronunciation of Turkish		
3	Speaking mistakes, correct spelling, correct stress, correct intonation		
4	Text reading studies, poetry reading techniques		
5	Preparing speech for important days		

Course Learning Outcomes

No	Learning Outcomes
C01	Turkish and international art, history of art education is knowledge about aesthetic and artistic criticism.
C02	Art and education programs related to the arts education field, with knowledge of teaching strategies, assessment and evaluation methods and techniques.
C03	Art and design, material, knowledge of the methods and techniques; Specializing in the field of visual arts.
C04	Visual arts and understand the basic concepts and relationships between concepts of art education.
C05	Development of theories about art education, artistic development stages and have knowledge about learning characteristics; Relate the theory and practice of information.
C06	Have information about health and safety in the field.
C07	Using an interdisciplinary approach in the field of theory and practice to derive conclusions from the data have to interpret and evaluate skills.
C08	Different venues as national and international educational environment in the field of teaching (galleries, museums, historic sites, etc.) To use, activities (exhibitions, symposia, conferences, panel d
C09	Original and creative ideas to gain the ability to convert artwork.
C10	Personal, spiritual, ethical, planned activities will contribute to the social and cultural development.
C11	It has advanced visual literacy and visual communication skills.
C12	Art and arts education in the areas of project creation and has the competence to be able to organize the process involving the submission of the relevant age group.
C13	Students' level, two and three-dimensional art techniques, methods and teaching strategies for individual characteristics and interests, methods and techniques are set according to the learning are
C14	It has the ability to work with the individual and groups.

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	2	28
Hours for off-the-c.r.stud	0	0	0
Assignments	15	2	30
Presentation	15	2	30
Mid-terms	1	1	1
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	1	1
Total Work Load			**90**
ECTS Credit of the Course			**3**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P06
All	5
C01	5
C02	5
C03	5
C04	5
C05	5
C06	5
C07	5
C08	5
C09	5
C10	5
C11	5
C12	5
C13	5
C14	5

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

KAM253	Political History				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	KAM253	Political History	2	2	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Seçmeli
Goals:
To provide the students with a basic level of knowledge on the history of political thought.
Teaching Methods and Techniques:

Prerequisites:

Course Coordinator:

Instructors:

Assistants:

Recommended Sources

Textbook	:	
Resources	:	A-Textbook: Lary Arnhart, Plato'dan Rawls'a Siyasi Düşünce Tarihi, Adres Yayınları, 2008. B-References: George Sabine, Yakınçağ Siyasal Düşünce
Documents	:	
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Subject of political thought		
2	Thinking on Human and Sophists		
3	Sokrates and Platon		
4	Aristotle		
5	Epicurism		
6	Stoicism		
7	Roman Political Thought		
8	Christian Political Thought: Augustine and Aquinas		
9	Machiavelli and Modern Political Philosophy		
10	Hobbes and the Modern State Thought		
11	Locke and the Liberal Thinking		
12	Rousseau and the General Will		
13	Montesquieu and Aristocratic Liberalism		
14	Historicism: Hegel and Marx		

Course Learning Outcomes

No	Learning Outcomes
C01	To have information about political thought.
C02	To understand the historicity of political thought.
C03	To understand the transformations in the historical process of political thinking.
C04	To comprehend political thought developed in a continuum.
C05	To comprehend the continuity in political thought with a critical perspective.
C06	To gain a conceptual viewpoint about political phenomenon.
C07	To have information about the philosophical foundations of political concepts.
C08	To be able to make comparisons between different political ideas.

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	3	42
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	60	60
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	60	60
Total Work Load			**162**
ECTS Credit of the Course			**5**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P09	P10
All	4	4

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

İŞL251	Workshop Management				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	İŞL251	Workshop Management	2	2	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Seçmeli
Goals:
Engineering students, business to introduce the concept to provide information about the importance and basic methods, professions with care related technical issues eyes operators where they work outside and is intended to open their horizons towards job opportunities in research on various subjects.
Teaching Methods and Techniques:
To define the basic concepts and management functions of the organizational structure, to explain classical and contemporary management models and practices, Managers analyze the changes and needs emerge in the role and time management functions in the organizational success, evaluate the impact of environment and the general organization of individual management decisions, the problems faced by managers in the 21st Century and to predict the effects of globalization on management
Prerequisites:

Course Coordinator:

Instructors:

Assistants:

Recommended Sources

Textbook	:	Business Management- Emel BAHAR
Resources	:	
Documents	:	
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Introduction: Basic Concepts, Management Skills		
2	Classical and Behavioral Management Approaches		
3	Contemporary Management Approaches: Management Science Approach, System Approach and Contingency Approach		
4	Management Functions: Setting Objectives in Organizations		
5	Planning and Decision Making		
6	Organization: Basic Organizational Design		
7	Organization: Authorization Types, Responsibility, Devolution		
8	midterm		
9	communication		
10	leadership		
11	motivation		
12	Control, Information Technology		
13	Management in the Global Market		
14	Social Responsibility and Business Ethics		

Course Learning Outcomes

No	Learning Outcomes
C01	To define the basic concepts of organizational structure and management functions
C02	Explain classic and modern management models and practices
C03	Managers need to analyze the changes occur in the role and functions of the organizational and time management success
C04	To evaluate the effect of individual management decisions in general and the environment of the organization
C05	21st Century problem managers may face and to predict the effects of globalization on management

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	3	42
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			**88**
ECTS Credit of the Course			**3**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P09	P10	P11
All	3	5	4

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

EĞT203	Growing and Learning				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	EĞT203	Growing and Learning	2	2	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Seçmeli
Goals:
1 - To teach the psychological processes related to the period of childhood 2 - To analyze the problems of childhood.
Teaching Methods and Techniques:
In childhood psychology, history, methods, What is the progress? (Growth, maturation), technical factors affecting the properties of circuits and development, physical development and movement development, personality development, moral development, emotional development, social development, cognitive development (perception, concepts, language development), development of intelligence, conception 12 years until the end of the various aspects of development and their characteristics.
Prerequisites:

Course Coordinator:

Instructors:
Asist Prof. Dr. Dilek ER
Assistants:

Recommended Sources

Textbook	:
Resources	:
Documents	:
Assignments	:
Exams	:

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	In psychology and history of childhood		
2	Childhood psychology methods		
3	The concept of development (growth, maturation)		
4	Factors affecting development		
5	Development periods and their characteristics		
6	Physical development		
7	The development of movement		
8	Midterm Exam		
9	Personality development		
10	Moral development		
11	Emotional development		
12	Social development		
13	Cognitive development		
14	Brain development		
15	Overall rating		

Course Learning Outcomes

No	Learning Outcomes
C01	To understand the scientific thought.

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	0	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	0	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	20	20
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	20	20
Total Work Load			**110**
ECTS Credit of the Course			**4**

Course Contribution To Program
Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

ÇEK207	Industrial Sociology				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	ÇEK207	Industrial Sociology	2	2	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Seçmeli
Goals:
To learn effects of the industrialization on social life To learn socio-industrial theories
Teaching Methods and Techniques:
Basic concepts related to industrial sociology, the effects of industrialization on social life, industrial organizations related to work organization theories, theories about the labor movement and labor unions, industrial production systems, and perspectives on the contemporary industrial organizations, social structure and functioning of modern industrial organizations, factory ownership, manager specialist, foreman, working status and roles, groups, non-official role and importance in industrial organizations, the industrialization of Turkey in general, labor movement in Turkey, labor unions, employer associations, industrialization and social change.
Prerequisites:

Course Coordinator:

Instructors:
Associate Prof. Dr. İLKNUR ÖNER
Assistants:

Recommended Sources

Textbook	:	Soyer,S (1996) Endüstri Sosyolojisine Giriş, Saray Medikal Yay. İzmir.
Resources	:	Aron,R (1974) Sanayi Toplumu (Çev:A.O.Güner), Boğaziçi Yay.İst. and others.
Documents	:	Kıray,M. (1964) Ereğli: Ağır Sanayiden Önce Bir Sahil Kasabası. Ankara:DPT.yay.
Assignments	:	Serin,N. (1968) Türkiye'nin sanayileşmesi. Ankara:SBF yay.
Exams	:	Tofler,A.(1985) Gelecek Korkusu"Şok". İstanbul:Altın Kitaplar Çev. S.Sorgut. Rostow.W.W. (1972) İktisadi Gelismenin Merhaleleri. Cev. E.Güngör.İst.MEB

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Introduction: The course subject, scope and objectives		
2	Establishment of industrial sociology, the factors affecting the emergence and development, a brief history		
3	Impacts of the industrialization on social life		
4	Correlation of the effects of the industrialization on social life within the frame of the concepts and some features		
5	Theories concerning the organization of work, Taylorism		
6	Mayo School		
7	Theories related to labor unions and labor movement (Perlman etc)		
8	MIDTERM EXAM		
9	Tanenebaum		
10	Approaches of Webb's		
11	Industrial production systems (guild, home employment, flexible employment, etc.)		
12	Examples of application and research		
13	General assessment		
14	exams according to official appropriate time table		

Course Learning Outcomes

No	Learning Outcomes
C01	To gain understanding on relations between theory-society and industry
C02	awarness on relations between social,industrial and disciplinary occupational processes. Gaining understanding on methodological analytical aproaches

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	0	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	0	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	4	56
Assignments	1	25	25
Presentation	0	0	0
Mid-terms	1	30	30
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	30	30
Total Work Load			**183**
ECTS Credit of the Course			**6**

Course Contribution To Program
Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

İŞL451		Entrepreneurship-1			
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	İŞL451	Entrepreneurship-1	2	2	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Seçmeli
Goals:
The aim of the course is to teach basic concepts related to the process of entrepreneurship and entrepreneurship behaviors and attitudes and as a entrepreneur to demonstrate creativity in the use of different methods about evaluating opportunities and to overcome challenges they may encounter.
Teaching Methods and Techniques:
Initiative and Entrepreneurship, Concepts and Emergence of Entrepreneurship, Personality Traits of Entrepreneurs and Entrepreneurship Culture,The Importance of Business Idea Generation and Entrepreneurship Policies,Beginning and Building a Business Process,Small Business Types, Small Business Enterprise Process,Small Business Management, Midterm Exam, Production in Small Businesses, Small Business Marketing, Small Business Financing, Small Business Problems and Solutions, Business Ideas that can be done Entrepreneurship in Turkey, Problems And Solutions for Entrepreneurship in Turkey.
Prerequisites:

Course Coordinator:

Instructors:
Associate Prof. Dr. Ahmet ORHAN
Assistants:

Recommended Sources

Textbook	:	The fundamentalls of Enterpreneurship,
Resources	:	KOSGEB's lecturers notes
Documents	:	
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Girişimcilik nedir? İşletmenin tarifi, İşletme nasıl yönetilir?		
2	İşletmelerin hazırlaması gereken planlar, İnsanlığın gelişiminde girişimciler		
3	Girişimcide bulunması gereken özellikler, Kendinizi değerlendirin girişimci misiniz?		
4	Girişimcinin amaçları, girişimci olarak sizin amaçlarınız nelerdir?		
5	Girişimcinin özellikleri girişim türleri, girişimciliğe etki eden faktörler		
6	İş kurma sürecindeki temel aşamalar		
7	Yatırım kararı ve yapılabilirlik çalışmaları		
8	Planlama, temel işletme bilgileri, sabit değişken masraf tanımı		
9	Ara sınav		
10	Plan çeşitleri		
11	E ticaret ve girişimcilik		
12	Nakit akış yöntemi		
13	Finansal planlama		
14	İş planına giriş		

Course Learning Outcomes

No	Learning Outcomes
C01	Learning about the organizations that provide entrepreneurship support
C02	Obtaining information about the kinds of small businesses
C03	Obtaining information about how the financing will be be done in the small enterprises

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%40
Quizzes	0	%0
Assignment	1	%20
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%40
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	2	28
Hours for off-the-c.r.stud	8	2	16
Assignments	1	2	2
Presentation	0	2	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			**50**
ECTS Credit of the Course			**2**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P08	P09	P10
C01	4		
C02		4	
C03			4

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

TRD209	Turkish Language-1				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	TRD209	Turkish Language-1	2	0	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
Students know the properties of the Turkish language correctly and effectively be able to use and better able to express himself in the community to help. Necessary for an understanding of a text read listened to fulfill teachings. literary and scientific texts to gain the ability to take notes, with a variety of classical and contemporary texts contribute to the development of vocabulary, reading habits, to teach you the skills to give presentations in front of people. Indicating the position of Turkish language among world languages, the first works to introduce our language, to teach Turkish sound and the structure, spelling, punctuation marks used in place of the taught man, to introduce oral and written literature.
Teaching Methods and Techniques:
Language of the definition, properties, in human life. Language and thought, language and nation, language and culture. Classification of languages, Turkish place among the world's languages. Turkish historical phases, the alphabets used by the Turks, the establishment of Turkish Language Association. Spelling and punctuation rules. Turkish phonetics. Meaning knowledge, interpersonal relationships Words, Sentences information.
Prerequisites:

Course Coordinator:
Instructor Hasan Özçam
Instructors:

Assistants:

Recommended Sources

Textbook	:	Turkish language course lecture notes
Resources	:	
Documents	:	TÜRKÇE SÖZLÜK; TDK Yayınları, Ankara, 2005,ERGÜZEL,Mehdi;GÜLSEVİN,Güerer,BOZ,Erdoğan;YAMAN,Ertugrul,Üniversiteler İçin Türk Dili,Ankara,
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	the language definition, defining characteristics, sub-branches, types, and the importance of language in our lives.		
2	Language and thought, language and nation, language and culture connection.		
3	Earth language families, format and classification in terms of resources, Turkish place among the world's languages.		
4	The historical period of Turkish (Ottoman Turkish, Middle Turkish, New Turkish periods.)		
5	Turkish is written in alphabets, Köktürk-Uighur-Arab-Turkish Latin alphabet; The origin and meaning of the name of Turkey		
6	Today and spread areas of Turkish-Southwestern (Oguz), Southeast (Uighur), Northwestern (Kipchak), Northeast group of		
7	Spelling and punctuation rules.		
8	Arasınav		
9	Linguistics and language, Turkish phonetics: Celebrities, auxiliary audio, famous-consonant harmony, sound events.		
10	Format of information: The roots and affixes, affixes, suffixes		
11	Pronouns (pronouns), prepositions, (prepositions), conjunctions, interjections, actions.		
12	Vocabulary, semantics, relations between words, meaning events.		
13	Sentence Structure (Sentence types, elements, word phrases.)		
14	Example sentence analysis.		

Course Learning Outcomes

No	Learning Outcomes
C01	Dersin amacını ve işleyiş planını görür, dilin tanımını ve insan hayatındaki yerini kavrar, konuşma ve yazı dili arasındaki farkları bilir.
C02	Türkçenin şekil yapısını bilir, imlâ-noktala a işaretlerini yerinde kullanır.
C03	Kitap okuma alışkanlığını kazanır, günlük gazete ve diğer süreli yayınları takip eder.
C04	Dilin özelliklerini, dil-toplum ve dil-kültür ilişkilerini kavrar; okuma ve anlama yöntemlerini bilir.
C05	Genel iletişimde yapılan hataları görür, topluluk önünde konuşma yapmanın inceliklerini bilir.
C06	Türk dilinin ses özelliklerini bilir, kültürün ne olduğunu ve değişip değişmeyen unsurlarını kavrar.
C07	Cümlenin öğelerini ve cümle türlerini bilir, tiyatro ve senaryo gibi kullanmalık metinler hakkında bilgi sahibi olur, yazı yazmanın ön hazırlıklarını görür.
C08	Çevresindeki dil kirliliğine yol açan kelimelerin dil üzerindeki etkilerini hesaplayabilir.

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	0	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	0	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	2	28
Hours for off-the-c.r.stud	5	1	5
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	10	10
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	20	20
Total Work Load			**63**
ECTS Credit of the Course			**2**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P01	P02	P03	P04
All	2	2	3	4
C01	2			
C02	2			
C03			3	
C04			3	
C05			3	
C06		2		
C07	2			
C08				4

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

MMÜ203	Computer Aided Technical Drawning				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	MMÜ203	Computer Aided Technical Drawning	4	3	5

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
1. To teach to fundamentals of computer aided technical drawing by using a commercial CAD package. 2. Computer aided 2D drafting and 3D solid modeling, and to fully defined engineering models 3. How to design and align elements of an assembly and assembly drawings in computer environment.
Teaching Methods and Techniques:
Introduction to computer aided technical drawing. Presentation of a commercial CAD package program. Layers. Geometric drawing functions in 2D. Dimensioning principles. Multi-view projection. Sectioning and conventions. Perspective drawing. Mechanical assembly drawing. Introduction to 3D modeling. . Solid modeling. Wire frame modeling. Surface modeling
Prerequisites:

Course Coordinator:

Instructors:
Associate Prof. Dr. Latif ÖZLER
Assistants:
Research Assist. M.Erbil ÖZCAN

Recommended Sources

Textbook	:	1.	İ.Z.Şen ve N. Özçilingir, "Teknik Resim Temel Bilgiler", Deha Yayımcılık, İstanbul, 2012.
Resources	:	2.	K.Gök ve A.Gök" AUTOCAD 2015" Seçkin Yayıncılık, İstambul,2014
Documents	:	3.	Murat Öğütlü ve Gökalp Baykal„AUTOCAD 2014" Pusula yayıncılık, Ankara,2014
Assignments	:	4.	T.E. French, C.J. Vierck and R.J. Foster, "Engineering Drawing and Graphics Technology", McGraw-Hill Inc., 1993.
Exams	:	5.	İ.Z.Şen ve N.BORA "Bilgisayar Destekli Teknik Çizim" Deha Yayımcılık, İstanbul, 2007

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Bilgisayar destekli çizime giriş. CAD çizim programının tanıtılması		
2	İki boyutlu temel çizim komutları		
3	İki boyutlu temel çizim komutları		
4	Katmanlar , İki boyutlu çizimler		
5	İzdüşüm yöntemleri		
6	Görünüş resimleri		
7	CAD programında görünüş resim çizimleri		
8	ARA SINAV		
9	Ölçülendirme		
10	Kesit görünüşler		
11	Kesit görünüşler		
12	Perspektif resimler		
13	CAD programında İzometrik perspektif çizimi		
14	3 Boyutlu modelleme		

Course Learning Outcomes

No	Learning Outcomes
C01	CAD programı yardımıyla Uluslararası Standartlarda Teknik Resimleri çizebilme becerisine sahip olma
C02	Herhangi bir parçanın perspektif resmini çizebilme becerisine sahip olma
C03	Çizilmiş teknik resimleri okuyup anlayabilme becerisine sahip olma

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	0	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	0	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	5	70
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	4	4
Practice	0	0	0
Laboratory	14	2	28
Project	1	6	6
Final examination	1	4	4
Total Work Load			**140**
ECTS Credit of the Course			**5**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P01	P03	P04
C01	2	3	5
C02			5
C03	2	3	5

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

MAT271	Differantial Equations				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	MAT271	Differantial Equations	4	4	5

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
The main of the cource is to introduce students to a range of a basic differential equations knowledge which applied mathematics and physics.
Teaching Methods and Techniques:
Basic consepts, Basic types of first order linear differential equations, Theoretical and practical importance of linear diferential equations,High order linear differential equations
Prerequisites:
(MAT161)
Course Coordinator:

Instructors:

Assistants:

Recommended Sources

Textbook	:	İrfan Baki Yaşar; "Diferensiyel Denklemler ve uygulamaları", "siyasal" kitap evi, 2005, Ankara
Resources	:	Mehmet Çağlıyan,Nisa Çelik, Setenay Doğan; "Adi Diferensiyel Denklemler", Tek Ağaç Eylül Yay. 2007, Ankara.
Documents	:	
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Basic consepts		
2	Origin of the differential equations, integral curves, family of curves		
3	Existence and uniquenesstheoremsfor first order IVP		
4	Seperable differential equations, homogenous differential equations		
5	Differential equations can be reduced to a homogenous differential equations		
6	Exact differential equations		
7	Non exact differential equations		
8	Linear differential equations, Differential equations can be reduced to a linear differential equations		
9	First order non linear differential equations		
10	Singular solution, Clairut and D'alambert differential equations		
11	Linear Equation with constant coeffiecients		
12	Variation of parameters		
13	The method of undeterminated coeffiecients		
14	The Cauchy-Euler equation		

Course Learning Outcomes

No	Learning Outcomes
C01	The knowledge and concept of differential equations.
C02	Basic types of first order linear differential equations
C03	Theoretical and practical importance of linear diferential equations
C04	High order linear differential equations

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	0	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	0	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	8	112
Assignments	8	2	16
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			**160**
ECTS Credit of the Course			**5**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P01	P02
All	5	3

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

EEM257	Circuit Theory				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	EEM257	Circuit Theory	3	3	5

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
Ability to obtain equivalent representations, and simplified models of circuits. Ability to describe the concepts of electric voltage, current, power and energy, and comprehend and employ Kirchoff's laws that govern them, to solve the general electrical behavior of circuits. Ability to transform a circuit with a sinusoidal source into the frequency domain using phasor concepts and apply the circuit analysis techniques to determine the sinusoidal steady state response of a linear circuit. Calculate the instantaneous power, average power, reactive power, complex power and power factor in a circuit. Ability to analyze the balanced three-phase circuit.
Teaching Methods and Techniques:
1 Introduction, two and four terminal passive circuit elements. 2 Properties of linear two terminals. 3 Circuit graph. 4 Basic mesh, basic cut-set formulations and graph matrices. 5 Active circuits elements and source functions, non-periodic and periodic functions. 6 Circuit solution with mesh formulation. 7 Circuit solution with node formulation. 8 Mid term 9 Sinusoidal Steady-state. 10 Phasors and phasor actions. 11 Mesh and node formulations in sinusoidal steady-state case and m-parameter case. 12 Power and average power in sinusoidal steady-state case. 13 Impedance and admittance account. 14 Circuit theorems in sinusoidal steady-state. 15 Three-phase systems and symmetrical components.
Prerequisites:

Course Coordinator:

Instructors:
Prof. Dr. Arif GültenProf. Dr. Yakup Demir
Assistants:

Recommended Sources

Textbook	:	Elektrik Devrelerine Giriş Ders Notları, Prof. Dr. Ahmet DERVİŞOĞLU,
Resources	:	
Documents	:	İTÜ. Elektrik Devrelerinin Analizi, Prof. Dr. Cevdet ACAR, İTÜ Yayını, 1995. Devre Analizi Dersleri, Kısım 1,2,3,4, Prof .Dr. Yılmaz TOKAD, Çağlayan
Assignments	:	
Exams	:	

Course Category

Mathmatics and Basic Sciences	:	40	**Education**	:	
Engineering	:	45	**Science**	:	
Engineering Design	:	15	**Health**	:	
Social Sciences	:		**Field**	:	

Course Learning Outcomes

No	Learning Outcomes
C01	Students learn the properties of linear two terminals
C02	Students learn the steady state analysis by mesh and nodal methode Circuit solution with node formulation.

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%40
Quizzes	0	%0
Assignment	9	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	5	70
Assignments	9	3	27
Presentation	0	0	0
Mid-terms	1	3	3
Practice	0	0	0
Laboratory	0	0	0
Project	2	3	6
Final examination	1	2	2
Total Work Load			**150**
ECTS Credit of the Course			**5**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P01	P02	P03
All	5	4	2
C01	4	2	4
C02	4	4	3

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

EEM255	Electromagnetic Fields-1				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	EEM255	Electromagnetic Fields-1	2	2	5

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
Electrical and Electronic Engineering to a foundation with the purpose of learning vector operations and coordinate systems . In the space of a static electric field , the behavior of conductors and insulators and learn relevant relationships with them.
Teaching Methods and Techniques:
Electric field, electric flux density and electrical power concepts. Coulomb and Gauss laws. Law of conservation of charge, conductivity. Electric flux density, polarization . Electrical sensitivity and permeability concepts. Isolators, the continuity conditions at the interface and stored energy . The potential energy of a charge distribution. Capacity (condenser) calculation.
Prerequisites:

Course Coordinator:

Instructors:
Prof. Dr. Mehmet CEBECİAsist Prof. AYHAN AKBAL
Assistants:

Recommended Sources

Textbook	:	Electromagnetism, I. S. GRANT etc., John Willey, Yayınyılı. Electromagnetsim for Engineers, P. HAMMOND, Pergamon Press, Yayınyılı. Electromagn
Resources	:	Electromagnetism, I. S. GRANT etc., John Willey,,Electromagnetsim for Engineers, P. HAMMOND, Pergamon Press, ,Elektromagnetik Problemler ve
Documents	:	Electromagnetism, I. S. GRANT etc., John Willey, Yayınyılı. Electromagnetsim for Engineers, P. HAMMOND, Pergamon Press, Yayınyılı. Electromagn
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Basic concepts		
2	Coordinate systems, Loads		
3	Coulomb and Gauss laws.		
4	Electric field, electric flux density and electrical power concept		
5	Law of conservation of charge, conductivity.		
6	Electric flux density, polarization		
7	midterm exam		
8	Electrical sensitivity and permeability concepts.		
9	Isolators, the continuity conditions at the interface and stored energy .		
10	Isolators, the continuity conditions at the interface and stored energy .		
11	The potential energy of a charge distribution.		
12	The potential energy of a charge distribution.		
13	Capacity (condenser) calculation.		
14	Place in the daily lives of the Electric Field.		

Course Learning Outcomes

No	Learning Outcomes
C01	The skills such as defining engineering problems about electromagnetic, modeling, formulation, and solving. The skills such as using modern tools, techniques, and methods required for engineerinc

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%30
Quizzes	0	%0
Assignment	6	%10
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	2	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	8	112
Assignments	3	5	15
Presentation	0	0	0
Mid-terms	1	2	2
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	2	2
Total Work Load			**159**
ECTS Credit of the Course			**5**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P01	P02
All	4	3
C01	4	3

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

EEM223	Measurement				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	EEM223	Measurement	2	2	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
Learning of basic electrical measurement principles, the structure and operation of measuring instruments, basic and derivatives magnitudes of measurement, measurement errors, combining of measurement errors, the structure of analog measurement instruments, operating principles, equations of motion, solution of these equations, the structure, varieties and using of oscilloscope, electrical magnitudes, measurement with measuring instruments, equalization methods and bridges, measurement with different methods of circuit elements, electrical measurement of physical and mechanical magnitudes, the structure and operation of digital measuring instruments, and measurement of some physical magnitudes with digital methods.
Teaching Methods and Techniques:
1 Basic Measurement Principles 2 Measurement errors and merging 3 Digital measuring instruments, structures, and operating principles 4 Offset (Analog) measurement tools, structure, working principles, equations, and solutions 5 Offset (Analog) measurement tools, structure, working principles, equations, and solutions 6 Structure, using and varieties of oscilloscope 7 Structure, using and varieties of oscilloscope 8 Mid-Term Week 9 Measurement of Electrical Magnitudes 10 Measurement with Equalization Method 11 Measurement of Electrical Magnitudes with Bridges 12 Measurement of circuit elements with different methods 13 Measurement of circuit elements with different methods 14 Electrical Measurement of Non-Electrical Quantities
Prerequisites:

Course Coordinator:

Instructors:
Prof. Dr. Hasan Kürüm
Assistants:

Recommended Sources

Textbook	:	Ölçme Tekniği, Prof. Dr. Sefa AKPINAR, KTÜ Yayını,1992. Ölçme Tekniği, Hasan ÖNAL, İTÜ Yayını, 1993. Elektrik ve Elektronik Ölçmeleri, Doç. Dr.
Resources	:	
Documents	:	
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Basic Measurement Principles		Ders Notları
2	Measurement errors and merging		Ders Notları
3	Digital measuring instruments, structures, and operating principles		Ders Notları
4	Offset (Analog) measurement tools, structure, working principles, equations, and solutions		Ders Notları
5	Offset (Analog) measurement tools, structure, working principles, equations, and solutions		Ders Notları
6	Structure, using and varieties of oscilloscope		Ders Notları
7	Structure, using and varieties of oscilloscope		Ders Notları
8	Mid-Term Week		Ders Notları
9	Measurement of Electrical Magnitudes		Ders Notları
10	Measurement with Equalization Method		Ders Notları
11	Measurement of Electrical Magnitudes with Bridges		Ders Notları
12	Measurement of circuit elements with different methods		Ders Notları
13	Measurement of circuit elements with different methods		Ders Notları
14	Electrical Measurement of Non-Electrical Quantities		Ders Notları

Course Learning Outcomes

No	Learning Outcomes
C01	Elektriksel olan ve olmayan büyüklüklerin ölçülmesi konusunda hakimiyet sağlar

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

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

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

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P01	P04
C01	4	4

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

EEM205	Electrical Circuits Lab.				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	EEM205	Electrical Circuits Lab.	2	1	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
Introduction to basic circuit element to be used in the laboratory and learn to use. To make the connection of the circuit. To perform measurements using ammeter, voltmeter and oscilloscope. see basic information, methods and theorems experimentally and compare with theory.
Teaching Methods and Techniques:
Experiment 1. Introduction of basic circuit elements to be used in the laboratory. Experiment 2. measuring current, voltage and resistance to using AVO meter. Mean and rms values. Experiment 3. measuring voltage, current and phase angle to using oscilloscope. Experiment 4. Kirchhoff's Laws. Experiment 5. measuring resistance by the Wheatstone bridge. Experiment 6. DC behavior of RL and RC circuits. Experiment 7. AC behavior of RL and RC circuits. Experiment 8. Series and parallel resonant circuits. Experiment 9. Thevenin's theorem, Norton's theorem, superposition theorem. Experiment 10. Three phase systems, star and delta binding.
Prerequisites:

Course Coordinator:

Instructors:
Asist Prof. Duygu KAYA
Assistants:

Recommended Sources

Textbook	:	Theory and practice lab sheets
Resources	:	
Documents	:	
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Establishment of experimental group and making related announcements		
2	Made courses related to laboratory rules and functioning		
3	Made courses related to content of experiments		
4	Week 1: the whole class, to be performed experiment 1		
5	Week 2: the whole class, to be performed experiment 2		
6	Week 3: the whole class, to be performed experiment 3		
7	Week 4 : to be performed to the relevant group of experiment 4 - experiment 10		
8	Week 5 : to be performed to the relevant group of experiment 4 - experiment 10		
9	Week 6 : to be performed to the relevant group of experiment 4 - experiment 10		
10	Week 7 : to be performed to the relevant group of experiment 4 - experiment 10		
11	Week 8 : to be performed to the relevant group of experiment 4 - experiment 10		
12	Week 9 : to be performed to the relevant group of experiment 4 - experiment 10		
13	Week 10 : to be performed to the relevant group of experiment 4 - experiment 10		
14	Experiment weeks for the students who have an excuse.		

Course Learning Outcomes

No	Learning Outcomes
C01	The students will gain work ability in a group individual
C02	They will gain ability of designing experiment, experimenting, analyzing empirical results and interpretation of the experimental results.
C03	They will gain the ability to use tools, methods and Techniques required for engineering applications.

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		**% 100**

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

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P04	P05	P08
All	3	5	3
C01			3
C02	3	5	
C03	3		

Firat University

FACULTY OF ENGINEERING
ELECTRICAL-ELECTRONICS ENGINEERING

AİT201	Princ. of Atatürk and Rev. Hist. -1				
Semester	**Course Code**	**Course Name**	**L+P**	**Credit**	**ECTS**
3	AİT201	Princ. of Atatürk and Rev. Hist. -1	2	0	2

Language of Instruction:
Turkish
Course Level:
Faculty
Work Placement(s):
No
Department / Program:
ELECTRICAL-ELECTRONICS ENGINEERING
Course Type:
Zorunlu
Goals:
Öğrencilerin Tarih ve vatandaşlık şuurunu kazanması. Genel Kültür bilgileri bakımından donanımı.
Teaching Methods and Techniques:
Teorik: Osmanlı mparatorluğundan Türkiye Cumhuriyeti'ne geçiş ve Cumhuriyetin temellerinin tanınması ve değerlendirilmesi.
Prerequisites:

Course Coordinator:

Instructors:
Associate Prof. Dr. Füsun KARAProf. Dr. Yüksel ARSLANTAŞ
Assistants:

Recommended Sources

Textbook	:	Prof..Dr. Rahmi DOĞANAY-Prof. Dr. Erdal AÇIKSES ve Diğer Türkiye Cunhuriyeti Tarihi ve Atatürk İlkeleri. Ders kitapları
Resources	:	Nutuk, Söylev ve Demeçler,
Documents	:	
Assignments	:	
Exams	:	

Course Category

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

Course Content

Week	Topics	Study Materials	Materials
1	Inkılap ve Konu Ile Ilgili Diğer Kavram ve Terimler(Tarih, Inkılap, ihtilal, Islahat, Batılılaşma vb.). Osmanlı Imparatorluğu'nu		
2	Osmanlı Devleti'nin Yıkılışının Dış Nedenleri(Coğrafi Keşifler, Rönesans ve Reform Hareketleri, Sanayi Inkılabı, Fransız İhtila		
3	Osmanlı Devletini Kurtarma Çabaları ve Buna Yönelik Yenilik Hareketleri. Tanzimat Oncesi Yapılan Çalışmalar, Tanzimat ve S		
4	Meşrutiyet Dönemi'nde Yapılan Yenilik Hareketleri (I. Meşrutiyet, İttihat ve Terakki Cemiyeti ve II. Meşrutiyet Ilanı) Osmanl		
5	Osmanlı Devleti'nin Parçalanma Sürecine Girmesi. Trablusgarp Savaşı, Balkan Savaşları, Balkan Savaşları Sürecindeki Antlaş		
6	I. Dünya Savaşı'mn Sebepleri, Türk Alman Yakınlaşma Birinci Dünya Savaşı'nın Başlaması ve Osmanlı Devleti'n Savaşa Giriş		
7	Savaşın Genel Seyri ve Sonuçlanması. Savaş Içinde ve Daha Once Yapılmış Olan Osmanlı Devleti'ni Paylaşma Projeleri (İsta		
8	ARASINAV		
9	Mondros Ateşkes Antlaşması. Ateşkesin Uygulanması ve Ilk Işgaller (Ingiliz ,Fransız ve Yunan işgalleri)		
10	İşgaller Karşı Tepkiler. Milli Cemiyetler ve Faaliyetleri. Zararlı Cemiyetler ve Faaliyetleri. Paris Konferansı		
11	Milli mücadele Dönemi. Mustafa Kemal'in Ordu Müfettişliği Görevine Atanması ve Samsuna Çıkışı. Havza'daki Faaliyetleri. Ar		
12	Amasya Görüşmesi, Heyet-i Temsiliye ve Mustafa Kemal Paşa'mn Ankara'ya Gelişi Son Osmanlı Meclis-i Mebusam'mn Açılm		
13	Ankara da Meclis'nin Açılış Hazırlıkları ve Açılışı, Mustafa Kemal Paşa'mn Meclis Başkanlığına Seçilmesi. Ilk Hükümetin Kurul		
14	Istanbul ve Ankara'nın Karşılıklı Fetvaları, Milli Mücadele Döneminde Iç Karışıklıklar. Hıyanet-i Vataniye Kanunu ve İstiklal M		
15	Final Sınavı		

Course Learning Outcomes

No	Learning Outcomes
C01	Öğrencilerin Tarih Şuuru ve Bilinci Kazanması
C02	Osmanlı Devletinin Yıkılışının Sebeplerini Öğrenme
C03	I. Dünya Savaşı'nm Sebep ve Sonuçlarıyla Öğrenilmesi
C04	Öğrencilerin Vatandaşlık Şuuru ve Bilinci Kazanması

Program Learning Outcomes

No	Learning Outcome
P08	Ability to work effectively in disciplinary and multi-disciplinary teams.
P02	Ability to define, formulate and solve complex engineering problems; ability to select and apply appropriate modeling and analysis methods for this purpose.
P07	Professional and ethical responsibility
P06	Ability to communicate effectively in Turkish orally and in writing; knowledge of at least one foreign language.
P01	Sufficient knowledge in mathematics, science and electrical and electronic engineering; ability to apply theoretical and applied knowledge in these fields to engineering problems.
P05	Ability to design and conduct experiments, collect data, analyze and interpret results for the study of engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; for this purpose, the ability to apply modern design methods
P11	Information about the effects of engineering practices on health, environment and safety in universal and social dimensions and the problems of the age; awareness of the legal consequences of er
P09	Awareness of the necessity of lifelong learning; the ability to access information, follow developments in science and technology, and constantly renew oneself.
P10	Information on project management and business practices such as risk management and change management; awareness of entrepreneurship, innovation and sustainable development.
P04	Ability to develop, select and use modern techniques and tools necessary for engineering practice; Ability to use information technologies effectively.

Assessment		
In-Term Studies	**Quantity**	**Percentage**
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		**% 100**

ECTS Allocated Based on Student Workload			
Activities	**Quantity**	**Duration**	**Total Work Load**
Course Duration	14	2	28
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	4	4
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	4	4
Total Work Load			**64**
ECTS Credit of the Course			**2**

Course Contribution To Program

Contribution: 1: Very Slight 2:Slight 3:Moderate 4:Significant 5:Very Significant

	P06	P11
All	2	3