



T.C. ESKİŞEHİR OSMANGAZI UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER | Fall

COURSE CODE | 151227647 - 151247647 | **COURSE NAME** | ENERGY TRANSMISSION LINES

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
7	3	0	0	3	5	COMPULSORY () ELECTIVE (√)	Turkish () English (x)
COURSE CATAGORY							
Basic Science		Basic Engineering		Electrical and Electronics Engineering Subjects [if it contains considerable design, mark with (√)]			Social Science
				3 ()			
ASSESSMENT CRITERIA							
MID-TERM				Evaluation Type	Quantity	%	
				Mid-Term	1	40	
				Quiz			
				Homework			
				Project			
				Report			
				Others (.....)			
FINAL EXAM					1	60	
PREREQUIEITE(S)				None			
COURSE DESCRIPTION				General aspect to the conductors used in power transmission lines, construction of these conductors, calculations about conductors at several climatic conditions, critical span, critical temperature, classification of the towers used in power transmission lines, determination of main dimensions of the towers and other calculations about towers are main topics of this course.			
COURSE OBJECTIVES				1.Fundamental knowledge about power transmission lines. 2.A knowledge about conductors and towers used in power transmission lines. 3.Calculation of conductors for symmetrical and unsymmetrical span. 4.To prepare the table of tensions and sags according to environmental temperature.			
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION				The importance of power transmission and the fundamentals of energy transmission lines are emphasized in this course.			
COURSE OUTCOMES				Students who pass the course will be able to; 1.Fundamental knowledge about power transmission lines 2.A knowledge about conductors and towers used in power transmission lines 3.To make calculation of conductors for symmetrical and unsymmetrical span 4.To prepare the table of tensions and sags according to environmental temperature 5.To make calculation about towers			
TEXTBOOK				1. Kiessling, F., Nefzger, P., Nolasco, J.F., Kaintzyk, U, "Overhead Power Lines, Planning, Design, Construction", Springer, 2003.			
OTHER REFERENCES				1. H. Hüsnü Dengiz, Enerji Hatları Mühendisliği, Kardeş Kitabevi, 1991.. 2. Luces M. Faulkenberry, Walter Coffe, Electrical Power Distribution and Tranmission, Prentice-Hall, 1996. 3. Muhittin Dilege, Yüksek Gerilim Hava Hatlarının Mekanik Hesabı, İTÜ, 1975			
TOOLS AND EQUIPMENTS REQUIRED							

COURSE SYLLABUS

WEEK	TOPICS
1	Introduction to the course.
2	Conductors used in power transmission lines, construction of these conductors.
3	Effects of several climatic conditions on conductors, national electric safety code.
4	Fluctations occurred at power transmission lines.
5	Calculation of conductors, chain equation, conductor length for symmetrical and unsymmetrical span.
6	Calculation of sag for symmetrical span and unsymmetrical span.
7	Economical and ruling spans, Equation for Changing Environmental Cases.
8	Mid-Term Examination
9	Mid-Term Examination
10	The length of conductor according to ice loading.
11	Sliding a tower vertically and horizontally.
12	Critical span and critical temperature.
13	Table of tensions and sags according to environmental temperature.
14	Classification of towers, Determination of main dimensions of the towers, Forces acting on the towers, Other calculations about towers
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: Dr. Burak Urazel

Date: 25.04.2018

Signature(s):