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

COURSE INFORMATION FORM

SEMESTER	Spring

COURSE CODE	151816332	**COURSE NAME**	Heat Transfer

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**	**Mechanical Engineering Subjects [if it contains considerable design, mark with (√)**	**Social Science**
		X	

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

PREREQUIEITE(S)	-
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	F. P. Incropera ve D. P. Dewitt, "Isı ve Kütle Geçişinin Temelleri," Türkçe Çevirisi, Literatür Yayıncılık.
OTHER REFERENCES	
TOOLS AND EQUIPMENTS REQUIRED	

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
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 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, 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 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: Prof. Dr. Haydar ARAS   **Date: 13/11/2017**

Signature(s):