



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

**COURSE INFORMATION FORM**

**SEMESTER**

**COURSE CODE** 151818429 **COURSE NAME** HEATING

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
8	3	0	0	3	5	COMPULSORY ( ) ELECTIVE (X)	Turkish

**COURSE CATAGORY**

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

**ASSESSMENT CRITERIA**

	Evaluation Type	Quantity	%
<b>MID-TERM</b>	Mid-Term	1	40
	Quiz		
	Homework		
	Project		
	Report		
	Others (.....)		
<b>FINAL EXAM</b>		1	60

**PREREQUIEITE(S)**

**COURSE DESCRIPTION**

Special heating circuits, straight and local pipe losses ,calculation of pipe diameter for heating circuits, calculation of pipe diameter for heating by hot water, house heating by solar energy, roof calculation, Calculation of heat losses and radiator at the house, heat pump systems supported by solar energy

**COURSE OBJECTIVES**

Aim of course, to gain ability for a student who takes that course in recognizing, understanding and designing of heating systems.

**ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION**

Ability to solve problems and understand practical systems with the help of several course subjects during the mechanical engineering education period.

**COURSE OUTCOMES**

1. Introducing of more detailed and various heating systems  
 2 learning how to prepare complete heating project by teaching pipe diameter calculation in the heating systems to Students who selected this lesson have learned general calculations of heat losses and some information about heating  
 3. After studying this lesson, students calculate heat losses and design central heating systems, architectural projects and piping plans. In the same time they complete central heating project and may learn newer different heating systems.

**TEXTBOOK**

Course Lecture

**OTHER REFERENCES**

1. Bases of Preparing Radiator Plumbing System Project ,Chamber of M.E.  
 2. ENGINEERING MANUAL of COMMERCIAL BUILDINGS heating ventilationing andA ir ConditioningbSI EditionCopyright 1989, 1995, and 1997 by Honeywell Inc.All rights reserved. This manual or portions thereof may not be reproduced in any form without permission of Honeywell Inc.Library of Congress Catalog Card Number: 97-77856  
 3. Vahab Hassani et al. "Fundamentals Handbook of Heating, Ventilation, and Air ConditioningEd. Jan F. Kreider Boca Raton, CRC Press LLC. 2001

**TOOLS AND EQUIPMENTS REQUIRED**

## COURSE SYLLABUS

WEEK	TOPICS
1	Special heating circuits
2	Special heating circuits
3	straight and local pipe losses
4	straight and local pipe losses
5	calculation of pipe diameter for heating circuits
6	calculation of pipe diameter for heating circuits
7	calculation of pipe diameter for heating by hot water
8	Mid-Term Examination
9	Mid-Term Examination
10	calculation of pipe diameter for heating by hot water
11	house heating by solar energy
12	roof calculation
13	Calculation of heat losses and radiator at the house
14	heat pump systems supported by solar energy
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 constraints 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:**

**Date:**

**Signature(s):**