



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

COURSE INFORMATION FORM

SEMESTER | Spring

COURSE CODE	151818466 151838466	COURSE NAME	Refrigeration
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
8	3	-	-	3	5	COMPULSORY () ELECTIVE (X)	Turkish

COURSE CATAGORY

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

ASSESSMENT CRITERIA

MID-TERM	Evaluation Type	Quantity	%
	1 st Mid-Term		1
Quiz			
Homework			
Project		1	30
Report			
Others (.....)			
FINAL EXAM		1	40

PREREQUIEITE(S)

COURSE DESCRIPTION Basic concepts, steam compression mechanical cooling, compressors, condensers, evaporators, expansion valves, refrigerants, cold air storage

COURSE OBJECTIVES The aim of the course is to familiarize the student with the various cooling systems and to acquire the ability to design a cold air store.

ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION To gain the skill of solving the problems and learning the systems they will encounter in practice by using the topics given in various lessons during the course of mechanical engineering education.

COURSE OUTCOMES
1. Learning the recognition, working principle and thermodynamic analysis of different cycles of vapor compression mechanical cooling systems in practice
2. Recognizing refrigerants, informing them about the effects on the environment
3. Recognizing the cold air storage, learning the principles of projecting

TEXTBOOK Uygulamalı Soğutma Tekniği, N. Özkol, TMMOB, Yayın No 115, 1997
Principles of Refrigeraton, Roy J. Dossat, Wiley, 1981

OTHER REFERENCES

TOOLS AND EQUIPMENTS REQUIRED

COURSE SYLLABUS	
WEEK	TOPICS
1	Basic concepts and refrigeration methods
2	Basic concepts and refrigeration methods
3	Vapor-compression refrigeration
4	Vapor-compression refrigeration
5	Compressors, condensers
6	The evaporators, the expansion valves
7	Absorption refrigeration
8	Mid-Term Examination 1
9	
10	Refrigerant properties
11	Cold air storage
12	Cold air storage
13	Calculation of pipe diameters for cold air storage
14	Calculation of pipe diameters for cold air storage
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: Ass. Prof. Özge Altun

Date: 13.11.2017

Signature(s):