

School of Engineering and Natural Sciences / Industrial Engineering (English)

2022 - 2023 Academic Year

FACILITY DESIGN and PLANNING

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
FACILITY DESIGN and PLANNING	IND3249130	Spring Semester	3+0	3	6
Prerequisites Courses	AĞ AKIŞLARI VE TAMSAYILI PROGRAMLAMA; ÜRETİM PLANLAMA VE KONTROL				
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assoc.Prof. Melis Almula KARADAYI				
Name of Lecturer(s)	Assoc.Prof. Melis Almula KARADAYI				
Assistant(s)					
Aim	The purpose of this course is to make an introduction to planning and design of manufacturing facilities from an industrial engineering point of view.				
Course Content	This course contains; Introduction to Facilities Planning,Product, Process and Schedule Design,Plant Layout: Types of Layouts,Flow Patterns,Quantitative Flow Analysis, Block Layout,Systematic Layout Planning,Machine Sequencing,MIDTERM,Space Requirements,Assembly Line Balancing,Plant Location,Location Analysis, Location Allocation Models,Storage and Warehousing,Presentations.				
Course Learning Outcomes		Teaching Methods	Assessment Methods		
Having a background for modeling skills related to design problems in manufacturing and service systems		1, 15, 2	A, C, E		
Knowing the basic concepts of designing a new plant		1, 15, 2	A, C, E		
Gaining knowledge about assembly systems and assembly line balancing		1, 15, 2	A, C, E		
Identifying equipment and machine requirements for different layouts		1, 15, 2	A, C, E		
Gaining knowledge about facility location models and being able to apply these models		1, 15, 2	A, C, E		
Teaching Methods	1: Lecture, 15: Problem solving, 2: Question - Answer				
Assessment Methods	A: Written Exam, C: Homework, E: Quiz				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Introduction to Facilities Planning				
2	Product, Process and Schedule Design				
3	Plant Layout: Types of Layouts				
4	Flow Patterns				
5	Quantitative Flow Analysis, Block Layout				
6	Systematic Layout Planning				
7	Machine Sequencing				
8	MIDTERM				
9	Space Requirements				
10	Assembly Line Balancing				
11	Plant Location				
12	Location Analysis, Location Allocation Models				
13	Storage and Warehousing				
14	Presentations				
Evaluation Methods		Weight(%)			
Midterm Exam		30			
General Exam		70			

Resources
J. A. Tompkins, J. A. White, Y.A. Bozer, and J. M. A. Tanchoco, "Facilities Planning", 4th ed., John Wiley & Sons, Inc., (2010). ISBN 978-0470444047."H. Heargu," Facilities Design", 5th Edition, CRC Press, (2022). ISBN 9781032258058