

School of Fine Arts Design and Architecture / Industrial Design

2023 - 2024 Academic Year

MANUFACTURING METHODS in DESIGN I

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
MANUFACTURING METHODS in DESIGN I	EUT3158720	Fall Semester	2+0	2	3
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Elective				
Course Coordinator	Assist.Prof. Seher Oya AKMAN				
Name of Lecturer(s)	Prof.Dr. İsmail Suha ERDA				
Assistant(s)					
Aim	This course aims industrial design students to learn fundamental principles of modern manufacturing methods and technologies.				
Course Content	This course contains; Introduction to manufacturing, Properties of engineering materials, Dimensions, tolerances and surfaces, Metals, ceramics, polymers and composites, Fundamentals of metal casting, Shaping processes of plastics, Shaping of composites, Processing of ceramics and cermets, Powder Metallurgy, Bulk deformation and sheet metalworking, Theory of metal machining, machining operations and machining tools, The importance of design in metal machining, Grinding and other abrasive processes, Heat treatment of metal and surface processing operations.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1. Learn the application fields of various manufacturing methods.			10, 12, 19, 37, 9	A	
2. Develop capability to relate products with manufacturing techniques.			19, 37, 9	A	
3. Learn the relationship between cost, quality and efficiency.			37, 9	A	
Teaching Methods	10: Discussion Method, 12: Problem Solving Method, 19: Brainstorming Technique, 37: Computer-Internet Supported Instruction, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Introduction to manufacturing.				
2	Properties of engineering materials.				
3	Dimensions, tolerances and surfaces.				
4	Metals, ceramics, polymers and composites.				
5	Fundamentals of metal casting.				
6	Shaping processes of plastics.				
7	Shaping of composites.				
8	Processing of ceramics and cermets.				
9	Powder Metallurgy.				
10	Bulk deformation and sheet metalworking .				
11	Theory of metal machining, machining operations and machining tools.				
12	The importance of design in metal machining.				
13	Grinding and other abrasive processes .				
14	Heat treatment of metal and surface processing operations.				
Evaluation Methods		Weight(%)			
(Midterm Exam)					
Midterm Exam		50			
(General Exam)					
General Exam		50			
Resources					
To be distributed by the lecturer 1. Mikell P. Groover, (2016) - Modern İmalatın Prensipleri. Nobel Yayıncılık 2. Mikell P. Groover (2011)- Principles of Modern Manufacturing,-J. Wiley					