



COURSE INFORMATION FORM

Course Name	Course Code
Human Factors in Industrial Design I	141113005

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
3	2	0	2	3

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
1		2		

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	None
Objectives of the Course	This course aims to teach students the physical human characteristics and constraints required to design safe products.
Short Course Content	This course is designed to teach the basic principles of Human Factors in industrial design. The course content covers information on humans' physical characteristics and constraints defined within Anthropometry and Biomechanical sciences.

Learning Outcomes of the Course		Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Determine the Anthropometric and Biomechanical data needed to design a safe product.	2,3,4	1,2,6	A,D
2	Apply the Anthropometric and Biomechanical data needed to design a safe product.	2,3,8	1,2,6	A,D
3	Determine whether any product is safe in an Anthropometric and Biomechanical context.	4,8	1,2,6	A,D
4				
5				
6				
7				
8				

***Teaching Methods** 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

****Measuring Methods** A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	<ul style="list-style-type: none"> • Pheasant, S. (1996), Bodyspace-Anthropometry, Ergonomics and the Design of Work, Taylor & Francis Inc, USA, UK. • Panero, J., & Zelnik, M. (1979). Human Dimensions and Interior Space: A Source Book of Design Reference Standarts. London: The Architectural Press Ltd. • Tilley, A. R. (2001). The measure of man and woman: human factors in design. John Wiley & Sons.
Supporting References	<ul style="list-style-type: none"> • Stanton, N. A. (1997), Human Factors in Consumer Products. Taylor & Francis Inc, USA, UK. • Karwowski, W.; Soares, M. M.; Stanton, N. A. (2011) Human Factors and Ergonomics in Consumer Product Design: Uses and Applications. Taylor & Francis Inc, USA, UK. • Leger, D. L; Nordin, M.; Ozkaya, N. (2013), Fundamentals of Biomechanics: Equilibrium, Motion, and Deformation. Springer • Salvendy G. (2012), Handbook of Human Factors and Ergonomics. John Wiley & Sons, Incorporated
Necessary Course Material	N/A

Course Schedule	
1	Introduction to Ergonomics
2	Introduction to Anthropometry
3	Principles of Anthropometric Data Collection – Data Sources and Measurement Tools
4	Principles of Anthropometric Data Collection – Standard Postures and Basic Dimensions
5	Anthropometric Data Application Principles – Constraints and Criteria
6	Anthropometric Data Application Principles - Percentages
7	Anthropometric Data Application: Calculating Anthropometrically Appropriate Table and Chair Dimensions
8	Mid-Term Exam
9	Introduction to Biomechanics
10	Biomechanical Motions – Reference Planes and Types of Motion
11	Biomechanical Movements - Head and Eye Anthropometry and Kinetics
12	Biomechanical Movements – Upper Extremity Anthropometry and Kinetics
13	Biomechanical Movements – Lower Extremity Anthropometry and Kinetics
14	Safe Product Design in Anthropometric and Biomechanical Context
15	Product Safety Analysis Methods in Anthropometric and Biomechanical Context
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	2	28
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework	12	4	48
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Participation (Preparation)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam			

Final Exam	1	2	2
Studying for Final Exam			
	Total workload		80
	Total workload / 30		2,66
	Course ECTS Credit		3

Evaluation	
Activity Type	%
Mid-term	40
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	Within cultural, historical and artistic contexts the ability to integrate theoretical knowledge about production and consumption mechanisms into the design practice	
2	The ability to plan the design process, to choose and use appropriate methods and techniques	5
3	The ability to identify design problems and related sub-problems and to produce creative solutions with a critical and dialectical approach	3
4	The ability to design in terms of spatial thinking using design principles and elements	3
5	The ability to make applications in the interaction of aesthetics and function using design elements and means and to evaluate these applications	
6	The ability to visualize and present using two and three dimensional design tools	
7	The ability to follow and apply technological developments, current design approaches, sustainable production methods, materials and innovations in the field of informatics in design projects	
8	The ability to use field knowledge in industrial design projects by considering the needs and interests of the society and target users within the scope of environmental awareness, professional ethics and the laws	5
9	The ability to carry out the design process effectively individually or in a team	
10	The ability to take an active role in discipline-specific or interdisciplinary studies at the national and international levels;	

LECTUTER(S)			
Prepared by	Assoc. Prof. Dr. Nazife Aslı KAYA ÜÇÖK		

Signature(s)				
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Date:08.08.2024