COURSE SYLLABUS						
Course Title	**Course Code**	**Semester**	**Course Hour/Week**		**Credit**	**ECTS**
Industrial Design Project 2	INDD292	2	**Theory** 2	**Practice** 8	6	8
Course Type	**Compulsory Courses**	**Department Elective**	**Faculty Elective**	**University Elective**	**CoHE (YÖK) Compulsory**	**Other**
	x					
Level of Course	**Associate Degree (Short Cycle)**		**Undergraduate (First Cycle)**		**Graduate / Doctoral (Second / Third Cycle)**	
			x			

Language of Instruction	English

Course Instructor(s)	Instr. Mojtaba Karimnezhad	E-mail: mojtaba.nezhad@arucad.edu.tr Office:
Course Objectives	Design Studio 4 is a comprehensive and immersive unit that aims to reinforce the foundational knowledge and skills necessary for a deeper understanding of the dynamics characterising the Industrial design field. The unit places a strong emphasis on UX and ergonomics. In parallel with Human Factors and Ergonomics course, students will deeply focus on UX contents. Projects must reflect the correct Ergonomics both in terms of physical and cognitive aspects. Students will learn to critically reflect on their own design solutions, as well as those of their peers, in order to promote constructive and clear communication. Group work will be encouraged when appropriate. The project work will be presented in digital and printed format. A final digital presentation should show the project's evolution including the research and ideation phase. Sketches, technical drawings and prototypes are presented in the appropriate scale, with the proper detail level, and presented in the appropriate format.	

	Students To Do:	**Teaching Methods**	**Evaluation Methods**
Course Learning Outcomes	Examine the role of design in shaping social, cultural, political, and environmental systems.	Lectures, case studies, design discussions, studio critiques.	Research documentation, project concept development, presentations.
	Use iterative design processes to address specific and open-ended design problems.	Studio-based learning, project-based assignments, iterative design reviews.	Project development stages, midterm critiques, final project evaluation.
	Creatively respond to present and future challenges through design thinking and making processes.	Design thinking workshops, brainstorming sessions, studio experimentation.	Concept development assessment, design proposals, final presentation.
	Integrate transdisciplinary modes of enquiry into the design process.	Lectures, interdisciplinary discussions, research activities.	Research reports, project documentation.
	Conduct UX (User Experience) analysis including user research and user profiling.	UX workshops, user analysis exercises, guided research.	UX research documentation, user persona development, project evaluation.
	Produce preliminary conceptual sketches as well as detailed explanatory drawings.	Sketching workshops, studio practice, instructor feedback.	Sketchbooks, concept sketches, design development submissions.
	Develop technical drawings with constructive details using CAD tools.	CAD demonstrations, technical drawing exercises, studio supervision.	CAD files, technical drawing submissions.
	Produce low- and high-fidelity prototypes (physical and digital).	Prototype workshops, model making. sessions, digital modeling exercises.	Prototype evaluation, model presentation.

	Critically reflect on their own work and peers' work to improve design outcomes.	Peer critiques, group discussions, studio reviews.	Participation in critiques, reflective feedback.
	Present design processes and outcomes through professional digital and printed formats.	Presentation workshops, studio guidance.	Final digital presentation, printed boards, project portfolio.
Course Content	**UX and Ergonomics.** The unit's projects are designed to stimulate personal and collective curiosity, fostering an environment that values connection, exploration, and inquiry. Through hands-on experiences and structured activities, students will have the opportunity to develop their making and design-thinking capabilities. Students will focus more on UX content with a preliminary user analysis and research, followed by the definition of the users' portraits. The problem İdentification will be more articulate considering multiple aspects: from usability to users' needs.		

COURSE OUTLINE/SCHEDULE			
Week	**Topic**	**Implementation (theory/practice)**	**Required Reading, Preliminary preparation**
1	Introduction to UX, ergonomics and inclusive design.	T-P	Review course brief.
2	**Inclusive Design Object:** Project Description: This project introduces students to inclusive and human-centered design principles. Students will design a product that supports users with specific physical limitations. The objective is to improve usability, accessibility, and comfort through thoughtful UX analysis and ergonomic consideration.	T-P	Research documentation.

	The design process must be based on user research, observation, and iterative design development. Students will identify a clear user problem and propose a product that enhances interaction and usability.		
3	User research methods and observation User personas and UX journey mapping.	P	Research documentation.
4	Ideation and sketch exploration.	P	Sketch development.
5	Concept development and ergonomic analysis.	P	Concept sketches.
6	Prototype development and refinement	P	Low-fidelity prototype.
7	Project critique (Inclusive Design Object) and Midterm.	Critique session.	Prepare midterm presentation.
8	Introduction to Urban Micro-Living design: Project Description: This project focuses on designing products for compact urban living environments. Students will design a product that	T-P	Research small living environments.

	improves everyday living in small apartments or limited living spaces. The design should address usability, multifunctionality, space efficiency, and ergonomic interaction.		
9	User needs and space efficiency analysis.	P	User research.
10	Concept generation and design exploration.	P	Sketch concepts.
11	CAD modeling and design development.	P	Prepare CAD models.
12	Technical drawings and prototyping.	P	Prototype development.
13	Technical drawings and prototyping.	P	Prototype development.
14	Technical drawings and prototyping.	P	Prototype development.
15	Prototype testing and refinement.	P	Prepare final boards.
16	Project presentation and critique.	Presentation	Final documentation.
17	**FINAL EXAM**		

Required Course Material(s) / Reading(s)/ Text Book(s)	• Calabretta, G., Gemser, G., & Karpen, I. O. (2016). *Strategic design: Eight essential practices every strategic designer must master*. BIS Publishers. Call number: TS171.4 .C35 2016 • Cato, K. (2016). *Thinking trademarks, symbols and logotypes*. Call number: NC1003.C38 2016 • Lawson, S. (2013). *Furniture design: An introduction to development, materials and manufacturing*. Laurence King Publishing. Call number: NK2260.L38 2013 • Lockard, M. S. (2016). *The nature of design*. ORO Editions. Call number: N2750 .L63 2016,

	• Milton, A. (2013). *Research methods for product design*. Call number: TS171.4 .M78 2013 Morgan, L. Z. (2011). *The design behind desire*. Farah. Call number: TT507 .M67 2011
Recommended Course Material(s)/ Reading(s) /Other	• Ashby, M. F., & Johnson, K. (2014). *Materials and design: The art and science of material selection in product design (3rd ed.).* Butterworth-Heinemann. ISBN: 978-0081002759 • Ching, F. D. K. (2015). *Design drawing (2nd ed.).* Wiley. ISBN: 978-1118803899 • Fiell, C., & Fiell, P. (2000). *Industrial design A–Z.* TASCHEN. ISBN: 978-3822863107 • Karana, E., Pedgley, O., & Rognoli, V. (Eds.). (2014). *Materials experience: Fundamentals of materials and design*. Butterworth-Heinemann. ISBN: 978-0080993591. https://doi.org/10.1016/C2012-0-02198-9 • Lefteri, C. (2012). *Making it: Manufacturing techniques for product design (2nd ed.)*. Laurence King Publishing. ISBN: 978-1856697491 • Pulos, A. (1988). *The American design ethic: A history of industrial design.* MIT Press. ISBN: 978-0262660604 • Pye, D. (1968). *The nature and art of workmanship*. Herbert Press. ISBN: 978-0713689310

ASSESSMENT		
Learning Activities	**NUMBER**	**WEIGHT in %**
Mid-Term	1	40
Quiz		
Assignment		
Project		
Field Study		
Presentation / Seminar		

Studio Practice		
Other		
Contribution of Final Examination/Final Project/ Dissertation to the Final Grade	1	60
TOTAL	2	100

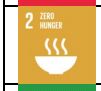
CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME LEARNING OUTCOMES

No	**PROGRAMME LEARNING OUTCOMES**	Level of Contribution (1-lowest/ 5-highest)				
		1	2	3	4	5
1	Understand knowledge of industrial design principles, design methodologies, history, aesthetics, form & function and product development processes.					x
2	Explain the properties of materials, manufacturing technologies, and production methods used in industrial product design.			x		
3	Understand ergonomics, and user-centered design concepts in product development.					x
4	Understand sustainability principles, environmental impacts, and life-cycle considerations in industrial design.			x		
5	Analyze design problems, user needs, and market requirements to develop appropriate product design solutions.					x
6	Generate creative product concepts using sketching, ideation techniques, and visual exploration methods.					x
7	Develop product designs using digital tools, 3D modeling, and rendering software.				x	
8	Develop prototypes or models to evaluate product functionality, usability, and aesthetics.					x
9	Communicate design ideas effectively through sketches, technical drawings, models, and professional presentations.					x

10	Work effectively in multidisciplinary teams during product design and development processes.				x	
11	Manage design projects considering production constraints, market needs, and economic feasibility.				x	
12	Demonstrate professional responsibility, ethical awareness, and commitment to sustainable design practices.			x		

ECTS / STUDENT WORKLOAD				
ACTIVITIES	**NUMBER**	**UNIT**	**HOUR**	**TOTAL (WORKLOAD)**
Course Teaching Hour (X weeks * total course hours)	16	1	8	128
Preliminary Preparation and self- study	5	1	8	40
Mid-Term	1	1	10	10
Quiz				
Assignment				
Project				
Field Study				
Presentation / Seminar				
Studio Practice				
Final Examination/ Final Project/ Dissertation	1	1	30	30
Other				
TOTAL WORKLOAD				208
TOTAL WORKLOAD / 25				8.32
ECTS				8

ETHICAL RULES WITH REGARD TO THE COURSE
Plagiarism Disclaimer Detected and undetected plagiarism is a serious offence at any time and it could have devastating effects on your degree result and future professional life. Plagiarism is easy to avoid if you make sure to identify and acknowledge your sources thoroughly and do not copy directly from visual examples, designs, or notes that have in turn been taken word for word from your sources.

	SDG 1: No Poverty
	SDG 2: Zero Hunger
	SDG 3: Good Health and Well-Being
	SDG 4: Quality Education
	SDG 5: Gender Equality
	SDG 6: Clean Water and Sanitation
	SDG 7: Affordable and Clean Energy
	SDG 8: Decent Work and Economic Growth
	SDG 9: Industry, Innovation and Infrastructure
	SDG 10: Reduced Inequalities
	SDG 11: Sustainable Cities and Communities
	SDG 12: Responsible Consumption and Production
	SDG 13: Climate Action
	SDG 14: Life Below Water
	SDG 15: Life on Land

	x
	x
	x
	x
	x
	x
	x
	x

	SDG 16: Peace, Justice and Strong Institutions	
	SDG 17: Partnership for the Goals	x

ASSESSMENT DETAILS AND EVALUATION CRITERIA:	
Final grades will be determined based on the course learning activities and the assessment details for the final examination or project, as outlined below, in accordance with the University's Education and Examination Regulations. Students are required to attend at least 70% of the classes. The maximum allowable absenteeism is 30%. Midterm: 40% Final: 60%	
PREPARED BY	Instr. Mojtaba Karimnezhad.
UPDATED	March 2026.
APPROVED	