



COURSE INFORMATION FORM

Course Name	Course Code
Computer Aided Design I	141113003

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
3	2	1	3	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	3	2		

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	-
Objectives of the Course	The aim of this course is to provide students with the ability to use computers in the design phase and to support the drawing skills in design tools in the computer environment. With the acquisition of 2 and 3 dimensional design skills, it is aimed to increase the power of 3 dimensional thinking.
Short Course Content	By designing the products in the industrial design process in electronic environment, it is aimed to transfer the form, texture, colour and product-environment relationship, which are the components of the product, in digital environment. The working process, which started in 2 dimensions, is moved to the 3rd dimension, for this purpose, one or two of the AutoCAD, 3D Max, Solidworks, Alias, Fusion, Rhinoceros, Keyshot programs are selected and applications are made according to the strengths of the programs.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Explains general information about drawing programs on computer.	3, 4, 5, 6, 10	1, 5, 6, 11	A, D
2 Can edit files in Rhinoceros program.	3, 4, 5, 6, 10	1, 5, 6, 11, 14	A, D
3 Explains the Rhinoceros program's necessary representation tools for project presentation in industrial design.	3, 4, 5, 6, 10	1, 5, 6, 11, 14	A, D
4 Explains the representation tools of Rhinoceros program for two-dimensional (2D) and three-dimensional (3D) drawing.	3, 4, 5, 6, 10	1, 5, 6, 11, 14	A, D
5 Explains representation tools for visualization of CAD programs.	3, 4, 5, 6, 10	1, 5, 6, 11, 14	A, D
6 Explains commands for product drawing in CAD programs.	3, 4, 5, 6, 10	1, 5, 6, 11, 14	A, D
7 Explains the relationship between programs and file transfer in CAD programs.	3, 4, 5, 6, 10	1, 5, 6, 11, 14	A, D
8 Can make basic rendering settings in the Keyshot program.	3, 4, 5, 6, 10	1, 5, 6, 11, 14	A, D

*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	- Rhinoceros manual for V.7.
Supporting References	- https://www.rhino3d.com/7/new/ - https://www.keyshot.com/keyshot-studio/ - 3DS Max manual for 2022
Necessary Course Material	- Desktop or laptop computer, Rhinoceros and Keyshot modeling softwares

Course Schedule	
1	Meeting the students, the installation, introduction and usage areas of the Rhinoceros program.
2	Introducing the interface of the Rhinoceros program, explaining the main titles and menus in the program Editing program settings (Options), transferring mouse and keyboard interaction with the program
3	The concept of materials and the application of materials to products in Vray program
4	Interface/Curve/Line/Polyline/Accurate Coordinates/Precision Modeling/Object Snaps
5	Circle/Arc/Polygons/Filet/Blend/Copy/Rotate/Mirror/Join/Gumball Tutorial/Trim/Split/Offset/Scale
6	Background Bitmap, Contour, Make a Hole, Picture, Shell, Naked edges, Project to Cplane, Edit curve/surface
7	Surface/Polysurface/Sweep1/Sweep2/Loft/Network of Curves/Patch/Surface 3-4 points
8	Mid-Term Exam
9	Surface/Polysurface/Pull to surface/Text-Surface
10	Drafting/Dimension/Annotation/ Scaling /3 view /Plot (Vectorial output,.AI)
11	Repetitions/Question and Answers (Point, Curve, Surface, etc.)
12	Sample product modeling and Keyshot rendering via Tutorial
13	Sample product modeling and Keyshot rendering via Tutorial
14	Sample product modeling and Keyshot rendering via Tutorial
15	Sample product modeling and Keyshot rendering via Tutorial
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)			
Homework	6	6	36
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)			
Mid-Term Exam	1	3	3
Studying for Mid-Term Exam	7	4	28
Final Exam	1	3	3
Studying for Final Exam	7	4	28
Total workload			140
Total workload / 30			4,66
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	30
Homework	30
Final Exam	40
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 context the ability to integrate theoretical knowledge about production and consumption mechanisms into the design practice;	1
2	The ability to plan the design process, to choose and use appropriate methods and techniques;	1
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;	5
5	The ability to make applications in the interaction of aesthetics and function using design elements and means and to evaluate these applications;	5
6	The ability to visualize and present using two and three dimensional design tools;	5
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;	1
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;	1
9	The ability to carry out the design process effectively individually or in a team;	1
10	The ability to take an active role in discipline-specific or interdisciplinary studies at the national and international levels.	3

LECTUTER(S)				
Prepared by	Assoc. Prof. Dr. Cemil YAVUZ			
Signature(s)				

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