

COURSE INFORMATION FORM	
Faculty/ Institute	Faculty of Fine Arts and Architecture
Department	Department of Industrial Design
Course Code	EUT 405
Course Title	Computer Aided Production
Language	Turkish
Program	Industrial Design Undergraduate Program
Course Type	Must
Course Level	
Course ECTS	3
Prerequisites	None
Course Catalogue Description	The course covers topics that will constitute a basis for modeling applications for computer aided design and production, which are essential for industrial design discipline. The basic concept of the course is to express, analyze and prepare the design ideas that are developed in a three dimensional computer environment. The course covers the basic functioning and contribution of 3D solid modeling programs to physical production .
Course Objectives	The aim of the course is to create advanced knowledge about computer aided design and production tools, to model design idea in 3D design environments and to prepare digitally designed models of products designed for production with computer controlled machines.
Course Learning Outcomes	At the end of the course it is expected that students will be knowledgeable about the general definitions of computer aided design and production, have the ability to prepare for design and production in Solidworks and Rhinoceros programs, and have the ability to transfer their designs from surface to solid models.
Resources and References	http://www.rhino3d.com/training.htm Cheng, R.K.C (2002) Inside Rhinoceros, OnWord Press: Albany NY Lombard, M. (2009) SolidWorks 2009 Bible: Wiley http://www.solidworks.com/sw/support/training-learning-resources-materials.htm http://www.grasshopper3d.com/
Course Grading	Grade Points
Attendance	10
Laboratory	
Applications	
Field Study	
Tasks	30
Presentations	
Projects	
Seminars	
Midterms	20
Quiz	
Final	40
Total	100
Weekly Outline	Topics
	Introduction to Computer Aided Production and basic concepts The definition of the course, students 'expectations, and students' knowledge of the course.
1	Converting digitally designed models into real life objects and explaining application areas in the design process. Describing the transition between modeling software, production software and CNC machine language
2	Parametric Modeling (Grasshopper) Production of parametric shapes using Rhino-Grasshopper plugin
3	Parametric Modeling (Grasshopper) Production of parametric shapes using Rhino-Grasshopper plugin

	<p>2D Production (Cutting, Joining, Bending) Converting 2D drawings prepared in digital environment into the language of computer controlled machines, drawing and designing of parts for cutting, joining and bending processes. Part preparation for 2D sample production (Box design).</p>
4	<p>2D Production (Cutting, Joining, Bending) Evaluation and analysis of 2D parts and preparation for production, decision of material properties and production planning.</p>
5	<p>2.5 Dimensional Production (Milling, Relief) Milling operation and simulation of 3-4-5 axis CNC machines, machine head and path identification. Examination of RhinoCAM and EZ-CAM software. Part preparation for 2.5-dimensional sample production (Frame)</p>
6	<p>Midterm project 3D design and production</p>
7	<p>Solidworks solid modeling and analysis Analysis for production of part using Solidworks.</p>
8	<p>Machined Manufacturing Computer-based preparation of parts for machining and simulation of production</p>
9	<p>Rapid prototyping using Solidworks and Rhino Model export for rapid prototype from Solidworks and Rhino</p>
10	<p>Rapid Prototyping application</p>
11	<p>Term project Students are required to analyze solid models of a product that they designed and produce it.</p>
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