UNIVERSITI TEKNOLOGI MARA

IDE416: REPRESENTATION TECHNIQUES

Course Name (English)	REPRESENTATION TECHNIQUES APPROVED
Course Code	IDE416

MQF Credit	3

Course Description	This course is an introduction to sketching and rendering techniques for presentation of conceptual product. The aim of the course is to make the student well prepared to use basic and advanced drawing and rendering techniques for design work in the design process. The student shall demonstrate an understanding of basic perspective theory and demonstrate an understanding of basic rendering. The lecture topics will be carried weekly which include an assignment to determine student understanding on rendering techniques. In addition to lectures, class time will be spent working on exploring new techniques and learn a different toolset and apply it to the given assignments.

Transferable Skills	The student will able to use the sketching and rendering tools perfectly and can define the quality of rendering by using the sketching and rendering technique that had been teach and demonstrated by the lecturer.

Teaching Methodologies	Lectures, Demonstrations, Practical Classes, Presentation

CLO		
	CLO1	Demonstrate the understanding of the value of sketching and rendering techniques as visualization method and tool in a product development process.
	CLO2	Explore wide range of representation methods through the experimentation of techniques, tools and surfaces
	CLO3	Carry out appealing design presentations of advanced drawing techniques for design work in the design process

Pre-Requisite Courses	No course recommendations

Topics
1. INTRODUCTION TO BASIC TYPES OF PERSPECTIVE 1.1) INTRODUCTION TO RENDERING TECHNIQUES 1.2) INTRODUCTION TO SKCETHING TECHNIQUES 1.3) Introduction to syllabus 1.4) Project briefing 1.5) basic types of perspective (1, 2 & 3 point perspective)
2. HATCHING TECHNIQUES AND COMPOSITION 2.1) Object Shadows 2.2) Shading 2.3) Projection 2.4) Basic geometry 2.5) Ellipses and Circles 2.6) Cylinders
3. PROPORTIONS/ LAYOUT, VIEWS, HEADINGS AND EXPLANATORY TEXTS 3.1) basic proportion 3.2) basic layout 3.3) conceptual layout 3.4) angle of perspective view (Eye Level View, Bird's Eye View & Worm's Eye View)

4. CONCEPT SKETCH AS A TOOL IN THE DESIGN PROCESS
4.1) Visualization of design proposals using different analogue techniques.
4.2) Types of sketches in product design :
4.3) Thumbnail Sketches
4.4) Rough Sketches
4.5) Presentation Sketches
4.6) Persuasive Sketches

5. RENDERING TECHNIQUES FOR BASIC SHAPE
5.1) composition
5.2) rendering technique for basic shape
5.3) grey marker on white paper.

6. INTRODUCTION TO MARKER AND PASTEL TECHNIQUE
6.1) Demonstrating rendering technique for color effects using color marker pen and pastel on white paper.
6.2) Matt surface
6.3) Gloss plastic surface
6.4) Chrome surface

7. EXPLODED VIEW DRAWING
7.1) how to draw exploded view
7.2) mix media techniques
7.3) elevation drawing
7.4) basic projection

8. VISUALIZATION OF DESIGN PROPOSALS
8.1) Visualization of design proposals using different techniques.
8.2) Final design presentation

9. LAYOUT AND GRAPHICAL FORM, ASSEMBLY
9.1) Views, headings
9.2) explanatory texts using reference arrows
9.3) Layout and graphical form, assembly.

10. PROJECT PRESENTATION
10.1) Discussion, consultation & demonstration on layout presentation
10.2) Presentation rendering for furniture & automotive rendering

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Basic knowledge of One-, two- and three-point perspective & Basic understanding of Geometric and organic shapes in perspective	10%	CLO1
	Assignment	Able to apply multiple techniques in concept sketch & Able to produce presentable concept sketch	10%	CLO2
	Assignment	Basic knowledge of Surfaces, volumes, lighting, shine, reflection and shadow & Basic understanding of marker and pastel techniques	10%	CLO1
	Assignment	Able to apply multiple techniques in conceptual rendering & Able to produce presentable conceptual rendering	10%	CLO2
	Assignment	Visualization of design proposals using different techniques	10%	CLO1
	Assignment	Description of function, Views, headings and explanatory texts & Able to apply multiple layout and graphical form	10%	CLO2
	Final Project	Knowledge & understanding : able to procude sketching & able to procude rendering	10%	CLO1
	Final Project	representation skills in conceptual drawing : multiple methods use; Surfaces, volumes, lighting, & shine, reflection and shadow.	15%	CLO2
	Final Project	well prepared to use advanced drawing techniques : Quality of sketches ; quality of rendering & Overall presentations	15%	CLO3

Reading List	Recommended Text	Henry, K. 2012, *Drawing for product designers.*, London: Laurence King.
		Hlavács, G. 2014, *The Exceptionally Simple Theory of Sketching: Easy to Follow Tips and Tricks to Make your Sketches Look Beautiful*, BIS Publishers.
		Robertson, S., & Bertling, T. 2013, *). How to draw: drawing and sketching objects and environments from your imagination*, Culver City: Design Studio Press.
		Baskinger, M., & Bardel, W. 2013, *Drawing Ideas: A Hand-drawn Approach for Better Design.*, Watson-Guptill.
		Reynolds, G. 2013, *Presentation zen design: Simple design principles and techniques to enhance your presentations.*, New Riders.
	Reference Book Resources	Eissen, K., & Steur, R. 2007, *Sketching: drawing techniques for product designers*
		Robertson, S., & Bertling, T. 2014, *How to Render: the fundamentals of light, shadow and reflectivity.*, Design Studio Press.
		Liu, C., & Chang, A. C. Y. 2007, *Innovative product design practice.*, Cypi Press.
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	