

COURSE CONTENT

Course Code	DR2001
Course Title	Product Design I
Pre-requisites	-
No of AUs	3
Contact Hours	39 contact hours

Course Aims

This introductory level course will provide you with the fundamental skills and process for designing products. You will be introduced to product design-centric visualization and form making skills and the design process, you will gain foundational creative and technical competency with sketching, design research, concept generation, design development, materials, and model making. This learning forms the foundation for progressing to intermediate studies in product design.

Intended Learning Outcomes (ILO)

By the end of this course, you (as a student) would be able to:

1. Identify and discuss the various stages of the design process in the creation of products.
2. Demonstrate ability and technique in design research, concept generation, design development, materials selection, sketching and model making.
3. Apply the design process from research to model making in the design of a product.
4. Present your design project in a clear and cohesive manner through visual presentations and physical mock-ups
5. Critique ideas and techniques employed by peers in their designs in a constructive manner.

Course Content

Visualization and Form Making

Introduction to product design centric visualization and form making skills; concept and presentation rendering using various mixed media and/or digital tools, and making of presentation model using various materials and finishing techniques.

Design Project

Part 1: Introduction to product design process (brief, project identification, research and data collection, ideation, concept selection, design development and finalization and presentation).

Part 2: Through simple studio project/s, you are encouraged to explore issues relating to function, cognition and aesthetics, you will progressively move from ideas to viable solutions that may be evaluated through discussions and presentation, to a viable final design that is then presented through visual presentation and physical mock-up.

Assessment (includes both continuous and summative assessment)

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team Individual
Visualization and form making -Rendering	2,4	Competence, Creativity, Communication, and Character	30	Individual

-Static model				
Design project -Brief and design research - Concepts generation - Design development - Final presentation	1,2,3,4	Competence, Creativity, Communication, and Character	50	Individual
Continuous Assessment Participation	5	Competence, Creativity, Communication, and Character	20	Individual Team
Total			100%	

Reading and References

Recommended

1. Aspelund, Karl. *The Design Process*. Bloomsbury Publishing, 2014.
2. Cuffaro, Dan, and Isaac Zaksenberg. *The Industrial Design Reference & Specification Book: Everything Industrial Designers Need to Know Every Day*. Rockport Publishers, 2013.
3. Hallgrimsson, Bjarki. *Prototyping and Model making for Product Design*. Laurence King Publishing Ltd.2012.
4. Henry, Kevin. *Drawing for product designers*. London: Laurence King, 2012.
5. Powell, Dick. *Presentation techniques: a guide to drawing and presenting design ideas*. Macdonald, 1985.

Course Policies and Student Responsibilities

(1) General

You are expected to complete all assigned readings, activities, assignments, attend all classes punctually and complete all scheduled assignments by due dates. You are expected to take responsibility to follow up with assignments and course related announcements. You are expected to participate in all project critiques, class discussions and activities.

(2) Punctuality

You are expected to be punctual for all classes. If you are more than 30 minutes late, you will be deemed as absent and will not be able to sign in to the attendance register.

(3) Absenteeism

In-class activities make up a significant portion of your course grade. Absence from class without a valid reason will affect your participation grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, and collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Planned Weekly Schedule*

*Subject to adjustment by instructor according to the teaching situation, students' progress, public holidays and unforeseeable circumstances. A revised schedule will be issued to students at the start of the semester.

Week	Topic	Course LO	Readings/ Activities
1	<ul style="list-style-type: none"> Introduction to the course Introduction to the two parts of the course, form and visualization and design project. Form and Visualization Introduction to concept and presentation rendering techniques. Examples from text book and real life examples of application. Introduction to class exercise on visual exercise 	1,2,4,5	<p>Introductory Lecture In-class review on past works.</p> <p>Class Exercise Concept presentation rendering techniques using mixed media and/or digital tools.</p> <p>Instructor feedback To each student on individual basis</p>
2-3	<ul style="list-style-type: none"> Form and visualization Introduction to various rendering techniques using a variety of mixed media and/or digital tools for visual presentation of product designs. 	2,4,5	<p>Class Exercise Demonstration and practice of concept and presentation rendering techniques.</p> <p>Peer critique and discussions</p>
4-7	<ul style="list-style-type: none"> Form and Visualization Introduction to various model making techniques using a variety of materials for visual and physical presentation of product designs. 	2,4,5	<p>Lecture: Model making and finishing techniques for presentation models.</p>

	<p>Introduction to various finishing methods for presentation models.</p>		<p>Workshop practice on model making and finishing Demonstration and practice using various materials and methods.</p> <p>Class Assignment Creation of a static model with high quality finishing.</p> <p>Consultation and Review on class assignment</p> <p>Presentation of class assignment Critique and feedback.</p>
8	<p>● Design Project (Part 1)</p> <p>Introduction to product design process (brief, project identification, research and data collection, ideation, concept selection, design development and finalization and presentation)</p> <p>Interdisciplinarity of product design with visual communication and interaction</p> <p>Design project to explore issues relating to function, cognition and aesthetics</p>	1,2,3,4	<p>Lectures:</p> <ol style="list-style-type: none"> 1. Design process for Product Design. 2. Interdisciplinary Design. <p>Discussions on the lecture</p> <p>Introduction to the Design Project</p> <p>Project brief Expectations Schedule Presentation and submission format</p>
9-12	<p>● Design Project (Part 2)</p> <p>Design project to explore issues relating to function, cognition and aesthetics</p> <p>Throughout the last 4 weeks of the semester the design project will be subject to review through its various stages of completion. This will be carried out in class presentations by students and will allow for a peer-review-based examination of the works in progress. In this highly interactive process you will learn through and from the work of your peers and the advice offered by the instructor. These reviews will take all previously learned concepts into account and test the students in terms of their</p>	1,2,3,4,5	<p>Lectures:</p> <ol style="list-style-type: none"> 1. Case study of successful product design projects with case study 2. Trends in design: product, interaction and graphics <p>Continuous review of design project through various stages of completion</p> <p>Student Presentations on final assignment with critique and feedback.</p>

	understanding of applying these to practice.		
13	<ul style="list-style-type: none">● Design Project (Part 2) Final presentation of design project through: <ol style="list-style-type: none">1. verbal presentation with slide/video explaining the whole process, decisions and final design2. Physical mock-up depicting the final design	4,5	Presentation and Review of submission