COURSE CONTENT

Course Code	DR3006
Course Title	Product Design III
Pre-requisites	DR2004 Product Design II
No of AUs	3
Contact Hours	39 hours studio contact

Course Aims

This intermediate level course introduces you to the practice of user-centric design and designing of product systems. It is integrated as a practice-based learning experience that develops students' ability to apply the design process in the creation of product systems that combine objects, services and interfaces. This course will prepare you in designing objects and services more holistically and at a higher level in your study of product design in years 3 and 4.

Intended Learning Outcomes (ILO)

By the end of the course, you should be able to:

1. Identify and discuss various facets of design and user-centric design methods used in the design of product systems consisting of objects and services.
2. Generate and refine product system designs from idea to execution through various physical and/or digital media.
3. Apply product/ industrial design, interaction design and user-centric design methods to realize design projects based on various themes.
4. Present your design projects and product system in a clear and cohesive manner through visual presentations and virtual/ physical objects.
5. Constructively discuss and critique various facets of design and user-centric design methods and presentation techniques employed in your own work and the work of your peers.

Course Content

Design Process
You will be introduced to the design process for product/ industrial design starting from research/ ideation through to implementation.

User-Centric Design
You will be introduced to the user-centric design process and how it is used to define product requirements and usability.
Tangible topics in user experience (UX) and user interface (UI) design will also be covered.

Product systems design
You will be introduced to the context of design product systems which combine both objects and services in its use. Design of such systems requires knowledge and application of various design disciplines such as product/ industrial design, interaction design, user experience (UX), and user interface (UI) design.

Design project
You will apply product/ industrial design, interaction design and user-centric design methods to realize a design project based on various themes.

Assessment (includes both continuous and summative assessment)

Component	ILO Tested	Programme LO	Weighting	Team/ Individual
User-Centric Design: Research presentation - 10 UX/UI design - 10	1,2,3,4	N.A.	20	Individual
Design Project: Idea formulation and research - 15 Project development - 25 Final presentation - 20	1,2,3,4	N.A.	60	Individual
Continuous Assessment: Participation	5	N.A.	20	Individual
Total			100%	

Reading and References

1. Cuffaro, Dan, and Isaac Zaksenberg. The Industrial Design Reference & Specification Book: Everything Industrial Designers Need to Know Every Day. Rockport Publishers, 2013.
2. King, Simon, and Kuen Chang. Understanding industrial design: principles for UX and interaction design. " O'Reilly Media, Inc.", 2016.
3. Milton, Alex, and Paul Rodgers. Research methods for product design. Laurence King Publishing, 2013.
4. Rowland, Claire, et al. Designing connected products: UX for the consumer Internet of Things. " O'Reilly Media, Inc.", 2015.

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 on 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, 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	**Introduction** Overview of course **Design Process** Design process for Product/ Industrial Design **Design Exercise** Create a presentation identifying the design process used by various companies and design consultancies	2, 3, 5	**Lecture:** Introduction to course, relevance within the scope of product design and expectations Design Process from research/ ideation through to implementation. Theory and case studies **Design Exercise** Brief, case studies and discussion
2	**Design Exercise** Create a presentation identifying the design process used by various companies and design consultancies **User-Centric Design** User-Centric Design process and methods **User-centric design assignment** Conduct a user study for a specific industry vertical and present your findings	1, 2, 3, 4, 5	**Design Exercise Presentation** Presentation by student groups **Lecture:** User-Centric Research methods Looking, Learning, and Asking **User-centric design assignment** Brief, case studies and discussion

3	**Product System Design** **Design Project** Create a product system design for various industry verticals (e.g. Healthcare, Transportation, Utilities, Retail, etc.)	1, 2, 3, 4, 5	**Lecture:** Product System Design and case studies **Design Project** Project brief and introduction
4	**User-Centric design assignment presentation** Verbal/ visual presentation of user study for a specific industry vertical	1, 2, 3, 4, 5	**Student Presentations** on user study with critique and feedback
5-6	**Design Project** Create a product system design for various industry verticals (e.g. Healthcare, Transportation, Utilities, Retail, etc.)	1, 2, 3, 4, 5	**Continuous review of design project through various stages of completion** Continuous assessment and feedback throughout production.
7	**Design Project: Concept Presentation** Create a product system design for various industry verticals (e.g. Healthcare, Transportation, Utilities, Retail, etc.)	1, 2, 3, 4, 5	**Student Presentations** on Design Concepts with critique and feedback
8	**User Experience (UX) / User Interface (UI) design**	1, 2, 3, 4, 5	**Lecture:** User Experience (UX) / User Interface (UI) Design methods and applications
9-12	**Design Project:** Create a product system design for various industry verticals (e.g. Healthcare, Transportation, Utilities, Retail, etc.) **Design Refinement** **Model Making**	1, 2, 3, 4, 5	**Design Refinement** Form, usability, human factors, materials & manufacturing **Model Making** Discussion and practice on various object/ model making materials and techniques in studio/ workshop. Continuous assessment and feedback throughout production.
13	**Design Project: Final Presentation** Final verbal/ visual presentation of design project Physical objects/ models	1, 2, 3, 4, 5	**Student Presentations** on Design Project with critique and feedback