

COURSE CONTENT

Course Code	DD9009
Course Title	Design Thinking
Pre-requisites	NIL
No of AUs	3
Contact Hours	39

Course Aims

In this introductory course you will become familiar with the design process known as design thinking. You will learn how to use design thinking to empathise with a challenge, develop a point of view, use ideation to form possible responses, prototype possible solutions, and conduct user testing to gain feedback. Design thinking encourages trans-disciplinary collaborations and can lead to creative and innovative solutions in all disciplines.

Intended Learning Outcomes (ILO)

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

1. Describe the methodology of design thinking across differing situations.
2. Critically assess projects that use design thinking as methodology.
3. Apply design thinking to design projects by applying empathy, developing a point of view, ideation, prototyping and user testing.
4. Evaluate the role that design thinking plays in shaping and reflecting society and culture.
5. Contribute to and critique discussions on the design thinking process and efficacy in class, in your own work and in the work of your peers

Course Content

As we witness the trend in merging of fields of expertise and medias, design thinking has become a common denominator, driver, translator, and connector of different disciplines.

This course encourages a mix of unusual types of collaborations among disciplines. You will get a taste of the design thinking process comprising of: empathy, definition of problem, ideation, prototyping and testing.

Lectures will introduce you to the key phases of design thinking.

1. Empathy: understand the user needs through empathy employing different methods of observation, engagement and immersion
2. Definition of problem: capture and analyze the findings of observation in order to create a point of view
3. Ideation: generation of unusual, radical responses to address points of view
4. Prototyping: physical exploration through construction of objects, role play, story boarding to investigate how ideas develop and take place in the physical space

- Testing: generate feedback from users, incorporate feedback into prototype, continue to learn about the user's needs.

Assessment (includes both continuous and summative assessment)

Component	ILO Tested	Programme LO	Weighting	Team/ Individual
Continuous Assessment: Design Thinking Challenge 1. Empathy 2. Definition of problem 3. Ideation 4. Prototyping 5. Testing	1,2,3		50% (10% each component)	Team
Design Thinking Project 1	1,2,3,4,5		15%	Team
Design Thinking Project 2	1,2,3,4,5		15%	Individual (Peer evaluation)
Continuous Assessment: Participation	5		20%	Individual
Total			100%	

Recommended Reading and References

- Brown, Tim. Barry Katz, *Change by design: how design thinking transforms organizations and inspires innovation*. Harper Business 2009
- Kelly, Tom. Jonathan Littman, *the art of innovation: lessons in creativity from IDEO, America's leading design firm*. Harper Collins Business 2001
- Myerson, Jeremy. *Ideo: masters of innovation*. Laurence King 2004
- Patnaik, Dev. Peter Mortensen, *wired to care: how companies prosper when they create widespread empathy* FT Press 2009
- Pilloton, Emily. Allan Chochinov, *Design revolution: 100 products that are changing people's lives*. Thames & Hudson 2009

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 10 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, 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, You' progress, public holidays and unforeseeable circumstances. A revised schedule will be issued to you at the start of the semester.

Week	Topic	Course LO	Readings/ Activities
1	<ul style="list-style-type: none">What is Design Thinking? Overview of key concepts on Design Thinking	1	Introductory Lecture In-class exercise Design Thinking crash course, and discussion of outcomes

2 - 3	<ul style="list-style-type: none"> • Empathy Explore different methods of user observation, engagement and immersion 	1,2,3,4,5	Assign readings, videos understand empathy Assign Project understanding the user's needs Student Presentations on observation, engagement, immersion
4 - 6	<ul style="list-style-type: none"> • Definition of problem: capture and analyze the findings on observation in order to create one's own point of view 	1,2,3,4,5	In-class exercise brainstorming Assign Readings understand definition of problem Project Critique Definition of problem Student Presentations Definition of problem.
7-8	<ul style="list-style-type: none"> • Ideation: generation of unusual, radical responses to address one's point of view 	1,2,3,4,5	In-class exercise brainstorming Assign readings, videos understand Ideation Student Presentations Ideation
9-10	<ul style="list-style-type: none"> • Prototyping: exploration of ideas in the physical form through construction of objects, role play, story boarding to investigate how ideas develop in physical space 	1,2,3,5,5	In-class exercise different types of prototyping Assign readings, videos understand prototyping Student Presentations prototyping
11-13	<ul style="list-style-type: none"> • Testing: receive feedback from users, incorporate feedback into prototype, continue to learn about the user's needs. 	1,2,3,4,5	In-class exercise testing with users Student Presentations testing outcomes