





1.	Module Code	DTK1234-E	
2.	Module Title:	DTK1234-E: Design Thinking	
3.	Course Schedule and Fees:	Rolling registration: Ongoing till 12 May 2023 Course Duration: 1 Mar – 19 May 2023 Fees: FREE	
4.	Module Description:	In this module, students will use design principles to develop their creative potential and practise design thinking using a people-centred approach to solve problems and create new possibilities. Through practical activities, students will discover tools and mindsets that guide them in navigating ambiguity in a creative process, observing and learning from others in unfamiliar contexts, and generating and experimenting with ideas quickly. While students draw on design thinking as a personal creative skillset, they will also value the impact of design that affords people the opportunities and privileges to shape the world that they, and others, inhabit.	
5.	Learning outcomes:	<ol style="list-style-type: none"> 1. To understand the significant role of design in shaping everyday life. 2. To identify the design thinking process as a human-centric innovation process driven by creativity and appreciate how it works as an iterative cycle. 3. To find root issues and reframe problems to generate alternatives, multiple entry points with ideas. 4. To approach a problem from a user's point of view, and develop empathy towards the complexity of human needs and contexts. 5. To grasp the significance of making prototypes as an iterative and reflective process. 6. To evaluate their prototypes in context, observe user behavior, and devise an action plan for improvement. 7. Identify what a well designed product means in a design perspective. 	
6.	Background of DTK1234-E	DTK1234 is NUS' flagship Design Thinking module developed by the Division of Industrial Design. DTK1234-E is a module variant specially developed for NUSS, which uses content from DTK1234's Individual Learning Activities. The learning objectives of this module include ideation & reframing, empathy, iterative prototyping, authentic evaluation, and the understanding of design values. No pre-requisite(s) are required to take part in this module.	
7.	Workload hours per week: (The weekly workload for a 4-MC module must add up to 10 hours—e.g., 2 hours lecture; 1 hour tutorial; 7 hours preparatory work. The number of hours of preparatory work is the time a student is expected to spend in preparing for tutorials, projects, assignments, etc.)	(i) Lecture/Class:	1
		(ii) Tutorial/Seminar:	0
		(iii) Laboratory:	0
		(iv) Fieldwork, projects, assignments, etc:	2
		(v) Preparatory work:	1
		Total:	4

8.	Module Lecturer(s):	(i) Principal lecturer(s):	DTK Team
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9.	Modes of Teaching and Learning:	<ul style="list-style-type: none"> - The module will be taught 100% online and all teaching materials (videos and worksheets) will be hosted on Canvas. - Support will be available during office hours on the course platform for student consultations who would like to speak to an instructor.
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10.	Syllabus/ Schedule	<p><u>The 6 ILA Segments</u></p> <p>In DTK1234-E, you will experience the Design Thinking process by participating in 6 Individual Learning Activities (ILA) segments. For each segment, you will first watch the Segment's learning videos before completing the respective worksheet.</p>   <p><u>Intro Segment: Design Doing, not Thinking</u></p> <p>In this introductory Segment, you will be introduced to the key mindsets of Design Thinking: ideation, human-centered design, iteration and failure, divergent and convergent thinking, lateral thinking, and reframing. You walk away with the understanding these elements play as part of a coherent design thinking process, which gives you the context for diving deeper into each subsequent topic.</p>  <p><u>Segment 1: Systematic Creativity</u></p> <p>Through a series of systematic methods, you will learn to reframe innovation topics to find better entry points for generating solutions, instead of tackling issues head-on. You will completed a guided Miro workboard to generate ideas and reflect on how that process has boosted your creative courage. Remember to download the Miro application in advance!</p> 
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Segment 2: Empathize

As design is a human-centered activity, this Segment aims to stretch your 'empathy muscle' through approaching issues from your user's point of view. This enables you to work out how someone else navigates their environment, reacting to situations based on their thoughts, feelings, and experiences. This Segment emphasizes the significance of learning from others – from end users, other stakeholders, and even team members.



Segment 3: Do, Undo, Redo

In this segment, you will learn the significance of making prototypes as a iterative and reflective process through rapidly prototyping complex design ideas with a variety of techniques. Prototypes are an external representation of a designer's internal understanding of a given context. Through an iterative process of building and reflecting on prototypes, learn to objectify and understand a given context to obtain better informed propositions.



Segment 4: Evaluate with People

To fully understand the usefulness of your proposed solution, it must be evaluated with your users. In this segment, learn to evaluate prototypes in context, observe user behavior, recognize a prototype's usefulness and usability characteristics, and aim to improve your proposed solution. You will understand and apply responsible research practices when evaluating your prototype, shifting from validation bias to a more emphatic and curious position that genuinely seeks to discover your blindspots.



Wrap Up Segment: Thinking about Design Thinking

To end off the module, consolidate your takeaways in the form of a Design Thinking Journal (DTJ). Present your Design Thinking journey in a concise and compelling manner, making connections to your work in all the Segments. Use this journal to curate a unique piece of work that you can own and share beyond the bounds of our module!

11.	Assessment (%):	<u>CA components:</u>		
		(i) Tutorial:	100%	
		(ii) Laboratory:	-	
		(iii) Tests:	-	
		(iv) Essay:	-	
		(v) Others: Group Project	-	
		Total for CA:		100%
		Total for Final Examinations:		-
Total Assessment:		100%		
12.	Modes of Teaching and Learning:	<ul style="list-style-type: none"> - The module will be taught 100% online and all teaching materials (videos and worksheets) will be hosted on Canvas. - DTK instructors will be available during office hours consultations for students who would like to speak to an instructor for support. (Details and dates to be released at a later date). - Students are welcome to contact marketing@nuss.org.sg for questions regarding assignments and the curriculum. 		
13.	Illustrative Reading List: Recommended reading:	<p><i>Design Thinking: Understanding How Designers Think and Work</i> by Nigel Cross, 2018.</p> <p><i>Creative Confidence: Unleashing the Creative Potential Within Us All</i> by David Kelley and Tom Kelley, 2013.</p> <p><i>Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation</i> by Tim Brown, 2019.</p>		
	Supplementary reading:	<p>Battarbee et al (2014) "Empathy on the Edge", IDEO</p> <p>Dorst (2015) <i>Frame Innovation: Create New Thinking by Design</i>, MIT Press</p> <p>IDEO (2015) <i>The Little Book for Design Research Ethics</i>, IDEO</p> <p>Pernice (2018) "User Interviews: How, When, and Why to Conduct Them", Nielsen Norman Group</p> <p>Houde, S. & Hill, C. (1997). What do prototypes prototype? In Handbook of human-computer interaction. Pages 367-381</p> <p>Buchenau, M., & Suri, J. (2000). Experience prototyping. Paper presented at the DIS '00: Proceedings of the 3rd conference on Designing interactive systems: processes, practices, methods, and techniques. Pages 424-433.</p>		
14.	Contact details:	For more information, participants may contact marketing@nuss.org.sg for more details.		