

GENERAL EDUCATION, KMITL

COURSE SYLLABUS

Course Code	96642012	Course Title	DESIGN THINKING				
Total Credits	3	Semester / Year of Study	1/2025	Section	751	Date- Time	Thu 0900-1200
Course Description (English)	Learn design thinking process and develop problem-solving skills by studying target group behavior, defining problem, using mind map. Learn techniques for interviewing and group discussion. Practice ideation which leads to creative solutions. Build, present and test prototypes and concepts of design. Learn to apply design thinking process to daily life and create innovation.						
Course Coordinator	Assoc. Prof. Dr. Ravipat Lapcharoensuk (Asst. Prof. Dr. Thattapon Surasak)						
Course Instructors	Asst. Prof. Dr. Thattapon Surasak						
Teaching Assistant (if any)							
Counselling Schedule				Teaching Language	☐ Thai ☒ English ☐ Others, please specify.....		
Website or Online Teaching Method (if any)							
Course Learning Outcomes							
By the end of this course, the student will be able to CLO1: Explain the key concepts and stages of the design thinking process, including empathy, problem definition, ideation, prototyping, and testing. CLO2: Analyse target group behaviours through interviews, observations, and group discussions to identify meaningful problems. CLO3: Develop creative solutions using mind mapping and ideation techniques tailored to the identified user needs. CLO4: Construct and present low- and high-fidelity prototypes, and evaluate feedback to refine design concepts for practical innovation in daily life.							

General Education Learning Outcome: GE-LO

GE-LO	Value
☒ GE-LO-1 Analytical and Critical Thinking	1
☒ GE-LO-2 Complex Problem Solving	4
☒ GE-LO-3 Creativity	5
☒ GE-LO-4 Interpersonal Skills	2
☒ GE-LO-5 Integrity and Perseverance	1
☒ GE-LO-6 Active Learning and Learning Strategies	2
☐ GE-LO-7 Resilience, Stress Tolerance and Flexibility	
☐ GE-LO-8 Leadership and Social Influence	
☐ GE-LO-9 Communication	
☐ GE-LO-10 Entrepreneurship and Startup	
☐ GE-LO-11 Digital Quotient Literacy and Digital Media Production	
Total Value	<u>15</u>

Teaching Plan and Evaluation Plan

Week	Topic/Sub-topic	Activities	Notes
1	Course Introduction & Design Thinking Overview	Icebreaker, course orientation, intro to design thinking stages	
2	Empathy: User Research and Observation	Learn observation techniques, empathy map creation	Formative task 1
3	Interviewing Techniques	Practice semi-structured interviews, group feedback	
4	Define: Synthesising Insights	Develop Point of View (POV) statements from research	Formative task 2
5	Problem Framing & Mind Mapping	Create mind maps to visualise problem scope	
6	Ideation: Brainstorming Techniques	Practice "How Might We" questions, SCAMPER, and brainstorming	Activity worksheet
7	Midterm Pitch (Problem + Idea Presentation)	Each group presents findings and preliminary ideas	
8	Prototyping Basics	Introduction to low-fidelity prototypes and storyboarding	
9	Build Low-Fidelity Prototype	In-class prototyping with feedback loops	Formative task 3
10	User Testing and Feedback	Conduct user tests and summarise feedback	
11	Iteration: Refining the Prototype	Apply feedback to improve prototype	
12	Applying Design Thinking to Daily Life	Case studies and role-playing real-world applications	Reflective essay
13	Digital Tools for Prototyping and Presentation	Tools such as Canva, Figma, Google Slides	Workshop
14	Final Pitch Preparation	Practice final presentation and storytelling	
15	Final Presentation & Submission	Group pitch with prototype demo + individual reflection	

Evaluation Plan

Assessment Activities	Value	Score	Week of Evaluation	Notes
Class Attendance (15 weeks)	1	4	Weeks 1–15	Based on in-class interaction, punctuality, and task completion
Formative Activities (3 Tasks) ●Task1: Empathy Mapping ●Task2: Problem Framing & Mind Mapping ●Task3: Sketching & Storyboarding	3	12	Weeks 2, 4, 9	In-class worksheets and group tasks
Midterm Presentation (Problem + Ideation)	3	12	Week 7	Group work; evaluate empathy, define, and ideation stages
Reflective Essay	2	8	Week 12	Individual report; link to real-life application
Final Group Presentation + Prototype	4	16	Week 15	Final group pitch; design, presentation, and testing
Peer and Self-Assessment (Final)	2	8	Week 15	Self/peer reflection via Google Form
Total	15	60		

Evaluation criteria

☐ Group-based								
☒ Standard-based								
Grade	A	B+	B	C+	C	D+	D	F
Score (60 points)	57-60	49-56.9	41-48.9	34-40.9	27-33.9	21-26.9	15-20.9	0-14.9
☐ Satisfactory/Unsatisfactory (S/U)								
Grade	S				U			
Score (60 points)	30-60				0-29.9			

Scoring criteria according to Assessment Plan

Assessment Activities	Learning Outcomes	Value	Level			
			4 (Excellent)	3 (Good)	2 (Fair)	1 (Poor)
Class Attendance (15 weeks)	GE-LO-5 Integrity and Perseverance	1	15 weeks (no absence) Perfect attendance, always punctual and prepared	13–14 weeks Attended regularly, missed only 1–2 times with a valid reason	10–12 weeks Irregular attendance, missed several classes without a strong reason	Fewer than 10 weeks, frequently absent or disengaged
Formative Activities (3 Tasks)						
Task1: Empathy Mapping	GE-LO-1 Analytical Thinking	1	Provides a well-structured empathy map with deep, meaningful insights across all four quadrants (Think/Feel/See/Do). Demonstrates original interpretation and empathy.	Covers all four quadrants clearly with moderate insight. Some creative thought is shown, but lacking depth in 1-2 areas.	Incomplete or shallow empathy map. Generic or surface-level observations with limited creative interpretation.	Minimal effort; unclear or missing sections. Shows little understanding of the user's perspective or lacks creativity.
Task2: Problem Framing & Mind Mapping	GE-LO-2 Problem Solving	1	Problem statement is precise and user-focused. Mind map is rich, structured, and explores diverse creative pathways. Visual clarity and connections are strong.	Problem statement is clear but could be more focused. Mind map is complete with some branches showing creative thinking.	Problem statement is vague or overly broad. Mind map is basic with few branches or unclear structure.	Unclear or irrelevant problem. Mind map is missing, confusing, or lacks creative input.

Assessment Activities	Learning Outcomes	Value	Level			
			4 (Excellent)	3 (Good)	2 (Fair)	1 (Poor)
Task3: Sketching & Storyboarding	GE-LO-3 Creativity	1	Highly creative sketch and storyboard. Clear, logical flow with strong visual design. User interactions are thoughtfully addressed.	Clear sketches and storyline with moderate creativity. Some logical structure; some steps may lack detail.	Sketch is simple or unclear. Storyboard lacks flow or does not address user needs effectively.	Sketch is missing or minimal. Storyboard is disorganised or lacks any narrative. No sign of creative effort.
Midterm Presentation (Problem + Ideation)	GE-LO-2 Problem Solving	3	Clear problem framing, strong ideation, confident communication	Good understanding, partial clarity	Weak structure, unclear points	Disorganised or off-topic
Reflective Essay	GE-LO-6 Active Learning and Learning Strategies	2	Well-structured, insightful reflections on DT in life	Reasonable reflection with minor gaps	Superficial ideas	Incomplete or vague
Final Group Presentation + Prototype	GE-LO-3 Creativity	4	Creative, practical prototype, strong user feedback use	Good concept, some testing shown	Basic execution	Poor prototype and unclear idea
Peer and Self-Assessment	GE-LO-4 Interpersonal Skills	2	Honest, thorough self and peer evaluation	Moderate detail	Lacks reflection depth	Careless submission or blank form