UCUG1907 (L01) - Design Thinking for Health Innovation

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Course title: Design Thinking for Health Innovation

Course code: UCUG1907

Credit: 3 credits

No pre-/co-requisites

Instructor:

Name: Xuning ZHANG

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Office Hours: Tuesday & Thursday 10:30-11:30

Or make appointment through appointment system https://klms.hkust-gz.edu.cn/ (https://klms.hkust-gz.edu.cn/)

Teaching Assistant

Name: Xingkai WANG

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Course Description

This course is a project-based course for students with no background in design thinking or students who are looking for practical experience in design thinking. This course introduces the basics of design thinking, leads students through a step-by-step design thinking process for health innovation. The contents include empathy, customer needs analysis, problem definition, ideation, and prototyping. Students will form groups to address real-world unmet health needs in the society. It is expected that through studying the design thinking skills, doing group assignments and the capstone project, students will be able to effectively communicate with stakeholders, empathize with users, track ambiguous and challenging health problems, and create innovative solutions to health issues.

Course Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

CILO1: State and explain the process modules of design thinking.

CILO2: Apply design thinking in solving real-world health issues in the society.

CILO3: Demonstrate an understanding of the importance of work and communicate effectively in a multi-disciplinary team.

CILO4: Generate innovative ideas, assess and perform iterative prototyping cycles to decide the best solution and implement ideas into innovations.

CILO5: Apply professional and technical knowledge on design and innovation processes to create user-centered solutions.

Weekly schedule & Weekly ILOs

Week	**Topics**	**Weekly ILOs**
1	Course Introduction Design Thinking Skills Overview; Product Exploration; Customer Research.	CILO-1, CILO-2, CILO-3
2	Team Assignment 2 Presentation Product specification Team Assignment 3 Applied Creativity, Problem Decomposition Product Concept Generation	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5
3	Team Assignment 4 Presentation Prototyping	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5
4	Team Assignment 5 Presentation; Financial analysis and environment sustainability. Prototyping; Capstone Project Roadshow	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve.

Quizzes: 5%

Individual assignment: 5%

Team Assignments (5 team assignments with peer evaluation): 75%

Capstone Project Presentation: 15%

Assessments:

Assessment Task	**Contribution to Overall Course grade (%)**	**Due date**
Quiz	5%	The end of the associated topic
Individual assignment	5%	The end of the associated topic
Team written assignment	75%	The end of each project task
Capstone Project Presentation (poster, video demon, roadshow)	15%	Week 4

* Assessment marks for individual assessed tasks will be released within two weeks of the due date.

Mapping of Course ILOs to Assessment Tasks

Assessed Task	**Mapped ILOs**	**Explanation**
Quiz	CILO1	This task examines students' understanding of the design thinking skills and product design process (CILO1).
Individual assignment	CILO1, CILO2	This task examines students' understanding of the design thinking skills and product design process (CILO1). It also tests students' ability to apply design thinking skills to

		solve real-world health issues (CILO2).
Team written assignment (includes team assignment 2, 4, 5 presentation)	CILO1, CILO2, CILO3, CILO4, CILO5	This task tests students' ability to identify customer needs, create innovative solutions for health issues, create prototypes to test and refine solution ideas, and work and communicate in an interdisciplinary team (CILO1, CILO2, CILO3, CILO4, CILO5).
Capstone Project Presentation (poster, video demon, roadshow)	CILO3	This task tests students' ability to work and communicate in an interdisciplinary team (CILO3).

Grading Rubrics

Team Assignment 1 Rubrics.xlsx (https://hkust-gz.instructure.com/courses/2936/files/588899?wrap=1) ↓ (https://hkust-gz.instructure.com/courses/2936/files/588899/download?download_frd=1) ,
Team Assignment 2 Rubrics.xlsx (https://hkust-gz.instructure.com/courses/2936/files/588897?wrap=1) ↓ (https://hkust-gz.instructure.com/courses/2936/files/588897/download?download_frd=1) ,
Team Assignment 3 Rubrics.xlsx (https://hkust-gz.instructure.com/courses/2936/files/589012?wrap=1) ↓ (https://hkust-gz.instructure.com/courses/2936/files/589012/download?download_frd=1) ,
Team Assignment 4 Rubrics.xlsx (https://hkust-gz.instructure.com/courses/2936/files/588900?wrap=1) ↓ (https://hkust-gz.instructure.com/courses/2936/files/588900/download?download_frd=1) ,
Team Assignment 5 Rubrics.xlsx (https://hkust-gz.instructure.com/courses/2936/files/588896?wrap=1) ↓ (https://hkust-gz.instructure.com/courses/2936/files/588896/download?download_frd=1) ,
Capstone Project Rubrics.xlsx (https://hkust-gz.instructure.com/courses/2936/files/589488?wrap=1) ↓ (https://hkust-gz.instructure.com/courses/2936/files/589488/download?download_frd=1)

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	[Example: Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.]
B	Good Performance	[Example: Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the

		ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.]
C	Satisfactory Performance	[Example: Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.]
D	Marginal Pass	[Example: Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.]
F	Fail	[Example: Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.]

Course AI Policy

In this course, students are allowed to use generative artificial intelligence (AI) to aid you in any manner. However, you must cite the AI generated contents with APA or IEEE citation.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include [specific details, e.g., strengths, areas for improvement]. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Resubmission Policy

Late submission is not allowed.

Course Summary:

Date	Details	Due
Sat Jan 31, 2026	Quiz 1 (https://hkust-gz.instructure.com/courses/2936/assignments/20101)	due by 11:30pm

Date	Details	Due
	Individual Assignment 1 (https://hkust-gz.instructure.com/courses/2936/assignments/20107)	due by 11:59pm
	Team Assignment 1 (https://hkust-gz.instructure.com/courses/2936/assignments/20110)	due by 11:59pm
	Team Assignment 1 Peer Evaluation (https://hkust-gz.instructure.com/courses/2936/assignments/20776)	due by 11:59pm
Fri Feb 6, 2026	Individual Assignment 2 (https://hkust-gz.instructure.com/courses/2936/assignments/20108)	due by 11:59pm
Sat Feb 7, 2026	Quiz 2 (https://hkust-gz.instructure.com/courses/2936/assignments/20102)	due by 11:59pm
Sat Feb 28, 2026	Team Assignment 2 Peer Evaluation (https://hkust-gz.instructure.com/courses/2936/assignments/21541)	due by 11:59pm
	Team Assignment 2 (https://hkust-gz.instructure.com/courses/2936/assignments/20111)	due by 11:59pm
Wed Mar 4, 2026	Team Assignment 3 (https://hkust-gz.instructure.com/courses/2936/assignments/20112)	due by 11:59pm
Fri Mar 6, 2026	Team Assignment 3 Peer Evaluation (https://hkust-gz.instructure.com/courses/2936/assignments/21738)	due by 11:59pm
Mon Mar 23, 2026	Team Assignment 4 (https://hkust-gz.instructure.com/courses/2936/assignments/20113)	due by 11:59pm
	Team Assignment 4 Peer Evaluation (https://hkust-gz.instructure.com/courses/2936/assignments/21739)	due by 11:59pm
Sat Mar 28, 2026	Quiz 3 (https://hkust-gz.instructure.com/courses/2936/assignments/20103)	due by 11:59pm

Date	Details	Due
Wed Apr 22, 2026	Team Assignment 5 Peer Evaluation (https://hkust-gz.instructure.com/courses/2936/assignments/21740)	due by 11:59pm
Fri Apr 24, 2026	Team Assignment 5 (https://hkust-gz.instructure.com/courses/2936/assignments/20114)	due by 11:59pm
Wed May 6, 2026	Quiz 4 (https://hkust-gz.instructure.com/courses/2936/assignments/20104)	due by 11:59pm
	Quiz 5 (https://hkust-gz.instructure.com/courses/2936/assignments/20105)	due by 11:59pm
Mon May 11, 2026	Capstone Project (Team Assignment 6) Peer Evaluation (https://hkust-gz.instructure.com/courses/2936/assignments/23278)	due by 11:59pm
	Capstone Project Presentation (https://hkust-gz.instructure.com/courses/2936/assignments/20106)	due by 11:59pm