ISDN 1007 – From Design Thinking to Design Action: Defining Problems for Better Solutions

School:	**Academy of Interdisciplinary Studies**
Subject Area:	**Integrative Systems and Design**
Course Credit:	**3**
Instructor:	**BRAUD Tristan Camille, LAU Brian Hui Wang**
Pre-requisite/co-requisite:	**Nil**

Notes:

- The syllabi provided here is for reference only and may be subject to changes and adjustments as determined by the course instructors.

The Hong Kong University of Science and Technology

UG Course Syllabus

From Design Thinking to Design Action: Defining Problems for better solutions

ISDN1007

3 Credits

No pre/co-requisites

Name: Tristan Braud; Brian Lau

Email: braudt@ust.hk; brianlau@ust.hk

Office Hours: By appointment

Course Description

This courses combines design research and design thinking to equip students with the skills to address real-world challenges. Following the five modules of “Empathize”, “Define”, “Ideate”, “Prototype”, and “Test”, students will learn to explore and understand complex problems using design research methods. Starting with contextual and user research, students will identify the primary stakeholders and their needs in a given context.

The second part of the course will focus on ideating and prototyping innovative solutions to the identified problems, turning creative ideas into actionable solutions. Throughout the course, students will engage in hands-on projects, working collaboratively to develop their communication, analytical, and project management skills. By the end, students will be prepared to apply these skills in real-world contexts, creating meaningful and impactful solutions.

Intended Learning Outcomes (ILOs)

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

1. Understand design research methods and apply them through a real-world project

2. Identify users, stakeholders, and their needs in a specific contex

3. Identify and formulate problems

4. Explore the current technological landscape and identify opportunities for innovations

5. Ideate and prototype solutions to the identified problems

6. Work and communicate as a team

7. Communicate and explain the process

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)	Due date
Project Report and Group Documentation	40%	TBC
Presentations	40%	TBC
Course Participation	10%	TBC
Peer Evaluation	10%	TBC

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Project Report and Group Documentation	**ILO 1, ILO 2, ILO 3, ILO 4, ILO 5, ILO 7**	The task assess both the continual design process across the course and the students' final reflection toward the project. It evaluates students' ability to record and apply **design research methods (ILO 1)**, document their findings regarding **users and stakeholders (ILO 2)**, and formally **formulate the problem (ILO 3)**. The report must demonstrate how they explored the **technological landscape (ILO 4)** to justify their **ideated and prototyped solutions (ILO 5)**. Finally, the documentation aspect highlights the ability to **communicate and explain the process (ILO 7)** in writing.
Presentations	**ILO 3, ILO 5, ILO 7**	The presentation assesses the students' ability to synthesize their findings and justify their solution. It requires them to clearly articulate the **formulated problem (ILO 3)** and demonstrate their **prototyped solution (ILO 5)** visually and verbally. It is also the primary measure of their ability to **communicate and explain the process (ILO 7).**
Course Participation	**ILO 6, ILO 7**	Active participation in the course and project discussions is essential to the design process, allowing the evaluation of the **communication as a team (ILO 6) and to a broader audience (ILO 7).**
Peer Evaluation	**ILO 6**	Being able to reflect on teamwork is an essential aspect of the design process. This task will focus on the **group dynamics (ILO 6).**

Final Grade Descriptors:

[As appropriate to the course and aligned with university standards]

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates mastery of the course topics. Observations and interviews are comprehensive both in planning and execution. Findings are deep and non-obvious, leading to a concise problem formulation that highlights deep issues. Ideation and prototypes are innovative with clear pathways to realization. At all stages of the process, students demonstrate critical thinking and strong group dynamics.
B	Good Performance	User research is thorough, leading to clear and logical problem definitions. Solutions and prototypes are creative and functional, addressing the core user needs effectively. The student communicates the process clearly within the team.
C	Satisfactory Performance	Demonstrates an adequate understanding of the five design modules but lacks depth in application. User research is conducted but insights are commonplace and surface-level. Prototypes are functional but safe or derivative rather than innovative. Problem formulation is present but may be too broad. Teamwork and communication meet the basic requirements but lack proactive engagement.
D	Marginal Pass	Basic or fragmented understanding of the design process. Research is minimal or disconnected from the final solution. The problem definition is vague, and prototypes are low-quality or lack meaningful validation. The student demonstrates limited ability to work effectively in a team or communicate the project narrative, barely meeting the minimum course deliverables.
F	Fail	Fails to grasp the core concepts of the course or apply research methods. No clear user needs or problem definitions are identified. Solutions are missing, irrelevant, or undeveloped. The student has largely disengaged from the group work, failing to contribute to the team effort or missing major deadlines and assessment criteria.

Course AI Policy

AI is allowed in the course but not encouraged.

Communication and Feedback

Feedback will be given during the project tutorials and in-class exercises. Additional feedback can be requested by making an appointment.

Resubmission Policy

Resubmissions will be allowed on a case-by-case basis. Please see the instructor.

Required Texts and Materials

N.A.

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

Additional Resources

[1] IDEO Design Kit: https://www.designkit.org/Links to an external site. [2] User Research and Design: https://think.design/services/user-research-company/Links to an external site.

[2] Delft Design Guide: https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdfLinks to an external site.

[3] Rodgers, P.A. and Milton, A., 2013. Research methods for product design.

These resources can be informative beyond the scope of the class. Note that most of these books focus on a specific field

[1] Wickens, C.D., Helton, W.S., Hollands, J.G. and Banbury, S., 2021. Engineering psychology and human performance. Routledge.

[2] Preece, J.; Rogers, Y. & Sharp, H. (2015), Interaction Design: Beyond Human-Computer Interaction , Wiley , Hoboken, NJ .