UCOP 3200 - Design for Global Health

(3 Credits) 2024-2025 Spring

Course Details

SIGHT Teaching Team

Name	Email	Office
Prof. Ying CHAU	keychau@ust.hk	4555
Dr. Malinda ABEYNAYAKE	malinda@ust.hk	2513
WONG Kam Wing	tomaswong@ust.hk	2513
Kristopher LAM	kristopher@ust.hk	2513
Kahlen Chan	kahlen@ust.hk	2513
Denise Chan	hcdenise@ust.hk	2513

Course description

This course is offered by Student Innovation for Global Health Technology (SIGHT) at HKUST, and is a project-based, experiential course that exposes students to tackle global health problems using design thinking as an innovation process. The goal of this course is to develop students' critical thinking, understand the needs of different communities around the world, and improve communication, design skills through a multi-disciplinary, team-based design experience. Each team will set objectives at the beginning of the semester after getting the needs of communities via the project partners. There will be several task-based assessments throughout the semester to check the progress of each project team, as evaluated by the teaching team, faculty advisors, and project partners. At the end of the semester, students need to showcase their output as a roadshow.

This common core course is open to students from any academic background looking for practical experience in design thinking and motivation to tackle global health issues. The instructor's approval is required for enrollment in the course.

Course ILOs

- State and explain the process modules of design thinking
- Apply design thinking mindset to identify and analyze user needs in the global health context
- Collaborate and communicate effectively in a multi-disciplinary team
- Define the scope of the problem and develop innovative ideas to address the user needs
- Engage in iterative prototyping processes and evaluate solutions to effectively tackle global health challenges

Class time: 3 hours per week, Wed 18:00 – 19:30 and one more time slot for each project team.

Projects

PROJECT A: Telemedicine Implementation in Haputale

Implementing telemedicine with Two Leaves Trust Foundation to enhance healthcare delivery in rural communities through hardware and software solutions, while also engaging local youth by providing IT training for future technical support.

PROJECT B: Community Health Screening in Haputale

Enhancing community screening programs in partnership with Two Leaves Trust Foundation to improve health access and outcomes for rural communities.

PROJECT C: Community Health Technology Collaboration with Faculty of Medicine at the University of Kelaniya

Collaborating with undergraduates from the Faculty of Medicine at the University of Kelaniya in brainstorming and integrating innovative technology solutions into their Community Attachment Program, aimed at gaining insights into the impact of health care projects from Medical school students to enhance project outcomes.

Course Outline

- The schedule may be subject to minor changes depending on the circumstances.
- The arrangements for different teams may vary slightly based on project nature.

Week 1	• Kickstart Meeting/Introduction to SIGHT UCOP 3200 project course – "Design for Global Health" • Skills assessment for the team • during the 1st Team Meeting
Week 2	• Design Thinking Workshop • Prepare for Literature Review
Week 3	• Extensive Literature Review on existing solutions/technologies & global market: ○ Each Team has to present for 1 hour plus 15 minutes of Q&A during their Team Meeting • Communicate with partners and finalize project objectives • Finalize Project Objectives
Week 4	• Prototyping workshop • Team Work
Week 5	• 1st Internal Check
Week 6	• Communicate with partners and update the results/feedback of the 1st Internal Check
Week 7	• Feedback session with faculty advisors
Week 8	• 2nd Internal check
Week 9	• Communicate with partners and update the results/feedback of the 2nd Internal Check • Teamwork & preparation for the project pitch
Week 10	• Internal Project Pitch
Week 11	• Prepare for Roadshow • Submission of Roadshow posters
Week 12	• Roadshow
Week 13	• Submission of Final Documentation • Course debrief

	• Peer Evaluation

Assessment scheme

Assessment components	Percentage
Literature Review: Presentation on existing solutions & global market	10%
Internal Check ×2	20%
Project Pitch	15%
Final Roadshow	20%
Final Documentation	15%
Self-reflection report	5%
Peer Evaluation (2x)	15%

Literature Review: Presentation on existing solutions & global market

Each team will have a 60-minute presentation plus 15-minute Q&A. The content and presentation skills, such as coherence and use of visual aids, will be evaluated.

Information should be gathered from literature and other resources. An in-depth understanding and analysis of the potential users and existing solutions/products are expected. Students should be familiar with the situation and dynamics of the population and areas to be served. The review should also provide/identify:

- A solid background on the project problem
- Similar technologies/solutions currently used in other communities
- Strengths and weaknesses of existing solutions
- Any gaps in existing solutions, and
- Hence the opportunities to make your proposed solution distinctive to these existing solutions

Internal Check ×2

The prototypes will be tested on campus, in a setting simulating the real situation. The performance of prototype and the proficiency in collecting information from such testing will be evaluated.

Teaching team will design goals/milestones for each Internal Check, based on the initial objectives set by the team. Students are expected to obtain as much information as possible from the test, and incorporate the findings into the next round of iteration.

Project Pitch

After weeks of work, students will get a better understanding of exact user needs and develop more mature prototypes. Project teams will get a chance to Pitch their solutions to the class, gather in-depth feedback from peers and the teaching team.

Final Roadshow

The Final Roadshow to showcase your project to the UST community. The Roadshow should include the background and scope of the project, rationale and evolution of the design, demonstration of the prototype and introduction of the implementation plan. Guests with relevant expertise and experience would be invited, such as SIGHT advisors, consultants, representatives from NGOs and social enterprises. The presentation is also open to the HKUST community. For evaluation, each team will have 15 minutes for demonstration and 15 minutes for Q&A.

Final Documentation

This report will likely be the key (or even only) document where students can pick up where you have left off. So you need to pass over all related files to us to be uploaded to SIGHT's GitHub, such as detailed description of your prototype, software codes with comments (if coding was involved), design files (pictures and figures to illustrate your prototypes, 3D modelling files), user manuals, results of user tests, feedback from partners, etc.