

Title (Units): **GTSC2055 Design Thinking and IT Empower Social Innovation (3,1,2)**

Course Aims: The aim of this course is to provide students with Design Thinking methodology, information technology knowledge, and business concepts to drive social innovation. Our society is facing various social challenges, including in the field of social inclusion, ageing, healthcare, environment, poverty, underprivileged groups, etc. Therefore, we will introduce key concepts of information technologies and business, and use Design Thinking methodology to motivate students to understand how innovative digital solutions play a role in solving these social challenges. For example, AI technology may allow visually impaired people see road conditions, data analytics may predict and prevent elderly's health risks.

This course adopts a field trip and problem-based learning approach. Students will learn the historical and cultural analysis of social challenges, development and key theories of information technology, as well as an overview of business knowledge, including a review of the relationship between technology, business, and social innovation. We will also give an overview of current innovative examples of IT applications in social issues (e.g. Microsoft Seeing AI application empowers visually impaired groups, Jockey Club Age-Friendly City Projects using big data analytics to predict risky cases in elderly care homes, etc.). We will guide students to use Stanford's Design Thinking methodology. Design Thinking workshops will be conducted to develop students' empathy and understanding of social challenges, and lead students to analyse and apply various IT and business theories to design feasible, sustainable, and creative solutions for the society. We will conduct design workshops with our partners (social enterprises/NGOs). Students can choose the specific social issue they want to tackle and work with related partners for empathy development and idea testing.

After completing the course, students will have a deeper understanding of contemporary social challenges, and gain the knowledge and skills on how to use IT to tackle social problems and design creative innovations.

Prerequisite: Nil

Course Intended Learning Outcomes (CILOs):

Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Interpret and critique social issues and describe the sustainable development goals.
2	Describe the human-centered Design Thinking methodology.
	Skill
3	Describe the key and latest information technologies and business models in social innovations and their impacts on societies around the world.
4	Assess the feasibilities of these technologies in driving social innovation.
5	Apply information technologies as well as Design Thinking methodology to solve social challenges innovatively.

Calendar Description: The aim of this course is to provide students with information technology knowledge and business concepts to drive social innovation. We will guide students to use Stanford Design Thinking methodology, combined with field-trips and case-study based approach. Students will learn the historical and cultural analysis of social challenges, development and key theories of information technology, as well as an overview of business knowledge, including a review on the relationship between technology, business and social innovation. Students will also do case study on current innovative examples of IT application in social issues (e.g. Microsoft Seeing AI application empowers visual impaired group,

Jockey Club Age-Friendly City Projects using big data analytics to predict risky cases in elderly care home, etc.).

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1 - 2	- Lectures will be given to introduce different social challenges. - Case Study Tutorials will be used to help students identify the new possibilities of information technology in various social challenges. - Design Thinking Workshops will guide students to develop empathy in society. - Field Trips will be conducted to make students understand deeper social challenges. - Group project and in-class discussions will evaluate students' understanding of social issues and sustainable goals
2 - 5	- Lectures will introduce timely and key technologies which can be applied to empower social innovation - Design Thinking Workshops will inspire students to apply the IT and business theories to design feasible, sustainable and creative solutions for real social issues. - Group project and in-class discussions will evaluate students' understanding of social issues and sustainable goals

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Group Project	30%	1 - 5	Group Project is used to evaluate if students can relate lecture concepts to real cases. Students will work in groups to develop social innovations to tackle the current needs of society. We will assess how well students could understand underlying problems and needs, how well they could apply Design Thinking to approach user-centered solutions, and how well they could apply IT to tackle those problems.
2	Case Study Assignment	10%	1, 2, 4	Case Study Assignment is used to test how well students understand and apply the concepts and skills to perform analysis on cases which are related to their own disciplines.
3	Workshops Exercise	30%	1 - 5	Workshops Exercises are used to test how well students can apply Design Thinking methodology and technology to real-world problems.
4	Quiz	15%	1 - 4	Quiz is used to evaluate how well students understand sustainable development, technologies, and Design Thinking methodology.
5	In-class Sharing and Reflection	15%	1 - 5	In-class Sharing and Reflection is to evaluate how students master the concepts learnt and relate them to real-life problems. It also encourages peer learning.

Assessment Rubrics:

Excellent (A)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a thorough understanding of the concepts of information management technology in business environment. • Demonstrate excellent ability to use IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to well apply Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to well apply information technologies as well as business knowledge to solve social challenges innovatively.
Good (B)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a good understanding of the concepts of information management technology in business environment.

	<ul style="list-style-type: none"> • Demonstrate good ability to use IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to apply Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to apply information technologies as well as business knowledge to solve social challenges innovatively.
Satisfactory (C)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a basic level of understanding of the concepts of information management technology in business environment. • Able to use a few IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to apply certain Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to apply a few information technologies as well as business knowledge to solve social challenges innovatively.
Marginal Pass (D)	<ul style="list-style-type: none"> • Achieve the first two CILOs, demonstrating a minimal level of understanding of the concepts of information management technology in business environment. • Able to use basic IT tools to acquire, communicate and present social and business information via different digital media formats. • Able to apply basic Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Able to apply basic information technologies as well as business knowledge to solve social challenges innovatively.
Fail (F)	<ul style="list-style-type: none"> • Do not achieve the first two CILOs, and have little understanding of the concepts of information management technology in business environment. • Unable to use basic IT tools to acquire, communicate and present social and business information via different digital media formats. • Unable to apply basic Design Thinking to understand and analyse social challenges, and design user-centric solutions using information technology. • Unable to apply basic information technologies as well as business knowledge to solve social challenges innovatively.

Course Content and CILOs Mapping:

Content		CILO No.
I	Social Issues and Society Challenges	1, 2
II	Foundations of Design Thinking	2
III	Information Technology for Social Innovation	3 - 5

References:

- Electronic materials prepared by instructors (e.g., presentation slides, problem-solving worksheets and workshop sheets) will be used.
- Digital 21 Strategy: www.digital21.gov.hk/
- Michael Lewrick, Patrick Link and Larry Leifer, *The Design Thinking Playbook: Mindful Digital Transformation of Teams, Products, Services, Businesses and Ecosystems*, Wiley, 2018
- Efraim Turban, Carol Pollard and Gregory Wood, *Information Technology for Management: Driving Digital Transformation to Increase Local and Global Performance, Growth and Sustainability*, Wiley, 12th edition, 2021.
- Neil Malhotra (Editor), *Frontiers in Social Innovation: The Essential Handbook for Creating, Deploying, and Sustaining Creative Solutions to Systemic Problems*, Harvard Business School Publishing Corporation, 2022
- Tom Kelley and David Kelley, *Creative Confidence*, Currency, 2013

- Jeanne Liedtka, Randy Salzman and Daisy Azer, Design Thinking for the Greater Good: Innovation in the Social Sector, Columbia Business School Publishing, 2017
- Hussain Almosawi, The Innovator's Handbook: A Short Guide to Unleashing Your Creative Mindset, Mossawi Studios, LLC, Dearborn Michigan, 2022
- Stanford Design Thinking <https://dschool.stanford.edu/resources/dschool-reading-list>
- The Sustainable Development Goals of United Nation: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

Course Content:

Topic

- I. Social Issues and Society Challenges
 - A. Global and local social challenges
 - B. Historical and cultural analysis leading to the current state of social challenges
 - C. Sustainable Development Goals (SDG) of United Nations
 - D. Concepts of Enterprise, Social Enterprise and NGO
 - E. Case studies of social innovation in various areas, for example: Underprivileged groups, Ageing, Education, Environment

- II. Foundations of Design Thinking
 - A. Stanford Design Thinking Methodology
 - B. IBM Design Thinking Methodology

- III. Information Technology for Social Innovation
 - A. Digital Inclusion
 - B. Artificial Intelligence for Social Innovation
 - C. Big Data Analytics for Social Innovation
 - D. Cloud Technologies for Social Innovation
 - E. Internet of Things (IOT) and Wearable Devices for Social Innovation
 - F. Safeguarding your Social Innovation
 - G. Integrated technologies for Social Innovation