

IS447: Smart Healthcare in Asia

Instructor Hwee-Xian TAN
Tel +65 6828 9692
Email hxtan@smu.edu.sg

COURSE DESCRIPTION

The annual expenditure on healthcare, by both individuals and governments, is expected to continue increasing within the next five years. There is thus an imminent need to stretch the effectiveness of the expenditure, and explore new innovations, which can subsequently serve the needs of the rapidly ageing population, tackle the issues associated with shortage of healthcare professionals, and achieve improved clinical outcomes.

This course will explore the changing needs and trends of the healthcare industry, and how innovation can address the rising costs and inefficiencies in the healthcare systems, with a particular focus on Singapore and Asia. Students can expect to be equipped with knowledge of state-of-the-art smart healthcare technologies, as well as examine the multi-faceted impact of technology on this multi-million dollar industry, through various lenses.

LEARNING OBJECTIVES

At the end of the course, you should be able to have:

1. Broad awareness of care landscape and ecosystem in Singapore.
2. Understand importance and factors leading to smart healthcare.
3. Conceptualize and design an end-to-end technological solution to solve a relevant healthcare problem.
4. Good understanding of constraints and limitations of operationalizing smart healthcare.

PRE-REQUISITE/ CO-REQUISITE/ MUTUALLY EXCLUSIVE COURSE(S)

None

ASSESSMENT METHODS

Students will be assessed based on the following:

| | |
|---------------------------|-----|
| Class Participation | 20% |
| Reflections | 10% |
| Quiz | 15% |
| Assignment | 15% |
| Final Report (Team) | 20% |
| Final Presentation (Team) | 20% |

INSTRUCTIONAL METHODS AND EXPECTATIONS

Attendance is compulsory, unless with valid reasons (e.g., MC).

All materials will be provided online, via eLearn.

CONSULTATIONS

By email appointment only.

CLASS TIMINGS

| Regular Classes | | |
|-----------------|---------------------|------------------------|
| Tue | 1530 hrs – 1845 hrs | SIS Class Rm B1-1 |
| Wed | 1530 hrs – 1845 hrs | SIS Class Rm B1-1 |
| Thu | 1530 hrs – 1845 hrs | SIS Class Rm B1-1 |
| Makeup Classes | | |
| Mon 09 Jul | 1530 hrs – 1845 hrs | SOE/SOSS Class Rm B1-1 |
| Mon 23 Jul | 1530 hrs – 1845 hrs | SOE/SOSS Class Rm B1-1 |

LESSON PLAN

| | Day | Date | Venue | Theme | Topic | Assessment |
|----|-----|--------|--------------------------|---|---|--|
| 1 | Tue | 03 Jul | SIS CR B1-1 | Smart Healthcare: Outlook and Applications | Overview: What Does Smart Healthcare Look Like? | |
| 2 | Wed | 04 Jul | | | Smart Eldercare | |
| 3 | Thu | 05 Jul | | | Self-Care and Patient Empowerment through Technology | Reflections (10%) |
| 4 | Mon | 09 Jul | NDC and SOE/SOSS CR B1-1 | Smart Healthcare Perspectives from Stakeholders | Designing for Smart Healthcare | |
| 5 | Tue | 10 Jul | KTPH | | Visit to KTPH GeriCare@North and Smart Home Living Labs | |
| 6 | Wed | 11 Jul | SIS CR B1-1 | Technology Landscape for Smart Healthcare | Internet of Things (IoT) for Healthcare | |
| 7 | Thu | 12 Jul | | | Chatbots for Healthcare | Quiz (15%) |
| 8 | | | | | | |
| 9 | Mon | 23 Jul | SIS CR B1-1 | Operationalization Issues, Challenges and Opportunities in Smart Healthcare | Data Analytics for Healthcare | |
| 10 | Tue | 24 Jul | | | Emerging Technologies for Smart Healthcare | |
| 11 | Wed | 25 Jul | | | Operationalization, Financial Models and Ethics | |
| 12 | Thu | 26 Jul | | | Project Presentations | Final Presentation (20%) Final Report (20%) |

*The schedule and content are subject to slight amendments.

Last updated: 03 Jul 2018