COURSE DESCRIPTIONS 科目簡介

COURSES FOR TAUGHT POSTGRADUATE PROGRAMMES

HAM501　　Understanding Public Health and Epidemiology (3 credits)
This course will introduce students to fundamental and advanced concepts, measures and approaches in public health and epidemiology, the study of health and disease in populations. Students will learn about nature and historical perspectives of public health and epidemiology, determinants of health and diseases, epidemiology study design, mapping diseases and health needs, measuring health and diseases, controlling epidemics. The course will provide a foundation for other courses, especially those relating to data analytics in health. It will be delivered through a combination of lectures and seminars.

HAM502　　Policy and Resource Management Issues in Health Systems (3 credits)
In the course, students will be introduced to different kinds of policies relating to healthcare and public health. Students will learn how various types of health data are extracted to shape and inform health policies. The course will border on issues relating to health infrastructure and coverage, health financing, health personnel training and retention, the sustainability of health systems, and health education. The course will be delivered through a series of practitioner seminars. Policy analysts and healthcare professionals will be invited to offer empirical perspectives on policies and the realities of their implementations.

HAM503　　Principles of Data Analytics (3 credits)
With the large volume of data in various domain-specific applications in recent years, it is crucial to interpret and understand data in a scientific way. Data analytics, an essential method for identifying the hidden patterns and critical information from data, have been widely employed due to the rapid development of artificial intelligence and big data analytic techniques in recent years. In this course, students will explore the foundation, principle, methods, and potential applications of data analytics. Specifically, the course will contain four modules, including data models in real life, analytical tools, data extraction, and data visualisation.

HAM504　　Healthcare Operations Management (3 credits)
Healthcare is the maintenance or improvement of health via the prevention, diagnosis, treatment, recovery, or cure of disease, illness, injury, and other physical and mental impairments in people. Operations management is essential for the provision of healthcare services, and it is primarily concerned with the delivery of quality services promptly while controlling costs. This course is designed to introduce the key concepts, practices and tools that have been developed for service operation management with specific applications in the healthcare industry. The course also demonstrates the *how-tos* of analysing, designing and managing a complex healthcare system.

HAM505　　Gerontechnology and Innovation in Health Services (3 credits)
This course is adapted from an existing one offered by GS, *MHM504 Modern Technology in Health and Social Services*. The course is in two parts. In the first part, students will be introduced assistive technologies and equipment for older persons such as telemonitoring, telehealth, assistive, ICT technologies and gerontechnological devices. Students will also be exposed to cutting-edge technologies, such as artificial intelligence (AI) and robotics in health service delivery.

In the second part, students will be trained to use human-centred technology design methods and undertake hands-on experience in assistive technology and automation design such as user experience design, home automation and machine ethics to equip them with skills and knowledge necessary for developing effective healthcare services and products. They will have real-time experience in harvesting and applying big data in decisions about care delivery relating to the maintenance or improvement of the physical and mental health of older persons.

HAM506   Health Analytics and Management Project (from Term 2, 2022-23) / **Health Analytics and Operations Management Project** (in Term 1, 2022-23 or before) **(6 credits)**
(Prerequisite(s): Students must pass all courses in the first term to take this course)
This is a capstone for HAM. The project can be undertaken in three ways. First, students can carry out an empirical research study on any selected topic relating to health analytics and management of health and health service operations in the health sector. In this project, students must gather primary data. Second, students can utilise some of the various analytical techniques and approaches they have learned in the programme to analyse a secondary data in response to a well-defined research question. The final approach shall entail a case study report generated through participation in an internship programme (work- based project) with a relevant entity such as a hospital (including Chinese medicine clinic), a business involved in health service or logistics provision and non- governmental organisations offering healthrelated services. Students must work with their supervisors to select the best option given current circumstances, opportunities available and students' own interest. Working with supervisors, students are expected to independently complete the selected project. Regardless of the format students select, they must clearly demonstrate their knowledge in the application of various quantitative research and [big] data analytic techniques to address a specific research/practice problems in health, health services and related operations management.

HAM507   Understanding Health and Social Care (3 credits)
This course will explore major theoretical debates and practice issues in health and social care. It will enhance the understanding of social aspects and ethical dilemmas in health and care services for people in vulnerable conditions. Upon completing this course, students of the HAOM programme will learn to incorporate social care and services dimensions to their analysis of healthcare operations. The course will be delivered through lectures. The course is adapted from an existing one offered by the GS, *MHM501 Theorising Health and Social Services I*. Unlike the existing course, this one will give attention to the data dimensions and implications in health and social care.

HAM508   Applied Health Psychology in Social Service Settings (3 credits)
Health psychology focuses on the role of psychosocial processes in health promotion and maintenance, illness prevention and treatment, and the relationship between psychosocial factors and physiological processes involved in health and diseases. The course provides a general introduction to the field of health psychology with a focus in the application to social service settings. We will study the biopsychosocial model of health and illness, and examine its contribution to understanding: a) health promotion and illness prevention, b) becoming ill and adopting the sick role, and c) coping with chronic illness. In each domain, we will discuss and critically evaluate the basic research, explanatory theories, and interventions developed or used by health psychologists. Finally, the course enmeshes you in the theory of, techniques for,

and research on how psychology can help people live longer, healthier lives.

HAM509   Sleep, Health, and Everyday Life (3 credits)
Why is sleep so important that we need to spend one-third of our life on this (in)activity? This course will provide a basic introduction to how sleep is regulated and measured, and how sleep changes across the lifespan. The importance of sleep in multiple age groups and in optimising various aspects of health will be discussed. This course will also address how sleep can be improved. Sleep research in Asian societies will be reviewed, where appropriate, to help students understand some of the topics in a local context.

HAM510   Data Analytics in Health and Health Services (3 credits)
The recent advances in information technology have made it more convenient and efficient to collect and analyse various kinds of big data to support decisions on health policies and predictions of human diseases. This course focuses on key technologies and tools that support data-driven smart health service delivery. The course will introduce students to different sources of big data (e.g., surveillance infrastructure and wearable sensors). It will provide multiple cases and examples in real-world to help students better understand conceptual and practical issues related to data structure, how to create and collect data, data storage, data management, and techniques for data descriptions and analyses for health and healthcare. Students will be engaged in statistical programming and health and healthcare data analytics through hands-on activities. In addition, the course will cover the use of Geographic Information System (GIS) to help students answer the question of "where" in health services delivery. GIS has been used extensively in epidemiology study (e.g., disease surveillance) and the healthcare industry (e.g., resource planning). Hands-on GIS tutorials and spatial application examples in public health and healthcare will be introduced and discussed.

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