**Master of Public Health**  
Module Information Cross-faculty Graduate Students  
Semester 2 AY2016/2017

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**CO5201 – Control of Communicable Diseases**  
*Modular Credits: 4*

This module focuses on communicable diseases of public health concern in Singapore and internationally. This course will help students understand prevention, surveillance and control of communicable diseases in industrialised and developing countries. Vector-borne diseases (in particular dengue and malaria), food and water borne diseases, sexually transmitted diseases, airborne diseases and zoonosis will be covered. A special emphasis will be placed on the control of HIV/AIDS (and other STIs), Tuberculosis, dengue and malaria. Tropical diseases targeted for elimination, tropical diseases currently lacking adequate control measures and infectious diseases of poverty and poor hygiene will be discussed. Vector control will be illustrated, including a visit to the Environmental Health Institute. Vaccine preventable diseases both in routine programmes as well as in outbreak situations will be discussed. Outbreak investigations will be simulated and pandemic preparedness outlined. Students will read, critically appraise and discuss the application of current control strategies. They will identify a relevant infectious disease of public health concern and prepare a proposal for a public health intervention. This course will help students prepare for work in communicable diseases in local and international governmental and non-governmental organisations.

**CO5204 – Health Economics and Financing**  
*Modular Credits: 4*

This module addresses the economic and financing aspects of the production, distribution, and organization of health care services and delivery. This includes the structure of health care delivery and insurance markets, demand for and supply of health services, pricing of services, cost of care, financing mechanisms, and their impact on the relevant markets. A special emphasis will be given to market failures and the role of government in the market for health services. Through text book readings and discussions of seminal articles and more recent empirical applications in health economics, students will learn the economic way of thinking. They will be given the opportunity to showcase these skills through a series of research papers written throughout the semester that will culminate with a final manuscript that provides an in-depth analysis of a critical health issue.

**CO5205 – Management of Healthcare Organisations**  
*Modular Credits: 4*

This practitioner-led module which is targeted at participants with basic background in management (either through academic study or practice) equips participants with management skills needed for managing healthcare organisations. Teaching will be through lectures, group activities and panel discussions and there will be significant emphasis on the case study method. Participants will be expected to actively share their experiences and learn collectively. Topics covered will include leadership in the healthcare setting, strategy and planning for healthcare, human resource management and development, communications, marketing and branding, finance, operations, information and quality management (including accreditation, use of score cards and benchmarking).

*Remarks: Although conducted outside office hours (Thursday evenings), site visits will be organised during office hours to enable participants to see first-hand ‘Management of Healthcare Organisations’ and learn from leading edge practitioners.*

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Date: 30 Nov 2016
CO5208 – Measuring and Managing Quality of Care  
*Modular Credits: 4*

This module provides an introduction to the concepts and techniques used to measure and improve the quality of healthcare. It will address current concerns with patient safety and medical errors, and explore systemic approaches to harm reduction. Participants will understand the methodologies and instruments for the measurement of quality in healthcare, including clinical outcome indicators, healthcare professionals’ performance measurement and patient satisfaction surveys. Strategies for managing quality, including the tools for continuous quality improvement in healthcare organizations, will be presented.

CO5209 – Control of Non-Communicable Diseases  
*Modular Credits: 4*

In this module, the public health approach to non-communicable disease control will be illustrated using a matrix, which integrates epidemiological parameters (i.e. risk factors, prevention, surveillance) with the main non-communicable diseases (i.e. cardiovascular disease, cancer, mental illness, chronic respiratory disease, diabetes mellitus, Alzheimer’s disease and congenital and childhood diseases). In addition, current issues, such as genetics and ethics, will be highlighted in relation to control of non-communicable diseases. The students will read, critically appraise and discuss the application of some relevant epidemiological studies. Finally, they will perform a literature search to identify an important and relevant public health concern and prepare a proposal for a public health intervention.

CO5214 – Introduction to Health Services Research  
*Modular Credits: 4*

*Pre-requisites: CO5102 and CO5103*

This module will enable public health and clinical researchers to critically evaluate the health outcomes and cost-effectiveness of interventions and healthcare programmes. It will provide a foundation for collecting, analysing and interpreting data that influences decision-making and resource allocation at both institutional and national level. The course will integrate elements of epidemiology, statistics, health economics, and incorporate a diverse range of important subjects including survey methods, decision analysis, and cost effectiveness analysis. Students will also be taught to design their own studies in health services research.

CO5215 – Advanced Epidemiology I  
*Modular Credits: 4*

*Pre-requisites: CO5102 and CO5103*

This module covers advanced methods for the design, conduct, analysis and interpretation of epidemiologic studies. The main focus is on analytical studies that aim to identify risk factors for diseases particularly case-control and cohort studies. Topics include causal inference, study design, methods of handling confounding and identifying effect modification, measurement error and information bias, selection bias, lifestyle and molecular epidemiology, and meta-analysis.

CO5218 – Advanced Quantitative Methods I  
*Modular Credits: 4*

*Pre-requisite: a minimum grade 'B-' obtained in CO5103 and working knowledge of STATA*

In this module, the principles of statistical modelling will be introduced, and statistical models such as multiple linear regression, logistic regression and Cox proportional hazards model will be applied to a variety of practical medical problems. Methods for analysing repeated measures data, assessment of model fit, statistical handling of confounding and statistical evaluation of effect modification will also be discussed.
CO5220 – Design, Conduct and Analysis of Clinical Trials
Modular Credits: 4
Pre-requisites: CO5102 and CO5103
In this module, issues in clinical trials, including blinding randomisation, sample size, power, ethical, regulatory, and quality-of-life issues will be addressed. Interim and sequential analyses, analysis of multiple treatments and endpoints, stratification and subgroup analyses, as well as meta-analysis of randomized controlled trials will also be discussed. Although particular emphasis is given to the evaluation of treatment in Phase III clinical trials, early phase trials studies will also be covered.

CO5232 Collection, Management & Analysis of Quantitative Data
Modular Credits: 4
This module is an introduction to management and data analysis of quantitative surveys in public health research, with strong emphasis on acquiring hands-on experience for handling public health data with the STATA software. It will cover essential concepts such as sampling and design of questionnaires as well as practical components such as data storage, management, and basic statistical analysis of the questionnaire data.

Remarks: Students who have previously taken “CO5224 Data Collection in Public Health” are not allowed to take this module.

CO5233 Qualitative methods in Public Health
Modular Credits: 4
Qualitative methods in Public Health will familiarize students with the range of related data collection and analytic methods, as well as ethical considerations and ways to best communicate this approach. Students will learn practical techniques to improve the quality of data collection, including: In depth interviews, focus groups and observational methods. We will also explore lesser-known approaches such as using photo voice or how to ‘walk through spaces’. Emphasis will be given to data management and transparency in analyses, the best ways of doing these, using practical policy relevant methods. In addition, ways of presenting methods, clearly, concisely and creatively. Critical appraisal of the method and its application in mixed methods designs will also be considered.

Remarks: Students who have previously taken “CO5224 Data Collection in Public Health” are not allowed to take this module.
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CO5234 Develop health proposals: DME skills, tools, approaches
(formerly named ‘CO5880G – Design, Monitoring and Evaluation of Health Programmes’)
Modular Credits: 4
Two of the most important skills that public health practitioners need to develop are program design and proposal writing. These two skills are inseparably linked: they are two sides of the same coin. A poorly designed project or program will have very little chance of successfully competing for funds, while an innovative, well-conceived project will never get funded unless it gets written into a good proposal. A good program design in a good proposal can lead to better implementation and management, and sets the stage for good monitoring and evaluation. In turn, a project executed well has better chances for re-funding and expansion by donors. This skills building DME course is designed to introduce the potential proposal writer to the working environment that he will eventually confront repeatedly. It requires living through the process of applying good principles of program/project design in developing a proposal. This is a shortened schedule closely simulating reality

Remarks:
- This module was previously named ‘CO5880G – Design, Monitoring and Evaluation of Health Programmes’.
- Students who have previously read ‘CO5880G – Design, Monitoring and Evaluation of Health Programmes’ are not allowed to take CO5234
- It is recommended that students have completed CO5102 Principles of Epidemiology and CO5103 Quantitative Epidemiologic Methods prior to reading this module

CO5235 – Information Technology in Healthcare
Modular Credits: 4
Students will learn about use of Information Technology in Singapore healthcare. They will gain knowledge and skills on managing IT projects in their workplace, learn about key considerations for IT project success, and be able to conduct a basic evaluation of healthcare IT products.

CO5236 – Economic Methods in Health Technology Assessment
Modular Credits: 4
This course aims to provide an applied introduction to Health Technology Assessment (HTA) research in order to enable students to begin conducting their own research and/or to understand research conducted by others. Health econometrics, cost-effectiveness and economic evaluation in healthcare, and conjoint analysis will be covered. Examples of economic analyses that have been used in all stages of HTA research, starting with quantifying economic burden of illness studies, to cost-effectiveness of particular health technologies, to budget impact and pricing will be included. Prior knowledge of basic statistics is recommended.

CO5237 – Healthcare Analytics
Modular Credits: 4
This module will cover major topics in healthcare analytics, including clinical related analytics (diseases, medication, laboratory test, etc.) and healthcare operations related analytics (resource planning/scheduling, care process analytics and improvement, admission and readmission, etc.). Students will learn the insights of these different healthcare analytics areas, and how to select the right analytics techniques for these healthcare analytics problems.
**COS312 – Occupational Ergonomics**  
*Modular Credits: 4*

This module covers both ergonomics/human factors and basic work physiology. It emphasizes the practical aspects of how to fit the worker to the job and how to fit the job to the worker and the need for a multifactorial approach to the study of ergonomics/human factors. The basic principles of human, work and environmental factors related to occupational disease and work related illness will be discussed. Common issues related to work and stress, work and performance will also be covered in the lectures. Workplace assessments will also be performed to evaluate various ergonomic factors. In addition to lectures and tutorials, case studies from industry will also be discussed.

**SPH6004 Advanced Biostatistics**  
*Modular Credits: 4*

*Pre-requisites: Students interested in this module should have background in Statistics.*

This module will introduce several advanced topics for analysing large or complex datasets, with a particular emphasis on biomedical and epidemiological data. Classical strategies for statistical inference, variable selection and model assessment are less efficient when the dimension of the dataset is large. This module will introduce Bayesian techniques and multivariate data analysis in an applied framework that combines both computing and theory, and also overviews the problem of multiple testing correction common in, for example, genomics and proteomics studies.

*Remarks: Students interested in this module should have background in Statistics.*
The programme reserves the right not to offer a module if the number of MPH students taking it for credit is fewer than 10.

Cross-faculty graduate students who intend to read the MPH modules are to take note of the following:

a. Applications should be submitted by **22 Dec 2016, Thursday, 11.59pm** by submitting the cross faculty module registration form through your home faculty (the form can be obtained from your home faculty’s administrator).

b. Each student is allowed to read for credit a maximum of 4 MCs of MPH module per semester; with the exception of YLLSOM students on relevant graduate programmes; and subject to home faculty's policies.

c. Please state if you have met the pre-requisites (if any)

d. Please submit your CV together with your application.

e. All applications are subject to approval and the programme does not guarantee a place in the module requested for.