

## **REGULATIONS FOR THE POSTGRADUATE CERTIFICATE IN PUBLIC HEALTH (PCPH)**

*(See also General Regulations)*

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### **M113 Admission requirements**

To be eligible for admission to the programme leading to the Postgraduate Certificate in Public Health, a candidate shall:

- (a) comply with the General Regulations;
  - (b) hold a Bachelor's degree with honours or the degrees of MBBS of this University, or another qualification of equivalent standard from this University or from another University or comparable institution accepted for this purpose; and
  - (c) satisfy the examiners in a qualifying examination, if required.
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### **M114 Qualifying examination**

- (a) A qualifying examination may be set to test the candidate's formal academic ability or his/her ability to follow the courses of study prescribed. It shall consist of one or more written papers or their equivalent and may include a project report.
  - (b) A candidate who is required to satisfy the examiners in a qualifying examination shall not be permitted to register until he or she has satisfied the examiners in the examination.
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### **M115 Award of certificate**

To be eligible for the award of the Postgraduate Certificate in Public Health, a candidate shall:

- (a) comply with the General Regulations; and
  - (b) complete the curriculum and satisfy the examiners in accordance with the regulations set out below.
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### **M116 Length of curriculum**

The curriculum shall normally extend over one academic year of part-time study with a minimum of 100 hours of prescribed work.

Holders of the Postgraduate Certificate in Public Health may apply for admission to the Master of Public Health programme after a break of at least one year and not more than five years from graduating from the PCPH programme.

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### **M117 Completion of curriculum**

To complete the curriculum, a candidate shall:

- (a) follow courses of instruction as prescribed in the syllabus and complete satisfactorily all required written, practical and/or clinical work; and

- (b) satisfy the examiners in the modules by continuous assessments and/or written examinations.

A candidate who fails to fulfil the requirements within the prescribed maximum period of study shall be recommended for discontinuation under the provision of General Regulation G12, except that a candidate who is unable because of illness or circumstances beyond his/her control to complete the requirements within the prescribed maximum period of study, may apply to the Board of Studies for permission to extend his/her period of study.

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### **M118 Module selection**

Selection of modules shall be made within the curriculum structure delineated for each concentration, in consultation with the taught course co-ordinator and subject to the approval of the Board of Studies.

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### **M119 Examinations**

- (a) A candidate who has failed to satisfy the examiners in a module may be permitted:
    - (i) to attend a supplementary examination; or
    - (ii) to re-take the concentration module and the prescribed examination(s); or
    - (iii) to enrol in another module in lieu if the failed module is not a core module.
  - (b) A candidate who is not permitted to present himself/herself for re-examination in any module(s) in which he/she has failed to satisfy the examiners shall be recommended for discontinuation of studies under General Regulation G12.
  - (c) A candidate who has failed to satisfy the examiners in a second attempt in the module(s) shall be recommended for discontinuation of studies under the provisions of General Regulation G12.
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### **M120 Examination results**

At the conclusion of the examination a pass list shall be published. A distinction may be awarded to a candidate who has demonstrated outstanding performance in the programme.

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**SYLLABUSES FOR THE  
POSTGRADUATE CERTIFICATE IN PUBLIC HEALTH  
(PCPH)**

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Candidates are required to choose one of the four **Areas of Concentration**:

- a) Public Health Practice (PHP)
- b) Epidemiology and Biostatistics (EB)
- c) Infectious Diseases (ID)
- d) Health Economics, Policy and Management (HEPM)

**Concentration 1: Public Health Practice (PHP)**

Candidates must enrol in CMED6200 Introduction to epidemiology and CMED6201 Principles of public health and choose **3** modules from the PHP concentration modules listed below.

Public Health Practice (PHP) concentration modules	
CMED6104	Emerging infectious diseases: ecology, evolution and multi-host transmission dynamics
CMED6912	Environmental health hazards and interventions
CMED6204	Health and society
CMED6900	Health policy and politics
CMED6219	Health communication
CMED6902	Health economics for public health
CMED6206	Health promotion and health education
CMED6218	Human health: futures in a globalized world
CMED6216	Introductory public health genomics
CMED6224	Practicum
CMED6704	Psychosocial issues in health and illness
CMED6217	Qualitative health research
CMED6208	Risk: perception, decisions and communication
CMED6202	The practice of public health

**Concentration 2: Epidemiology and Biostatistics (EB)**

Candidates must enrol in CMED6200 Introduction to epidemiology and CMED6100 Introduction to biostatistics and choose **3** modules from the EB concentration modules listed below.

Epidemiology and Biostatistics (EB) concentration modules	
CMED6401	Advanced clinical epidemiology and decision analysis
CMED6030	Advanced epidemiological methods
CMED6020	Advanced statistical methods I – experimental and quasi experimental designs and data analysis
CMED6040	Advanced statistical methods II – analysis of complex data
CMED6913	Environmental health assessments
CMED6400	Evidence-based practice: an introduction to clinical epidemiology and decision analysis
CMED6211	Infectious disease epidemiology
CMED6203	Measurement in health

### Concentration 3: Infectious Diseases (ID)

Candidates must enrol in CMED6100 Introduction to biostatistics and CMED6200 Introduction to epidemiology and choose **3** modules from the ID concentration modules listed below.

Infectious Diseases (ID) concentration modules	
CMED6030	Advanced epidemiological methods
CMED6020	Advanced statistical methods I – experimental and quasi experimental designs and data analysis
CMED6040	Advanced statistical methods II – analysis of complex data
CMED6104	Emerging infectious diseases: ecology, evolution and multi-host transmission dynamics
CMED6215	Historical and contemporary perspectives of infectious diseases
CMED6211	Infectious disease epidemiology
CMED6210	Infectious disease modelling
CMED6105	Infectious diseases in public health
CMED6208	Risk: perception, decisions and communication

Candidates registered in this concentration **may** choose the modules listed below which are offered by the HKU-Pasteur Research Pole.

CMED6107	HKU-Pasteur Immunology (equivalent to two modules)
CMED6106	HKU-Pasteur Virology (equivalent to two modules)

Doctors registered in this concentration **may** choose the equivalent of 1 module from the modules listed below which are offered by the Carol Yu Centre for Infection.

MICR6903	Common problems in infectious diseases (equivalent to 0.5 module)
MICR6904	Infections in immunocompromised hosts (equivalent to 0.5 module)
MICR6905	Infectious disease emergencies (equivalent to 0.5 module)
MICR6901	Infectious disease rounds (equivalent to 0.5 module)

### Concentration 4: Health Economics, Policy and Management (HEPM)

Candidates must choose **5** modules from the HEPM concentration modules listed below.

Health Economics, Policy and Management (HEPM) concentration modules	
CMED6401	Advanced clinical epidemiology and decision analysis
CMED6909	Comparative health systems: Hong Kong and US
CMED6906	Financial management of healthcare organisation
CMED6204	Health and society
CMED6902	Health economics for public health
CMED6220	Health informatics
CMED6900	Health policy and politics
CMED6911	Human resources (HR) in healthcare organisations
CMED6907	Perspectives in healthcare management
CMED6916	Practice management for private medical practices
CMED6901	Principles of healthcare management
CMED6221	Public health law and ethics
CMED6915	Public health leadership
CMED6903	Resources for health
CMED6910	Strategic management in healthcare

## MODULE LIST

### **CMED6401    Advanced clinical epidemiology and decision analysis (20 hours)**

This is an intermediate/advanced-level module on methods of clinical epidemiology and decision science. It covers the techniques and growing range of applications of decision analysis and cost effectiveness analysis in health care technology assessment, health policy analysis, medical decision making, and health resource allocation. Students will learn to apply methods that are currently used at the frontiers of clinical epidemiology and decision science research in clinical and public health settings. While the primary emphasis is not mathematical theory, a certain amount of theoretical background is presented for each topic.

Pre-requisite: (i) CMED6200 Introduction to epidemiology, (ii) CMED6100 Introduction to biostatistics and (iii) CMED6400 Evidence-based practice: an introduction to clinical epidemiology and decision analysis

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### **CMED6030    Advanced epidemiological methods (20 hours)**

The overarching conceptual framework for this course centres on the counterfactual definition of a cause, specifically how this definition is incorporated into observational study design, analysis and interpretation of results, and ultimately our ability to make causal inference. This course will consider how directed acyclic graphs, mediation analysis, structural equation modelling, multi-level models and different study designs, including Mendelian randomization, can be applied to the pursuit of making valid causal inferences in epidemiology. It will also consider sources of bias and their potential impact.

Pre-requisite: CMED6200 Introduction to epidemiology

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### **CMED6050    Advanced epidemiological methods II (20 hours)**

This course will provide an in depth investigation of statistical methods for drawing causal inferences from observational studies. Informal epidemiologic concepts such as confounding, comparability, intermediate variables, total effects, controlled direct effects, natural direct and indirect effects for mediation analysis, and selection bias will be formally defined within the context of a counterfactual causal model. Methods for estimating a total causal effect in the context of a point exposure will be discussed, including regression methods, propensity score techniques and instrumental variable techniques for continuous, discrete or binary outcome. Mediation analysis will be discussed from a counterfactual perspective, which methods for making inferences about the joint effects of time-varying exposures in the presence of time dependent covariates that are simultaneously confounders and intermediate variables will be emphasized. These methods include g-estimation of structural nested models, inverse probability weighted estimators of marginal structural models, and g-computation algorithm estimators. As a practical, students will reanalyze data sets using the above methods.

Pre-requisite: (i) CMED6200 Introduction to epidemiology and (ii) CMED6030 Advanced epidemiological methods

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### **CMED6020    Advanced statistical methods I – experimental and quasi experimental designs and data analysis (20 hours)**

This course will provide a practical overview of commonly used biostatistical methods, building on the basic methods introduced in CMED 6100. This course covers ANOVA, generalized linear models, factor analysis, instrumental variable analysis and aspects of trial design. The software package SPSS will be used. Tutorials will cover the practical application of methods on real datasets.

Pre-requisite: CMED6100 Introduction to biostatistics

### **CMED6040    Advanced statistical methods II – analysis of complex data (20 hours)**

This course will provide a basic, yet thorough introduction to the probability theory and mathematical statistics that underlie many of the commonly used techniques in public health research. The frequentist and Bayesian approaches to parameter estimation, interval estimation and hypothesis testing will be compared and contrasted. The open-source software package stata/ R will be introduced, and used to perform analyses. R also includes a powerful graphics engine which will be used to produce publication-quality figures. All theoretical material will be motivated with problems from epidemiology and public health.

Pre-requisite: CMED6100 Introduction to biostatistics

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### **MICR6903    Common problems in infectious diseases (10 hours)**

The practice of clinical infectious diseases depends on the support and proficiency in four major areas: (1) clinical knowledge and skill including routine laboratory investigations; (2) organ imaging; (3) diagnostic microbiological; and (4) histological examination of tissue biopsies. History, physical examination, and preliminary test would usually lead to the formulation of a clinical diagnosis of a possible infectious process. The clinical symptoms and signs will also provide clues in the localization of the focus of infection so that relevant clinical specimens are taken for microbiological examinations. This course will review the above issues. Students should visit <http://www.hku.hk/hkucoi/> for the latest update.

Pre-requisite: Registered medical doctors

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### **CMED6909    Comparative health systems: Hong Kong and US (20 hours)**

The major aim of this course is to provide a comparative view of aging, public health, and allopathic, traditional and complementary treatment in Hong Kong and The United States within the perspectives of nursing, medicine, and interdisciplinary collaboration. Classroom experiences are designed – both in the U.S. and in H.K. – to build knowledge of how the U.S. and H.K. compare in demographics and aging; health, disease, and illness; and health care treatment from prevention through rehabilitation and palliation. Collaboration between nurses and physicians is emphasized throughout the course, in interaction with the faculty team, in home seminars and clinical observations, and in the seminars and clinical observations in Hong Kong. Clinical experiences include observation in a collaborative practice in the U.S. and in a variety of settings across the SAR of Hong Kong. All of these experiences will be reflected against the student's broader knowledge of the U.S. health care system and care delivery settings but do not require specific clinical background to achieve the objective of the course.

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### **CMED6104    Emerging infectious diseases: ecology, evolution and multi-host transmission dynamics (20 hours)**

Most human communicable diseases originally arose from inter-species transmission from animals. There is an emerging consensus that a "One Health" approach that unifies animal and human health is needed to address future emerging infectious disease threats. The factors that contribute to emergence of such disease and of zoonotic disease include environmental, ecological, societal, microbial and host factors. This module is designed for postgraduate students of the Faculty of Medicine who require a good understanding of the factors that contribute to infectious disease emergence with a view to prevention and control. The learning will be facilitated by student reading assignments followed by presentation and discussion with others in the class.

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**CMED6913 Environmental health assessments (20 hours)**

This course aims to provide a broad overview on methods of assessment on environmental health impacts. It covers measurement and analysis of different types of exposure commonly found in daily activities. It also covers on the effect modification of socio-demographic, lifestyle and other environment factors. Student will obtain hands-on experience in analyzing environment and health data using a statistical software.

Pre-requisite: CMED6912 Environmental health hazards and interventions or equivalent

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**CMED6912 Environmental health hazards and interventions (20 hours)**

This module broadly covers health risks due to various environmental hazards including indoor and outdoor air pollution, water and food contaminants, noise, radiation, environmental disasters, climate changes, urbanization and toxic organic chemicals. It also covers issues on livability, environmental health policy, environmental justice, risk information and communication. The theory of epidemiological and toxicological effects and implication in public health intervention and policy formulation will be introduced. Some real examples are used and to be guided by guest speakers. In each teaching session, students are provided with a set of reading materials and with questions for small group discussion. Assessment will be based on in-course performance and individual project.

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**CMED6400 Evidence-based practice: an introduction to clinical epidemiology and decision analysis (20 hours)**

Information Mastery: A Practical Approach to Evidence-Based Medicine for Clinicians and Managers. Is it True? Evaluating Research about Therapy. Clinical Jazz: Harmonizing Clinical Experience and EBM. Don't Panic: Basic Statistics You Can Understand. Using "Medical Poetry": Is it Possible to both Improve Health Care Quality and Reduce Costs? Evaluating "Foraging Tools" for Keeping Up with New, Relevant, and Valid Information. Is it True? Evaluating Research about Diagnostic Tests. The Case of Baby Jeff. Taking the Right STEPS to Avoid Fallacies of Decision-Making. Is it True? Evaluating Research about Prognosis. Evaluating Conventional Information Sources (Consultants, CME, and Reviews). Is it True? Evaluating Medical Reviews. Is it True? Evaluating Practice Guidelines. The Information Pyramid: Obtaining Useful Information from Secondary Sources. Is the Best Evidence Getting Into Practice: The Case of Type 2 Diabetes. Hints and Tips for Practicing and Teaching EBM via IM. Wrap Up/Clinical Jazz. Evaluation of personal and program performance.

Pre-requisite: CMED6200 Introduction to epidemiology

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**CMED6906 Financial management of healthcare organisation (20 hours)**

This course builds on CMED 6910 Strategic management in healthcare, and introduces the use of financial information to inform strategic decision making, and covers topics such as financing of healthcare services, role of internal/ external audit, role of director of finance, corporate governance, strategic and business planning. This course is designed for students with prior working experience in healthcare industry and requires in-class discussions.

Pre-requisite: (i) CMED6910 Strategic management in healthcare or (ii) Previous healthcare work experience

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**CMED6204 Health and society (20 hours)**

This module provides an overview of the field of the social determinants of health, and will focus on the theories, measurement tools, and analytical methods for investigating the causal influence of social contexts and social variables on population health. By the end of the course, student will be familiar with basic concepts in the field, including the prevention paradox and the two strategies of prevention; the measurement of socio-economic status (SES) and the mechanisms of its association with health outcomes; absolute vs. relative concepts of poverty; compositional vs. contextual influences of neighborhood environments on health; the measurement of social networks, social support, and social capital, and how each concept is related to health; the demands/control model of job stress; and policies to tackle social inequalities in health.

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**CMED6219 Health communication (20 hours)**

Covers the development of public communication campaigns in the field of health promotion: assessing what the mass media can accomplish to promote health; designing mass media messages that are consonant with principles of behavioral science and the public health model; and strategic planning for integrated mass media campaigns.

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**CMED6902 Health economics for public health (20 hours)**

This module introduces basic health economic concepts to health care professionals. Topics include scarcity, supply and demand, rationing mechanisms, economic evaluation and evidence-based decision-making. The module emphasizes the uses and limitations of the economic approach in health care, with applications in medicine, nursing, other health-related professions and health promotion.

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**CMED6220 Health informatics (20 hours)**

This course, which for many students is the first course in the informatics sequence, focuses on the history of health care informatics, basic informatics concepts, and health information management applications. You will progress along a continuum: from developing knowledge and understanding of basic concepts and methods of health care informatics (objectives 1, 2, 3); to learning about specific information management applications in health care administration, practice, education and research (objective 4); and finally to a hands-on experience with a specific application of your own choosing (objective 5).

Pre-requisite: Familiarity with or interest in computer systems and networking

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**CMED6900 Health policy and politics (20 hours)**

This course begins by introducing core macroeconomic and political theories to understand and assess national or regional health systems. Based on these theoretical considerations and empirical observations from the field, students are led through a survey of system typologies from around the world. The concept of “control knobs” is then deployed to translate theoretical appreciation into real world application. Finally students are given the opportunity to undertake a self-directed simulation exercise on a prevailing policy topic in the Hong Kong or mainland Chinese setting.



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**CMED6206 Health promotion and health education (20 hours)**

This course will be organized into two sections. The first section will provide students with a broad definition and understanding of health and health promotion at the individual, small group, community, and societal levels. Students will examine different theoretical models for health promotion in terms of their different aims, methods, and means of evaluation. A major emphasis is to critically examine the influences of socioeconomic environment on health and health promotion. The second section will focus on identifying and analyzing opportunities for and barriers to promoting health and wellness among individuals and populations. Students will assess and evaluate a variety of approaches and actions that form the basis of a strategic operation for promoting individual and populations' health.

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**CMED6215 Historical and contemporary perspectives of infectious diseases (20 hours)**

History and evolution of infectious diseases; Causal agents in infectious diseases; Quarantine and other public health measures to protect populations; Risk communication and risk perception; Politics, health and social attitudes; Significance of infectious disease in an Asian context.

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**CMED6107 HKU-Pasteur Immunology (40 hours)**

The principal objective of the HKU-Pasteur course is to provide advanced training to a small, selected number of international students at the Master/MPhil and early PhD level in an interactive classroom setting. It is composed of lectures given by internationally renowned scientists, of workshops/round tables supervised by junior faculty members, and of practical sessions organized together with local and/or invited teams. The Immunology course will focus each year on a different topic, including innate immunity, inflammation, mucosal immunity, vaccination, adaptive immunity. Special emphasis is placed on diseases that represent a threat to public health in this region. Students will work in pairs to stimulate interactions and collegial attitudes and will be able to exchange ideas with worldwide top-level scientists.

Pre-requisite: A Bachelor of Science degree in biology or immunology or equivalent

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**CMED6106 HKU-Pasteur Virology (40 hours)**

The principal objective of the HKU-Pasteur Virology course is to train a small, selected number of international students at the Master/MPhil and early PhD level in an interactive classroom setting. It features lectures given by internationally renowned scientists, workshops/round tables supervised by junior faculty members, and included practical sessions organized together with local and/or invited teams. Each year the course focuses on a different set of viruses/diseases that are relevant for public health in Asia and worldwide. Topics include: epidemiology, molecular and cellular biology of viruses; virus/host molecular interactions; pathogenetic mechanisms, prevention strategies against viral diseases and therapeutical approaches. Students will work in pairs to stimulate interactions and collegial attitudes and will be able to exchange ideas with worldwide top-level scientists.

Pre-requisite: A Bachelor of Science degree in biology or immunology or equivalent

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**CMED6218 Human health: futures in a globalized world (20 hours)**

The "big picture" module has as its focus the implications for the next 25 years. It will analyse globalization, economics, resource depletion, food and agricultural issues, population change, and societal reactions, and climatological impacts from current patterns of human population behaviour within an ecological systems-based perspective to infer likely futures and their health implications. In

particular, we will examine current trends and models to attempt to estimate emerging public health issues and hazards linked to these.

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#### **CMED6911 Human resources (HR) in health care organizations (20 hours)**

This module provides an overview of HR issues in health care. Through individual case studies, group assignments and presentations, by the end of the course, students should have developed a basic understanding of HR principles, how they are applied in health care organizations and the consequent impact on patient care. Topics covered will include, among others, manpower planning and recruitment, staff motivation and performance, leadership and teamwork.

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#### **MICR6904 Infections in immunocompromised hosts (10 hours)**

Infectious disease is as old as the history of mankind. Yet the systematic study of infectious diseases is relatively recent. The importance of the classical contagious and communicable diseases dwindled in the developed world, mainly because of improvements in public health measures. The spectrum of infection in many parts of the world has now been replaced by a predominance of hospital-acquired infections and infection in immunocompromised hosts, a “side effect” of our advances in the management of various diseases like malignancies and autoimmune diseases. In this course, we focus on the approach to infections in patients suffering from an impaired immune system, either as a result of the underlying illness or due to the effects of various therapeutic modalities. Antimicrobial therapy alone often does not completely control the infection or its damages, other means to modulate the immune system are sometimes necessary in order to effect a cure. This latter aspect is also looked into in this course. Students should visit <http://www.hku.hk/hkucoi/> for the latest update.

Pre-requisite: Registered medical doctors

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#### **MICR6905 Infectious disease emergencies (10 hours)**

Advances in medicine have brought with it an increased expectation from patients. Missing an infectious disease emergency is almost considered a sin because of its generally treatable nature and complete recovery is expected if the correct diagnosis and treatment is given at the early stage. One of the important advances in medical service is the implantation of indwelling medical devices for supplementing functions of vital organs or fulfilling the locomotive functions. However, such therapeutic measures are associated with a significant amount of complication from infection which by itself is life-threatening and at the very least, debilitating. Infectious disease emergencies and indwelling medical device-related infections could present in almost any patient group within any medical specialties. It is therefore timely for the course to review these two topics. Students should visit <http://www.hku.hk/hkucoi/> for the latest update.

Pre-requisite: Registered medical doctors

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#### **CMED6211 Infectious disease epidemiology (20 hours)**

This module clearly explains fundamental concepts of infectious disease epidemiology and sets out the analytical methods employed in public health practice. The contents of the lecture series covers the concept/definition of various epidemiological measurements, assessment of the spread and control of infectious diseases using a variety of statistical methods, statistical estimation of key epidemiological indices, and introduces mathematical modeling of infectious diseases. This vast and important area of epidemiology is described in line with recent and ongoing health concerns such as HIV/AIDS, tuberculosis, malaria, dengue, SARS and influenza.

Pre-requisite: (i) CMED6020 Advanced statistical methods I – experimental and quasi experimental designs and data analysis and (ii) CMED6100 Introduction to biostatistics

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**CMED6210 Infectious disease modelling (20 hours)**

The course will build on CMED 6211 by extending student's understanding of transmission-dynamic models of infectious disease and also giving an in-depth description of the real world systems used to monitor incidence and prevalence of infectious disease.

Pre-requisite: (i) CMED6211 Infectious disease epidemiology and (ii) Familiarity with Excel

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**MICR6901 Infectious disease rounds (10 hours)**

The gold standard for the testing of medical knowledge is its predictability of patients' outcome at the bedside. Despite the importance of large studies such as randomized controlled trials in the literature, case reports have always played a unique role in education and the initiation of break-through research. This course strives to use an interactive approach in the learning process by case presentation before a literature review. These cases include genitourinary infections, common problems with atypical presentation and rare problems with an unbelievably simple solution. Students should visit <http://www.hku.hk/hkucoi/> for the latest update.

Pre-requisite: Registered medical doctors

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**CMED6105 Infectious diseases in public health (20 hours)**

Infectious diseases are of major public health concern. This module is designed for postgraduate students in the Faculty of Medicine who are interested in studying microbiology from a public health point of view. This module covers basic microbiology, common infectious diseases in community and healthcare settings, and provides the biological basis for the methods used for prevention and control of communicable diseases. This module has a strong emphasis on the practical aspects of infectious disease surveillance and is important to those who are working or pursue their career in the fields of epidemiological investigations, public health surveillance, and other public health responses that are related to microbial infections.

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**CMED6100 Introduction to biostatistics (20 hours)**

Biostatistics concerns the collection, analysis, interpretation and presentation of biological data. Specific applications include epidemiology, clinical trials and public health. This module covers descriptive statistics and elementary probability, and introduces basic topics in inferential biostatistics, including regression, confidence intervals and hypothesis tests. The module is designed for postgraduate students in the Faculty of Medicine who require elementary skills in biostatistics to complete their projects and dissertations; therefore the primary focus of the course is on the practical use and interpretation of statistical methods.

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**CMED6200 Introduction to epidemiology (20 hours)**

Epidemiology is the study of the occurrence and distribution of illness in a population, the causes and determinants of illnesses and diseases, and the application of this knowledge to control health problems at the community level. This module introduces the basic concepts and approaches used in epidemiologic research, and serves as a prerequisite for several other courses.

The topics covered in this module include (1) Approaches to measuring the occurrence and distribution of illness in populations; (2) Design and interpretation of epidemiologic studies to identify

the determinants and causes of illness; (3) Estimation of the impact of control measures at the community-level.

This module is lecture-based and supplemented with optional tutorials to support learning.

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### **CMED6216    Introductory public health genomics (20 hours)**

Genetics is the study of variation in the genome, its inheritance, and its contribution to health and disease. Public health genetics focuses on the public health implications of advances in genetic and molecular science for preventing disease and for protecting and improving the health of the population. The curriculum will be centered on an understanding how genetic and environmental factors work together in determining disease susceptibility in individuals and populations. It will also address the implications of these developments for health services, and the ethical, legal, cultural, economic and policy issues involved in applying genomics to public health.

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### **CMED6203    Measurement in health (20 hours)**

Measuring health status is central to health services research and clinical trials; this course examines the basic science of health measurement. The measures include evaluative instruments, screening tools, clinician rating scales and self-report health indicators. The course does not cover laboratory (biochemical or physiological) methods, nor measures for molecular epidemiology; nor does it cover measures of environmental factors.

The course will review existing measurement methods and discuss the theoretical aspects of health measurement. Students will learn about empirical validity analyses of an existing instrument (but will not actually run such analyses) and the course will review the process of developing an instrument where a suitable one does not already exist.

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### **CMED6907    Perspectives in healthcare management (20 hours)**

The module aims to stimulate concerns about important problems and issues facing health administration at both global and local levels, and to provide a comprehensive look at public health management and administration. Students will explore the characteristics, contemporary issues and controversies of health administration. Various theories and concepts in administrative science regarding strategic planning, governance and accountability, quality and risk management, human resources management, information management and leadership will be appraised and applied in the practice of administrative medicine. Students will also compare and contrast and evaluate cases in different health systems (e.g. Hong Kong, US, UK, China), as well as formulate solutions to problems in healthcare administration.

Pre-requisite: (i) CMED6901 Principles of healthcare management or (ii) Previous healthcare work experience

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### **CMED6916    Practice management for private medical practices (20 hours)**

This module seeks to build on students' own experiences and knowledge of health care provision and health care systems. This is an applied course where students will work in small groups to 1) develop a critical understanding of health care management problem, 2) develop ideas and proposals about how these might be resolved, and 3) determine the intended and unintended consequences of actions taken by managers. Health provision and health care systems are understood both from a population

perspective of health care provision (including the social determinants of health) as well as the more 'local' provision of service in the public and private sector.

Pre-requisite: (i) CMED6901 Principles of healthcare management or (ii) Previous healthcare work experience

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### **CMED6224 Practicum (42 hours)**

The practicum aims to prepare students with a broad mastery of subjects and methods necessary for the field of public health practice, bridging theory and practice. The recommended standard is a minimum of 42 hours. Students will gain relevant practical public health experience by completing an 8-12 week community based work placement in a local Department of Health clinic or unit, a local or regional hospital, Food and Health Bureau, or non-governmental agency, to apply what has been learned in a public health setting. The placement could involve any public health activities or functions: such as but not limited to surveillance, policy development, programme evaluation, or communications. Most full-time students will complete the practicum in the summer semester. Alternatively the practicum may also be completed over a year with a defined weekly commitment to the sponsoring agency. With an agreed plan it would be possible for part time working students to complete the practicum within their current place of employment. The plan, structure and deliverables of the practicum will be agreed between the student, the academic advisor and field supervisor.

Pre-requisite: (i) CMED6200 Introduction to epidemiology, (ii) CMED6100 Introduction to biostatistics, (iii) CMED6201 Principles of public health and (iv) Two other core modules in the concentration

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### **CMED6901 Principles of healthcare management (20 hours)**

This module is an introductory course to organizational and management theory as applied in practice in Hong Kong. Students will be introduced to the concepts of organization design and behaviour, management theory, managing people and organising work, leadership, managing change and change theory, using evidence to guide management decision making and methods for the assessment of organizational effectiveness. A problem based approach will be adopted for most of the sessions.

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### **CMED6201 Principles of public health (20 hours)**

History, concepts and concerns of public health, determinants of health, public health policies, health care systems, measurement of health and needs, public health advocacy, control of disease and health problems, health promotion. The sessions are based on the study of either historical or contemporary global health problems using a wide range of different types and sources of information.

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### **CMED6704 Psychosocial issues in health and illness (20 hours)**

This course provides a comprehensive introduction to some core topics in understanding of the roles of psychological and social processes in relation to health and illness. This course will illustrate the interactions between cognition, behaviour, social environment, health and illness.

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### **CMED6221 Public health law and ethics (20 hours)**

This course will lead students to understand and discuss the potential tension between respect for individual rights and morals, and the pursuit to protect the health of the public, or the so-called "private interest versus public good" debate. The course first introduces the conceptual foundations of

health law, ethics and human rights, and issues relating to these fields. Students will then explore how government may, on behalf of the public's health, conflict with the rights of individuals and businesses. These conflicts will be examined through critical current controversies in public health law and practices, e.g. surveillance vs. privacy rights, health promotion vs. freedom of expression and regulation of business. The course concludes by inviting students to critically review the roles of the government, communities, and individuals in some emerging issues in public health, e.g. infectious diseases, bioterrorism, and public health genetics.

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### **CMED6915 Public health leadership (20 hours)**

This course focuses on the challenges of managing complex health care systems. It will explore the leadership and motivational skills relevant to performing as an effective leader, and discuss the different roles associated with managing the individual, the unit, the organization, and the larger system.

Pre-requisite: (i) CMED6901 Principles of healthcare management or (ii) Previous healthcare work experience

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### **CMED6217 Qualitative health research (20 hours)**

This course will provide a comprehensive introduction to qualitative health research, with the aim to helping students to acquire a sound knowledge base of the qualitative research process and to develop an appreciation of the importance of qualitative research in health science. During the course, various qualitative methods will be introduced and discussed. Students will have the opportunity to engage in activities involved in data collection, analysis, as well as appraising qualitative research evidence.

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### **CMED6903 Resources for health (20 hours)**

This course analyses the origins and flow of financial resources through the entire health system, in a tri-axial fashion, in that what is consumed has been provided and financed. Therefore, money is traced from revenue sources to agents in financing schemes, to provision influenced by different factors of production (including operating cost structure and capital formation), to consumption by different beneficiaries resulting in observed utilisation patterns.

In parallel, students learn about the critical importance of non-financial resources, i.e. human resources, in the production of health care. The planning process for, production, deployment (including substitution), retention and continuous development of different types of health care professionals are illustrated. Special mention is also made of other possible resource constraints to optimal system functioning.

Finally common indicators to evaluate health system performance, with particular emphases on financing and human resources, are used to assess various prototypic examples drawn from empirical experience locally and elsewhere.

Pre-requisite: CMED6900 Health policy and politics

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### **CMED6208 Risk: perception, decisions and communication (20 hours)**

Risk is inevitable in life, yet the ability to accurately judge risk and the decisions made thereafter are usually quite skewed by psychological, social and contextual factors, so much so that serious errors can occur in decision making. In health care, the ability to accurately assess risk and the

psychological strategies that people adopt to avoid the threat that risk presents means that health hazards are often completely misrepresented both to ones self and to others. Health professionals also have the task of communicating health risk information to the community as well as individuals. How can information be presented in such a way as to effectively communicate the true nature of a hazard without distorting or falling into the trap of being ignored? This module looks in detail at the area of risk perceptions, the distortions of decisions by psychological and other factors and the communication of risk, all core skills for public health professionals.

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### **CMED6910 Strategic management in healthcare (20 hours)**

This module aims to introduce different conceptual frameworks and methodologies required to develop sustainable strategies for organisations in healthcare – including but not limited to governmental organisations, NGOs, hospitals/clinics, pharmaceutical companies, medical device companies.

Pre-requisite: Previous healthcare work experience

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### **CMED6202 The practice of public health (20 hours)**

The content of this module aims to promote the application of public health sciences to a wide range of common problems and issues. Students will be expected to integrate the diverse knowledge and skill requirements of a competent public health practitioner in their approach to problem solving. Each session will include one or more problems which can be used to illustrate the wide range of disciplines applicable (from an evidence based perspective) to the practice of public health. The module will also focus on the presentation of solutions to specific problems and support the preparation of candidates for international professional examinations in public health medicine.

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