

REGULATIONS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH (MPH)

Applicable to candidates admitted in the 2015/16 academic year and thereafter.

(See also General Regulations and Regulations for Taught Postgraduate Curricula)

M87 Admission requirements

To be eligible for admission to the curriculum leading to the Master of Public Health, a candidate shall:

- (a) comply with the General Regulations;
 - (b) comply with the Regulations for Taught Postgraduate Curricula;
 - (c) 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;
 - (d) satisfy the University English language requirement applicable to higher degrees as prescribed under General Regulation G2(b); and
 - (e) satisfy the examiners in a qualifying examination, if required.
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M88 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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M89 Award of degree

To be eligible for the award of the degree of Master of Public Health, a candidate shall:

- (a) comply with the General Regulations;
- (b) comply with the Regulations for Taught Postgraduate Curricula; and
- (c) complete the curriculum requirements and satisfy the examiners in accordance with the regulations set out below.

Advanced standing may be granted to a candidate who has successfully completed one or more courses in the Postgraduate Diploma/Postgraduate Certificate in Public Health curricula subject to the following conditions:

- (a) such course(s) should be completed no more than 5 years prior to the candidate's commencement of the Master of Public Health curriculum;
- (b) such course (s) should be appropriate for the Master of Public Health concentrations the candidate has applied for; and
 - advanced standing for up to 9 credits may be granted.

A candidate may choose to exit the curriculum after having successfully completed a minimum of 60 credits of the core and concentration coursework component and be considered for the award of a Postgraduate Diploma in Public Health.

M90 Period of Study

The curriculum shall normally extend over one academic year of full-time study, or two academic years of part-time study. Candidates shall not be permitted to extend their studies beyond the maximum period of registration of three academic years of full-time study, or four academic years of part-time study, unless otherwise permitted or required by the Board of the Faculty.

Holders of the Postgraduate Diploma in Public Health may apply for admission to the Master of Public Health curriculum after a break of at least one year. Advanced standing may be granted in accordance with M.89.

M91 Completion of curriculum

To complete the curriculum, a candidate shall:

- (a) satisfy the requirements prescribed in TPG 6 of the Regulations for Taught Postgraduate Curricula;
- (b) take not less than 90 credits in the manner specified in these regulations and the syllabi, and follow the instructions in the syllabi prescribed for the curriculum and complete satisfactorily all required written, practical or clinical work;
- (c) satisfy the examiners in the courses by continuous assessments and/or written examinations;
- (d) complete an approved practicum; and
- (e) complete a satisfactory capstone project on a topic approved by the Board of Studies and may be required to present for an oral examination.

A candidate who fails to fulfil the requirements within the prescribed maximum period of registration shall be recommended for discontinuation under the provisions of General Regulation G12.

M92 Course selection

Selection of courses shall be made within the curriculum structure delineated for each concentration, in consultation with the Academic Director and subject to the approval of the Board of Studies.

M93 Title of the capstone report (capstone experience)

The title of the capstone report shall be submitted for approval on or before May 31st of the graduation year, and the capstone report shall be presented for examination not later than August 1st of the graduation year. The candidate shall submit a statement that the capstone report represents his/her own work (or in the case of conjoint work or work on a secondary dataset, a statement countersigned by his/her co-worker/supervisor, which shows his/her share of the work) undertaken after registration as a candidate for the degree.

All capstone reports may be subject to oral examination.

M94 Assessment

- (a) A candidate who has failed to satisfy the examiners in a course in the first attempt may be permitted:
 - (i) to attend a re-examination; or
 - (ii) to re-submit the failed coursework(s) without having to re-take the same course; or

- (iii) to re-take the course and the prescribed examination(s); or
 - (iv) to enrol in another course in lieu if the failed course is not a core course.
- (b) A candidate who has presented an unsatisfactory capstone report in the first attempt may be permitted to revise the capstone report and to re-present it within a specified period of not more than four months after receipt of a notice that it is unsatisfactory.
- (c) A candidate who has failed to achieve a GPA of 1.0 or above in the practicum in the first attempt shall be permitted to undertake a supplementary practicum within a specified period of not more than four months after receipt of a notice that it is unsatisfactory.
- (d) A candidate who has failed to satisfy the examiners in the second attempt in any course(s), capstone report or practicum, or exceeded the prescribed maximum period of registration shall be recommended for discontinuation of studies under the provisions of General Regulation G12, or may be required to exit the curriculum by the Faculty Board, on recommendation of the Board of Examiners, with an award of Postgraduate Diploma in accordance with M.89.

M95 Grading system

Individual courses will be graded according to the following grading system:

Grade	Standard	Grade Point
A+	Excellent	4.3
A		4.0
A-		3.7
B+	Good	3.3
B		3.0
B-		2.7
C+	Satisfactory	2.3
C		2.0
C-		1.7
D+	Pass	1.3
D		1.0
F	Fail	0

On successful completion of the curriculum, a candidate who has shown exceptional merit may be awarded a distinction as determined by the Board of Examiners for the degree.

M96 Publication based on work approved

Any publication based on work approved for a higher degree should contain a reference to the effect that the work was submitted to The University of Hong Kong for the award of the degree.

SYLLABUSES FOR THE DEGREE OF MASTER OF PUBLIC HEALTH (MPH)

Overall curriculum structure

Candidates are required to complete a minimum of 90 credits curriculum requirement for the Master of Public Health as set out below:

Curriculum structure	Credit weight
Courses	
Core courses	42
Concentration/elective courses	24
Total course credits	66
Practicum	9
Capstone	15
Total credits	90

The mode of assessment for core and elective courses comprises continuous assessments (40%-100%) and written examination (0%-60%). Candidates are also required to undertake a practicum and submit a capstone report to the satisfaction of the examiner(s).

CURRICULUM REQUIREMENTS

Candidates are required to:

- 1) 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)

- 2) Choose courses by **Area of Concentration**

- a) All candidates must enrol in the following core courses:

Code	Title	Credit Units
CMED6912	Environmental health hazards and interventions	6
CMED6100	Introduction to biostatistics	6
CMED6200	Introduction to epidemiology	6
CMED6201	Principles of public health	6
CMED6704	Health behaviour and communication	6
CMED6204	Health and society	6
CMED6901	Principles of health care management	6
OR		
CMED6900	Health policy and politics	6

b) All candidates must enrol in the Practicum

Code	Title	Credit Units
CMED6224	Practicum	9

c) All candidates must enrol in the Capstone

Code	Title	Credit Units
CMED6000	Capstone	15

d) All candidates must select additional courses as specified for each **Area of Concentration**

Concentration 1: Public Health Practice (PHP)

Candidates must take at least **18** credits from the PHP concentration courses listed below and at least **6** credits from elective courses in the course list.

Public Health Practice (PHP) concentration courses		credits
CMED6913	Environmental health assessment	3
CMED6902	Health economics	3
CMED6900	Health policy and politics	6
CMED6206	Health promotion and health education	3
CMED6218	Human health: futures in a globalized world	3
CMED6216	Introduction to public health genomics	3
CMED6203	Measurement in health	3
CMED6217	Qualitative health research	3
CMED6208	Risk: perception, decisions and communication	3
CMED6202	The practice of public health	3

Concentration 2: Epidemiology and Biostatistics (EB)

Candidates must take at least **18** credits from the EB concentration courses listed below and at least **6** credits from elective courses in the course list.

Epidemiology and Biostatistics (EB) concentration courses		credits
CMED6030	Advanced epidemiological methods I	3
CMED6050	Advanced epidemiological methods II	3
CMED6020	Advanced statistical methods I	3
CMED6040	Advanced statistical methods II	3
CMED6211	Infectious disease epidemiology	3
CMED6300	Intermediate epidemiology	3
CMED6203	Measurement in health	3

Concentration 3: Infectious Diseases (ID)

Candidates must take at least **18** credits from the ID concentration courses listed below and at least **6** credits from elective courses in the course list.

Infectious Diseases (ID) concentration courses		credits
CMED6107	Advanced immunology ¹	6
CMED6106	Advanced virology ¹	6
CMED6227	Biological basis of disease	3
CMED6104	Emerging infectious diseases	3
CMED6230	Epidemics and outbreaks	3
CMED6228	Field epidemiology	3
CMED6211	Infectious disease epidemiology	3
CMED6210	Infectious disease modelling	3
CMED6105	Infectious diseases in public health	3
CMED6208	Risk: perception, decisions and communication	3

¹Candidates who wish to enrol in the courses of Advanced immunology or Advanced virology must submit an application to satisfy the entrance criteria as set by the HKU-Pasteur Research Pole.

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

Candidates must take at least **18** credits from the HEPM concentration courses listed below and at least **6** credits from elective courses in the course list.

Health Economics, Policy and Management (HEPM) concentration courses		credits
CMED6401	Advanced clinical epidemiology and decision analysis	3
CMED6909	Comparing systems of elder care	3
CMED6400	Evidence-based practice	3
CMED6902	Health economics	3
CMED6220	Health informatics	3
CMED6900	Health policy and politics	6
CMED6907	Perspectives in health care management	3
CMED6901	Principles of health care management	6
CMED6903	Resources for health	3
CMED6910	Strategies in health care	3

COURSE LIST

(The courses are offered subject to availability and minimum student number.)

CMED6401 Advanced clinical epidemiology and decision analysis (3 credits)

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

This is an intermediate/advanced-level course 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.

CMED6030 Advanced epidemiological methods I (3 credits)
(Pre-requisite: (i) CMED6200 Introduction to epidemiology and (ii) CMED6300 Intermediate Epidemiology)

The overarching conceptual framework for this course centres on the use of structural causal models to design, analyze and interpret studies commonly used in epidemiology, including observational studies, instrumental variable studies, quasi-experimental studies and experimental study designs. This course will consider how structural causal models, mediation analysis, effect modification, multi-level models, sensitivity analysis and consideration of missing data, can be applied to the pursuit of making valid and generalizable causal inferences in epidemiology.

CMED6050 Advanced epidemiological methods II (3 credits)
(Pre-requisite: (i) CMED6200 Introduction to epidemiology and (ii) CMED6030 Advanced epidemiological methods I)

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.

CMED6107 Advanced immunology (6 credits)
(Pre-requisite: A Bachelor of Science degree in biology or immunology or equivalent)

Each year, this course will focus on a different topic, including innate immunity, inflammation, mucosal immunity, vaccination, and or adaptive immunity. Special emphasis is placed on diseases that represent a threat to public health in this region. Lectures are given by internationally renowned scientists, workshops/round tables are supervised by junior faculty members, and practical sessions organized together with local and/or invited faculty members.

CMED6020 Advanced statistical methods I (3 credits)
(Pre-requisite: CMED6100 Introduction to biostatistics)

This course covers transformation of variables, ANOVA, generalized linear models, factor analysis, instrumental variable analysis, and multivariate methods. This course will provide a practical overview of commonly used biostatistical methods, building on the basic methods introduced in CMED6100.

CMED6040 Advanced statistical methods II (3 credits)
(Pre-requisite: CMED6100 Introduction to biostatistics; CMED6020 Advanced statistical methods I)

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. All theoretical material will be motivated by problems from epidemiology and public health.

CMED6106 Advanced virology (6 credits)

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

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. Lectures are given by internationally renowned scientists, workshops/round tables are supervised by junior faculty members, and practical sessions organized together with local and/or invited faculty members.

CMED6227 Biological basis of disease (3 credits)

This course analyses the basic features of cellular functioning at different levels and the molecular basis of diseases and provides an overview of the recent technological advances that are impacting the health care and public reaction to scientific discoveries. Examples will be drawn for non-communicable and communicable diseases.

MICR6903 Common problems in infectious diseases (3 credits)

(Pre-requisite: Registered medical doctors)

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.

CMED6909 Comparing systems of elder care (3 credits)

This course provides 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. Students will compare the demographics of aging; health, disease, and illness; and health care treatment from prevention through rehabilitation and palliation in Hong Kong, China, the United States and elsewhere. The role of interdisciplinary collaboration (between nurses, physicians and other health care professionals) in the care of the elderly is emphasized.

CMED6000 Capstone (15 credits)

The Capstone will demonstrate the acquisition and synthesis of skills and competencies acquired in the curriculum. Each candidate will undertake a Capstone project on a topic approved by the *Capstone Advisor* and submit a Capstone report not longer than 5,000 words. The Capstone report should demonstrate 2 of the following 4 competencies as defined by the Hong Kong College of Community Medicine Training and Examination Guidelines for the sub speciality of Public Health Medicine (2008) (p.14) below:

- To assemble, critically review, synthesise and interpret published literature (including grey literature) on a public health topic

- To use epidemiological or other approaches to describe the health status or health care needs of a defined population and identify environmental or personal risk factors which threaten or enhance health
 - To identify and collect or retrieve relevant information and use this information for service planning or other activities aimed at improving health
 - To assess effectiveness and efficiency of resource use for health services or health promotion activity
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CMED6104 Emerging infectious diseases (3 credits)

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 diseases and of other zoonotic diseases include environmental, ecological, societal, microbial and host factors. This course also addresses factors that contribute to infectious disease emergence, prevention, and control.

CMED6913 Environmental health assessments (3 credits)

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

This multidisciplinary course draws from basic sciences and tools such as: environmental science (fate and transport of contaminants), exposure science, toxicology, environmental epidemiology, risk analysis, and risk communication to explore the impact of environmental health hazards on human health. Also explored in case studies are topical environmental health issues such as: environmentally induced cancer, climate change, indoor air pollution, and occupational health.

CMED6912 Environmental health hazards and interventions (6 credits)

This is a foundation course in environmental health which addresses how the environmental factors may adversely affect human health and what can be done to prevent or minimize the negative impact of environmental health hazards. Whereas environmental science tends to address how human beings affect the environment, this public health oriented course focuses on how the environment may adversely affect human health. Topics include: exposure and dose; hazard and risk; natural and anthropogenic factors; physical, chemical and biological hazards in the air, water, soil and food; local and global environmental health issues.

CMED6230 Epidemics and outbreaks (3 credits)

Infectious diseases have been an important public health issue since the beginning of human history. With frequently observed emergence and re-emergence of infectious diseases, it is essential to examine previous major disease outbreaks/epidemics in order to inform public health decisions in disease control in the future. In this course students will analyse and dissect infectious diseases from historical and contemporary perspectives using an integrated approach to improve their ability to apply public health approaches to prevent and control infectious diseases and consider strategies appropriate for the control or epidemics/pandemics in society.

CMED6205 Epidemiology of important health conditions (3 credits)

Global burden of diseases, epidemiology of cancer, cardiovascular, respiratory, infectious, mental and musculoskeletal diseases, lifestyle factors (smoking, alcohol, diet, exercise, environment, occupation) and health.

CMED6400 Evidence-based practice (3 credits)
(Pre-requisite: CMED6200 Introduction to epidemiology)

This course builds on the principles of epidemiology covered in Introduction to Epidemiology (CMED6200) and introduces clinical epidemiology. Students will learn how to evaluate the validity and relevance of information from research about diagnostic tests, therapy, and prognosis, as well as from conventional information sources (including experts, reviews, and practice guidelines) and consider the efficiency and effectiveness of clinical decisions. Students will also be introduced to methods of searching for and keeping up with new, valid, and relevant clinical information at the point of patient care. Finally, meta-research as an approach to improve the quality of clinical and public health research will be discussed.

CMED6228 Field epidemiology (3 credits)

The course introduces the theory of disease surveillance and includes a review of the relevant epidemiological and bio-statistical skills needed for field investigation. The operational aspects of field investigations including study and questionnaire design, sampling and data collection, data analysis and interpretation, formulation of recommendations, and risk communication. Field investigations in some special settings will also be considered.

CMED6906 Financial management of health care organisation (3 credits)
(Pre-requisite: (i) CMED6910 Strategies in health care or (ii) Previous health care working experience)

This course builds on CMED6910 Strategies in health care, and introduces the use of financial information to inform strategic decision making, and covers topics such as financing of health care 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 health care industry and requires in-class discussions.

CMED6204 Health and society (6 credits)

This course 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 neighbourhood 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.

CMED6704 Health behaviour and communication (6 credits)

This course provides a comprehensive review of the social and behavioural science theories commonly used in public health. The utility of these theories in planning, implementing, and evaluating public health interventions and programs will be critically examined. The theories addressed in this course are not limited to the individual-level, but also that take a broader perspective and examine the role of health communication in influencing health behaviours.

CMED6219 Health communication (3 credits)

The course covers the development of public communication campaigns in the field of health promotion. Students will explore how the mass media can be used to promote health; design mass media messages that are consonant with principles of behavioural science and the public health model; and determine a strategic plan for an integrated mass media campaign.

CMED6902 Health economics (3 credits)

This course introduces basic concepts of health economic evaluation. The course emphasizes the uses and limitations of the economic approach in health care, with applications in medicine, nursing, other clinical areas and health promotion.

CMED6220 Health informatics (3 credits)

(Pre-requisite: Familiarity or interest in computer systems and networking, clear understanding of health care delivery.)

(Co-requisite: CMED6901 Principles of health care management)

This course focuses on the history of health informatics, basic informatics concepts and methods, and health information management applications for health care administration, practice, education and research.

CMED6900 Health policy and politics (6 credits)

This course begins by introducing the core macroeconomic and political theories needed to understand and assess national or regional health systems. Based on these philosophical 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.

CMED6206 Health promotion and health education (3 credits)

This course provides students with a broad overview and understanding for health, health-related human behaviour and how to effect change. Through guided mock practices individually or in groups, students are led through the processes of assessment, planning and evaluation of a variety of health promotion and health education approaches and actions that can be employed in real life.

CMED6218 Human health: futures in a globalized world (3 credits)

(Pre-requisite: This course will be uncompromising, and is not for the fantasy-minded or faint hearted. Full participation is expected of all students.)

This "big picture" course has as its focus the implications of environmental degradation and global warming for the next 25 years. 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 are explored. In particular, students examine current trends and models to attempt to estimate emerging public health issues and hazards linked to these.

CMED6911 Human resources in health care organisations (3 credits)

This course provides an overview of human resource issues in health care. Through individual case studies, group assignments and presentations, students will have a basic understanding of human resource principles, how these apply to health care organisations and the consequent impact on patient care. Topics covered will include, among others, manpower planning and recruitment, staff motivation and performance, leadership and teamwork.

MICR6904 Infections in immunocompromised hosts (3 credits) **(Pre-requisite: Registered medical doctors)**

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.

MICR6905 Infectious disease emergencies (3 credits) **(Pre-requisite: Registered medical doctors)**

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.

CMED6211 Infectious disease epidemiology (3 credits) **(Pre-requisite: CMED6100 Introduction to biostatistics)**

This course covers the fundamental concepts of infectious disease epidemiology and current methods for infectious disease surveillance and control. Topics include epidemiologic triangle, transmissibility and severity of infectious diseases, outbreak investigations and responses, infectious disease surveillance, vaccination, molecular epidemiology, and epidemic modelling. Exemplary cases with focus on recent emerging infectious diseases (e.g. SARS, pandemic influenza A/H1N1, avian influenza A/H5N1, MERS) will be used.

CMED6210 Infectious disease modelling (3 credits) **(Pre-requisite: (i) CMED6211 Infectious disease epidemiology and (ii) Basic programming skills in R)**

This course introduces the use of mathematical models for studying infectious disease dynamics and control. The course is designed for students who have a strong background in infectious disease epidemiology and want to understand and interpret results from infectious disease modeling. Topics include basic epidemic

theory, estimation of transmissibility and disease severity, stochasticity, assessment of uncertainty, cost and effectiveness evaluation of interventions, and optimization of control strategies under resource constraints.

MICR6901 Infectious disease rounds (3 credits)
(Pre-requisite: Registered medical doctors)

The gold standard for the testing of medical knowledge is its predictability of patient 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.

CMED6105 Infectious diseases in public health (3 credits)

Infectious diseases are of major public health concern. This course focuses on the study of microbiology from a public health point of view. This course covers basic microbiology, common infectious diseases in community and health care settings, and provides the biological basis for the methods used for prevention and control of communicable diseases. This course has a strong emphasis on the practical aspects of infectious disease 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.

CMED6300 Intermediate epidemiology (3 credits)
(Pre-requisite: CMED6200 Introduction to epidemiology)

This course builds on the introductory course in epidemiology (CMED6200). Causal inference is undoubtedly one of the most important epidemiological concepts in current epidemiological and population health research. Epidemiological research which focuses on 'risk factor' analysis though important does not always lead public health practitioners and scientists to identify modifiable factors relevant for changing health outcomes. The application of causal inference thinking in epidemiological study design and the use of more advanced data analysis helps ameliorate this problem.

CMED6100 Introduction to biostatistics (6 credits)

Biostatistics concerns the collection, analysis, interpretation and presentation of biological data. Specific applications include epidemiology, clinical trials and public health. This course covers descriptive statistics and elementary probability, and introduces basic topics in inferential biostatistics, including regression, confidence intervals and hypothesis tests. The course provides students with introductory skills in biostatistics to complete their capstone reports; therefore its primary focus is on the practical use and interpretation of statistical methods.

CMED6200 Introduction to epidemiology (6 credits)

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. Epidemiology provides the scientific basis of understanding of the health problems and evidences to support public health interventions. This course introduces the basic concepts and approaches used in epidemiologic research, and serves as a prerequisite for several other courses.

The course begins with an introduction to common approaches to measure the occurrence and distribution of illness in populations and the relationship between different measures. The course then moves on to introduce the major types of epidemiological study designs. Students will learn to design, interpret and critically appraise each type of study, with the aim of differentiating between the study designs and appreciating their relative strengths and limitations in identifying the determinants and causes of illness and disease. The concept of causal inference will be introduced with focus on common pitfalls in epidemiological studies that could lead to biased estimation of the causal relationship. Finally practical issues in designing and implementing epidemiological studies will be discussed, and students will learn to use appropriate terminology and language to report epidemiological findings. Throughout the course, major historical and contemporary epidemiological studies will be described.

CMED6216 Introduction to public health genomics (3 credits)

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 centred on an understanding how genetic and environmental factors work together in determining disease susceptibility in individuals and populations. The course addresses the implications of these developments for health services, and the ethical, legal, cultural, economic and policy issues involved in applying genomics to public health.

CMED6203 Measurement in health (3 credits)

Measuring health status is central to health services research and clinical trials. This course examines the basic science of health measurement for health services research and public health.

The theoretical aspects of health measurement including empirical validity analyses of an existing instrument and the process of developing an instrument where a suitable one does not already exist are considered. The use and utility of a number of evaluative instruments and measurement methods including, screening tools, clinician rating scales and self-report health indicators among others are critically evaluated.

CMED6907 Perspectives in health care management (3 credits)

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

The case-based course provides students with an opportunity to explore real health administration problems in the public sector at both global and local levels. Students will apply administrative science to important and topical problems faced by current health care administrators such as quality and risk management, human resources management, leadership, decision-making, and governance and accountability. Students will formulate solutions to problems in health care administration.

CMED6916 Practice management in the private sector (3 credits)

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

This course seeks to build on students' own experiences and knowledge of health care provision and health care systems and develop the relevant managerial skills for private sector health care management. Health care provision and health care systems are understood both from the perspective of a private health care provider within the mixed medical economy that is Hong Kong.

CMED6224 Practicum (9 credits)

It aims to prepare students with a broad mastery of subjects and methods necessary for the field of public health practice, bridging theory and practice. In compliance with the standards set by the Council on Education for Public Health “the practicum is a planned, supervised and evaluated public health practice experience” (p.16) with defined learning outcomes and deliverable(s) in which students are expected to demonstrate competency based learning outcomes as defined by the ‘Core competencies for the public health professionals May 2010’ <http://www.phf.org/programs/corecompetencies> such as but not limited to the following.

Students will demonstrate the ability to

- integrate, synthesize and apply knowledge and skills to a public health problem; and
- demonstrate the skills needed to function in a professional public health setting, such as:
 - Problem solving and analysis
 - Interpersonal, oral and written communication
 - Self-assessment and critical reflection

Practicum placement may be in one of the following local, regional, or international locations:

- Public health agency
 - Public or private hospital
 - Research laboratory
 - Non-governmental organisation
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CMED6901 Principles of health care management (6 credits)

This course is an introductory course to organisational and management theory as applied in practice. Students will be introduced to systems thinking, management theory, organisational design and structure, organisation behaviour, managing people and organising work, methods for the assessing organisational effectiveness, and assessing quality of care.

CMED6201 Principles of public health (6 credits)

This is the fundamental survey course which encompasses the full spectrum of contemporary public health issues locally and globally.

CMED6221 Public health law and ethics (3 credits)

This course provides students with an understanding of the potential tension between individual and societal rights, the “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 explore how actions taken on behalf of the public’s health may conflict with the rights of individuals and businesses. These conflicts are 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.

CMED6915 Public health leadership (3 credits)

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

This course focuses on the challenges of managing complex health care systems. It explores the leadership and motivational skills acquired by effective leaders, and discusses the different roles associated with managing the individual, the unit, the organization, and the larger system.

CMED6217 Qualitative health research (3 credits)

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.

CMED6908 Quality health care (3 credits)

Methods and strategies for quality measurement in quality improvement and accountability. Measurement of clinical quality using process or outcome data. Measurement of patient expectations/experience with the health care system. Nature and causes of variation in quality, variation related to overuse, underuse and misuse of services. Strategies for changing physician and organizational practice. Traditional quality improvement techniques, regulation, credentialing education, CQI, organizational learning, systems design, managed care, practice guidelines, information systems, performance reports, mediation.

CMED6903 Resources for health (3 credits)

(Pre-requisite: CMED6900 Health policy and politics)

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.

CMED6208 Risk: perception, decisions and communication (3 credits)

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 one 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 course 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.

CMED6910 Strategies in health care (3 credits)
(Pre-requisite: Previous health care work experience)

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

CMED6202 The practice of public health (3 credits)

This course aims to promote the application of public health sciences to a wide range of common problems and issues. Students will be given various scenarios simulating real-world public health problems which can be used to illustrate the wide range of disciplines applicable (from an evidence-based perspective) to the practice of public health. Students will practise the development of a systematic approach to define these problems, search for information to support their assessment, and propose and execute actions to deal with the problems.
