“This postgraduate programme provided a solid theoretical and practical background in epidemiology and biostatistics. Through the expert teaching, guidance, and advice provided by the lecturers and tutors, I gained the knowledge and practical skills necessary in research and data analysis. More importantly, this knowledge can also be applied to my daily clinical practice in medicine. The completion of this programme imparted me with a sense of accomplishment, provided opportunities for establishing friendship with peers and experts with similar interests, and served to pique my interest in epidemiology and biostatistics. I definitely recommend this programme to those in the health care industry, since the advancement gained is invaluable to one’s personal and professional development.”

Dr Jacqueline YAP
Specialist in Anaesthesia and Pain Medicine
Graduate of the Master of Science in Epidemiology and Biostatistics
Associate Consultant, Anaesthesia and Operating Services, Alice Ho Miu Ling and North District Hospitals

“Samples and populations; statistics and its interpretation – these were what I learnt 10 years ago, and I still find them immensely useful in reading medical literature. Equipped with this knowledge I was able to explore a whole new world of ‘macro-medicine’, especially in cancer epidemiology. My understanding of epidemiology and statistics were indispensable tools in past years, during my work as the Director of the Hong Kong Cancer Registry.”

Dr William FOO
Specialist in Clinical Oncology
Graduate of the Diploma in Epidemiology and Applied Statistics
Director, Radiotherapy and Oncology Centre, Hong Kong Baptist Hospital

“My experience with the Master’s course can be described by two words: ‘practical’ and ‘serious’. The course materials were very practical in the sense that they were relevant to my daily work. Besides covering the basic epidemiological concepts, they also emphasized the application of these concepts in actual clinical papers. Various research methodologies were introduced through lectures, tutorial sessions, and hands-on computer workshops. The lecturers, tutors, and the coordinator were serious about teaching. All my classmates experienced their wholehearted dedication to the course. Having taught others in my specialty for more than ten years, I enjoyed such care. Now that I have successfully completed the course, I have fulfilled my original objective: I can apply evidence-based information to clinical management and conduct clinical research.”

Dr Wing-wa YAN
Specialist in Critical Care Medicine
Graduate of the Master of Science in Epidemiology and Biostatistics
Director and Consultant, Intensive Care Unit, Pamela Youde Nethersole Eastern Hospital

Master of Science in Epidemiology and Biostatistics (Part-time)
Postgraduate Diploma in Epidemiology and Biostatistics (Part-time)
Diploma in Biostatistics (Part-time)

Programme Co-Director: Professor Jin-ling Tang
Programme Co-Director: Professor Benny Zee

Background
Modern epidemiology and biostatistics are research methodologies that are used to address practical issues in clinical medicine and public health in human populations. As such, epidemiological and biostatistical methods have been gaining increasing worldwide prominence as a cutting-edge discipline of medical research. In today’s world, both clinical and non-clinical health professionals must provide evidence-based decisions on patient care, public health interventions and public health policies. The epidemiology and biostatistics courses offered in this programme provide the requisite knowledge and quantitative skills for conducting rigorous scientific studies and for interpreting epidemiological data from such research studies as clinical trials, case control and cohort studies and systematic reviews.

Why Study with Us in the CUHK
The School of Public Health and Primary Care (SHPHC) of The Chinese University of Hong Kong is the largest regional institution with expertise in epidemiology and biostatistics. The newly launched Bachelor of Science in Public Health stands as evidence of our ongoing commitment to excellence in public health education.

Our Epidemiology and Biostatistics programme is the sole graduate programme of its kind in Hong Kong. Since its inception in the 1980s, over 500 professionals have graduated from the programme and gone on to successful medical, health and academic careers. Our teachers, trained in prestigious universities such as Harvard, Oxford and UC Berkeley, have substantial experience in teaching and research, and also possess genuine interest in the personal development of their students. World-renowned professors, from leading institutions in the field, are often invited to be guest lecturers in the programme. In addition to traditional topics of epidemiological research and biostatistics, the programme is well-recognized for its expertise in clinical trials, systematic reviews, and evidence-based medicine.

Recognition of the Programmes
The Hong Kong Medical Council recognizes both the Master of Science and Postgraduate Diploma degrees in Epidemiology and Biostatistics as quotable qualifications. Continuing Medical Education (CME) credits for non-specialists can also be obtained.

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More details for the Master programme:
www.cuhk.edu.hk/med/cmd/dip/index.html

More details for the Postgraduate Diploma:
www.cuhk.edu.hk/med/cmd/msceb/index.html

Programme Duration Mode of Study Tuition Fee
Master of Science in Epidemiology and Biostatistics 2 year Part-time HKD 64,800 per year
Postgraduate Diploma in Epidemiology & Biostatistics 10 months Part-time HKD 57,600
Diploma in Epidemiology or Biostatistics 10 months Part-time HKD 28,800
Who Should Apply
- those planning to conduct applied health research such as surveys, clinical trials, observational studies, and systematic reviews in order to address practical issues in health care
- those needing to interpret and apply health research findings for evidence-based patient care and health-related decision making
- those seeking biostatistical proficiency for application to lab-based biomedical research as well as to epidemiological research

The majority of our past students have been clinicians, public health professionals, researchers, nurses, physiotherapists, allied health workers, health managers, laboratory technicians, or professionals from the pharmaceutical field.

Aims and Features
The courses are aimed to provide comprehensive training in the design, conduct, and analysis of clinical and non-clinical health research and to interpret and use findings from such studies for patient care and policy making. We also teach students how to write professional reports and scientific research papers. Since there is emphasis on clinical epidemiology and interpretation of epidemiological research results, the courses are also particularly popular for those who wish to master critical appraisal skills for evidence-based medicine.

We offer four different programmes of study to cater to the varying needs of our students. The 10-month Postgraduate Diploma programme, teaches the essentials of both epidemiology and biostatistics, whereas the 10-month professional Diploma programme allows more flexibility and only requires attendance in either epidemiology or biostatistics courses. The Master of Science programme is a 2-year part-time degree programme that is a continuation of the Diploma programmes. It extends learning to a broader range of topics, involves more in-depth discussions, and emphasizes practical and field-work skills. In addition to the course work, MSc candidates are required to complete an independent research project under the supervision of experienced researchers, and produce a thesis of publishable standard in order to graduate. We encourage and support student’s applications for grant support.

Some of our students’ work has resulted in publications in major medical journals, such as Lancet, Cancer and Chest.

Programme Structure
The Diploma in Epidemiology programme is comprised of 3 modules of epidemiology (9 units) and the Diploma in Biostatistics programme is comprised of 3 modules of biostatistics (9 units). These professional diplomas are designed for students with a specific interest in either epidemiology or biostatistics. The Postgraduate Diploma in Epidemiology and Biostatistics consists of the 18 units (9 units of biostatistics and 9 units of epidemiology) that comprise the aforementioned professional diploma programmes.

The first year of the MSc programme shares the same course contents as the Postgraduate Diploma in Epidemiology and Biostatistics. In the second year, MSc students are required to take advanced courses in biostatistics and epidemiology and to complete a publishable research thesis. All MSc students are required to complete a total of 36 units in order to obtain the degree.

Teaching sessions take place over three terms in an academic year. The typical course load is two sessions per week. The sessions are usually run for 3 hours (6:30 PM to 9:30 PM) on weekday evenings. Additional symposia, seminars and workshops are also offered as non- compulsory sessions in order to allow increased exposure to advanced or related topics. Classroom sessions are normally held in the building of the School of Public Health and Primary Care at the Prince of Wales Hospital in Shatin.

Course Contents

**Epidemiology**
- **Introduction to epidemiology** (history, relevance to and importance for patient care and decision making, comparison with laboratory research, relation to evidence-based medicine)
- **Designs of epidemiological research** (cross-sectional studies, surveys, case control studies, cohort studies, clinical trials, systematic reviews, meta-analyses, ecological studies)
- **Research questions that can be answered in epidemiological studies** (etiology and causes of disease, evaluation of diagnostic methods, evaluation of efficacy and effectiveness, investigation of harms and adverse effects, health needs, policy evaluation, medical screening, mapping up results from different studies)
- **Making sense of epidemiological data** (essentials, estimation and confidence interval, control of confounding, interaction, dose-response relation, stratified analysis, standardization, multiple regression)
- **Evidence-based medicine** (essentials, critical appraisal skills, resources for evidence-based medicine, literature search)
- **Major epidemiological concepts** (biases, confounding, validity, scientific inference, quality and grading of evidence, generalizability, applicability, causes, causal models, causal inference, measuring disease frequency & occurrence, prevalence, incidence, mortality, measures of association, risk ratio, relative risk reduction, odds ratio, number needed to treat)
- **Field work in epidemiology** (questionnaire design; design and evaluation of measurement; data collection; quality control methods; statistical, tabular and graphical presentation of results of epidemiological studies; protocol development; sample size planning; making sense and making use of routinely collected data; skills for writing reports on epidemiological research)
- **Other topics in epidemiology** (epidemiology of diseases such as infectious diseases, AIDS, STDs, and cardiovascular disease; ethical considerations in epidemiological research; molecular, genetic and nutritional epidemiology; epidemics, outbreaks and outbreak investigation; qualitative research)

**Biostatistics**
- **Introduction to biostatistics** (Introduce commonly used statistical methods in medicine and public health research focus mainly on the conceptual understanding of the biostatistics methods. The introduction covers a broad range of topics and is concentrated on their application and interpretation rather than empirical calculation of the statistical methods)
- **Analysis of variance and regression** (We start with simple two sample problems for studies with continuous data, and gradually develop the idea of simple and multiple regressions. We discuss modern statistical analysis including fitting of regression model, diagnostic procedure and model building)
- **Categorical data analysis** (Introduce the analysis of categorical data using logistic regression method, and also discuss diagnostic estimating equation building)
- **Survival data analysis** (Discuss Kaplan-Meier estimate, log-rank test, and then introduce Cox regression and their diagnostic procedures)
- **Advanced logistic regression** (Include topics on multinomial logistic model, proportional odds model for ordered categorical data, conditional logistic model for matched case-control design)
- **Longitudinal data analysis** (We covers repeated measures ANOVA and MANOVA; generalized linear mixed effect model, generalized estimating equation model)
- **Analysis of questionnaire data** (Methods for translation and validation of questionnaires, exploratory and confirmatory factor analysis, structural equation models)
- **Other topics** (Multilevel Modeling, Generalized Additive Models Poisson & Negative Binominal Regression, and Regression Tree)