

Master of Science & Postgraduate Diploma in Epidemiology & Biostatistics Briefing Session 2017-18 intake

The Jockey Club School of Public Health and Primary Care
Faculty of Medicine
The Chinese University of Hong Kong



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Programme Co-Directors

Programme Co-Director

Professor Jin-ling Tang

Professor, The Jockey Club School of Public Health and Primary Care
Associate Director (Mainland Development), The Jockey Club School of Public Health and Primary Care
Head, Division of Epidemiology, The Jockey Club School of Public Health and Primary Care
Director, The Hong Kong Branch of the Chinese Cochrane Centre
Cheung Kong Scholars Professor
Director, Peking University EBM Centre

Programme Co-Director

Professor Benny Zee

Professor, The Jockey Club School of Public Health and Primary Care
Associate Director (Research), The Jockey Club School of Public Health and Primary Care
Head, Division of Biostatistics, The Jockey Club School of Public Health and Primary Care
Director, Centre for Clinical Trials
Assistant Dean (Research), Faculty of Medicine

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MSc / PgD in Epidemiology & Biostatistics

History

- ▶ Begins in the 1980s
- ▶ From Certificate → Diploma → Postgraduate Programmes
- ▶ Over 500 graduates

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MSc / PgD in Epidemiology & Biostatistics

Teachers

- ▶ Trained in prestigious universities such as Harvard, Oxford & UC Berkeley
- ▶ Well-renowned professors from leading institutions in the field
- ▶ Had substantial experience in teaching and research

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MSc / PgD in Epidemiology & Biostatistics

Recognitions

▶ Master of Science in Epidemiology & Biostatistics:

- Awarded by The Chinese University of Hong Kong
- Recognized by The Hong Kong Medical Council as quotable qualifications.

▶ Postgraduate Diploma in Epidemiology & Biostatistics:

- Awarded by The Chinese University of Hong Kong
- Recognized by The Hong Kong Medical Council as quotable qualifications.

▶ Diploma Programme in Epidemiology or Biostatistics:

- Certificate will be offered by The Jockey Club School of Public Health and Primary Care, CUHK

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MSc / PgD in Epidemiology & Biostatistics

Programme structure

Programme	Duration	Mode of Study	Tuition Fee
MSc in Epidemiology & Biostatistics	1 year	Full-time (weekday daytime + weekday evenings)	HK\$165,600-
MSc in Epidemiology & Biostatistics	2 years	Part-time (weekday evenings)	HK\$165,600-
PgD in Epidemiology & Biostatistics	1 year	Part-time (weekday evenings)	HK\$82,800-
Diploma in Epidemiology	1 year	Part-time (weekday evenings)	HK\$41,400-
Diploma in Biostatistics	1 year	Part-time (weekday evenings)	HK\$41,400-

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MSc / PgD in Epidemiology & Biostatistics

Temporary Study Scheme

Fulltime MSc

Term 1 (Sep – Dec 2017)

* Evening Class

Course		Assessment Scheme	
Code	Title	Assessment Method	%
EPID5001	Introduction to Epidemiology *	- Midterm Examination	25%
		- Assignments	30%
		- Final Examination	45%
BIOS5001	Introduction to Biostatistics *	- Homework	15%
		- Quizzes	25%
		- Final Examination	60%
EPBI5001F	Protocol Development I	- In-class Participation - Assignment	100%
BIOS5005	Clinical Trials *	- Synopsis	20%
		- Final Exam	80%

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Temporary Study Scheme

Fulltime MSc

Term 2 (Jan – Mar 2018)

* Evening Class

Course		Assessment Scheme	
Code	Title	Assessment Method	%
EPID5002	Epidemiological Study Designs *	- Assignments	30%
		- Final Examination	70%
BIOS5002	Linear Models *	- Homework	20%
		- Quizzes	20%
		- Final Examination	60%
EPID6001	Appraisal of the Methods of Epidemiological Studies*	- Critical Appraisal	70%
		- Homework	20%
		- Presentation	10%
EPBI5002F	Protocol Development II	- Outline presentation	15%
		- Protocol presentation	20%
		- Final written protocol	60%
		- Participation	5%
EPBI6900F	Data Collection Methods	- Discussion	20%
		- Presentation	20%
		- Field Work	60%
EPBI6901F	Writing of Research Thesis	- In-class Participation	100%

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Temporary Study Scheme

Fulltime MSc

Term 3 (Apr – Jun 2018)

* Evening Class

Course		Assessment Scheme	
Code	Title	Assessment Method	%
EPID5003	Analysis of Epidemiological Data *	- Homework - Final Examination	30% 70%
BIOS5003	Categorical & Survival Data Analysis *	- Homework - Quizzes - Final Examination	20% 20% 60%
EPID6002	Selected Topics in Epidemiology *	- Final Examination - Participation	94% 6%
BIOS6001	Topics in Linear Models *	- Homework - Quizzes - Final Examination	15% 15% 70%
EPBI6902F	Data Collection and Analysis for Research Thesis I	- Individual Discussion with supervisor - Presentation performance - Field work of thesis research	20% 20% 60%
EPBI6903F	Data Collection and Analysis for Research Thesis II	- Discussion with Supervisor - Class Discussion - Presentation - Progress Report	30% 10% 20% 40%
EPBI6904F	Writing Up of Thesis and Presentation of Results	- Thesis	100%

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Temporary Study Scheme (P/T MSc Year 1)

Course		Assessment Scheme		Offering Term
Code	Title	Assessment Method	%	
EPID5001	Introduction to Epidemiology	- Midterm Examination - Assignments - Final Examination	25% 30% 45%	1 st term (Sep-Dec, 2017)
BIOS5001	Introduction to Biostatistics	- Homework - Quizzes - Final Examination	15% 25% 60%	
EPID5002	Epidemiological Study Designs	- Assignments - Final Examination	30% 70%	2 nd term (Jan-Mar, 2018)
BIOS5002	Linear Models	- Homework - Quizzes - Final Examination	20% 20% 60%	
EPBI5001P	Protocol Development I	- In-class Participation - Assignment	100%	
EPID5003	Analysis of Epidemiological Data	- Practice Problems / Report - Protocol	30% 70%	3 rd term (Apr-Jun, 2018)
BIOS5003	Categorical & Survival Data Analysis	- Homework - Quizzes - Final Examination	20% 20% 60%	
EPBI5002P	Protocol Development II	- Outline presentation - Protocol presentation - Final written protocol - Participation	15% 20% 60% 5%	
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Temporary Study Scheme (P/T MSc Year 2)

Course		Assessment Scheme		Offering Term
Code	Title	Assessment Method	%	
BIOS5005	Clinical Trials	- Synopsis - Final Exam	20% 80%	1 st term (Sep-Dec, 2018)
EPBI6900P	Data Collection Methods	- Discussion - Presentation - Field Work	20% 20% 60%	
EPBI6901P	Writing of Research Thesis	- In-class Participation	100%	
EPID6001	Appraisal of the Methods of Epidemiological Studies	- Critical Appraisal - Homework - Presentation	70% 20% 10%	2 nd term (Jan-Mar, 2019)
EPBI6902P	Data Collection and Analysis for Research Thesis I	- Individual Discussion with supervisor - Presentation performance - Field work of thesis research	20% 20% 60%	
EPID6002	Selected Topics in Epidemiology	- Final Examination - Participation	94% 6%	3 rd term (Apr-Jun, 2019)
BIOS6001	Topics in Linear Models	- Homework - Quizzes - Final Examination	15% 15% 70%	
EPBI6903P	Data Collection and Analysis for Research Thesis II	- Discussion with Supervisor - Class Discussion - Presentation - Progress Report	30% 10% 20% 40%	
EPBI6904P	Writing Up of Thesis and Presentation of Results	- Thesis	100%	

Elective Course for MSc Programme

- ▶ BIOS5004 ICH – GCP Standard of Clinical Research
- ▶ BIOS5007 Pharmaceutical Statistics Computing in SAS
- ▶ BIOS6002 Topics in Multivariate Analysis
- ▶ BIOS6005 Pharmaceutical Bioinformatics
- ▶ EPID6003 Nutritional Epidemiology
- ▶ EPID6004 Practice in Systematic Review and Meta-analysis
- ▶ HSOC5002 Healthy Settings
- ▶ HSOC5003 Nutrition for Public Health
- ▶ HSOC5006 Medical Sociology
- ▶ HSYS5002 Healthcare Organization & Management
- ▶ INFD5003 Topics in Infection & Microbiology II
- ▶ INFD5004 Infection Control in Health Care and Community Settings
- ▶ INFD5005 Surveillance /Outbreak Investigation/ Control
- ▶ INFD5006 Methods in Infectious Disease Epidemiology
- ▶ PBHT5001 Qualitative Research Methods
- ▶ POPG5004 Global Reproductive Health
- ▶ POPG5005 Global Child & Adolescent Health

MSc / PgD in Epidemiology & Biostatistics

Course Contents Epidemiology (1)

- **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, summing up results from different studies

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Course Contents – Epidemiology (2)

- **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

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Course Contents – Epidemiology (3)

- ▶ **Field work in epidemiology**

designing a questionnaire; 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 of epidemiological research

- ▶ **Other topics in epidemiology**

epidemiology of diseases such as infectious diseases, AIDS, STD, and cardiovascular disease; ethical considerations in epidemiological research; molecular, genetic and nutritional epidemiology; epidemics, outbreaks and outbreak investigation; qualitative research

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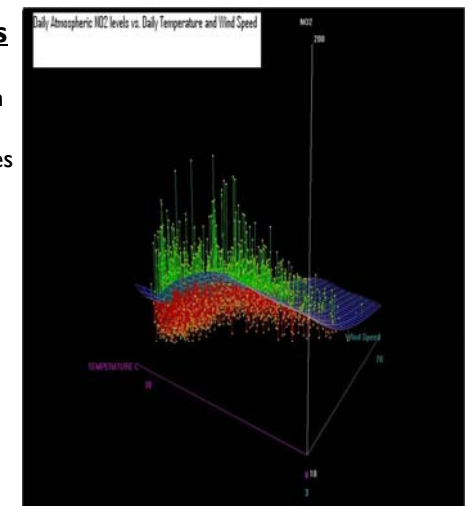
Course Contents – Biostatistics (1)

- ▶ **Introduction to Biostatistics**

Introduce commonly used statistical methods in medicine and public health research. The introduction covers a broad range of topics and concentrates on conceptual understanding, application and interpretation rather than calculations.

- ▶ **ANOVA and Linear Regression**

One and two-way ANOVA for hypothesis testing and regression analysis of continuous data for prediction and confounder control.



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MSc / PgD in Epidemiology & Biostatistics

Course Contents – Biostatistics (2)

▶ **Categorical Data Analysis**

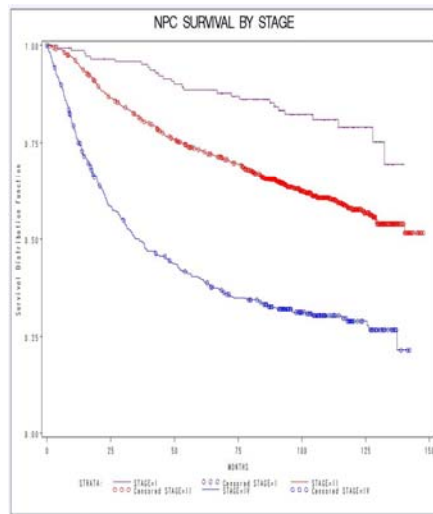
Follow the same line of development, we introduce the analysis of categorical data using logistic regression for binary outcomes and discuss diagnostic procedures and model building

▶ **Survival Data Analysis**

Discuss Kaplan-Meier estimate, log-rank test, and then introduce Cox regression and their diagnostic procedure.

▶ **Advanced Logistic Regression**

Include topics multinomial logistic model, proportional odds model for ordered categorical data, & conditional logistic model for matched case-control designs



MSc / PgD in Epidemiology & Biostatistics

Course Contents – Biostatistics (3)

▶ **Longitudinal Data Analysis**

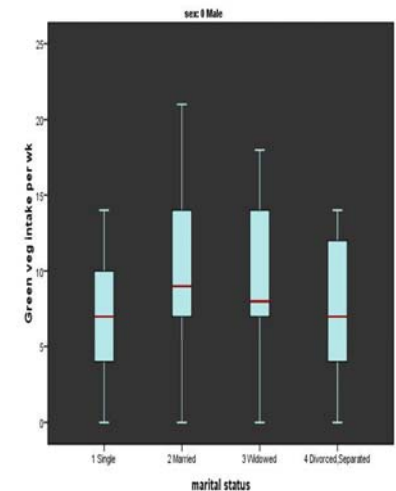
Covers repeated measures ANOVA and MANOVA, generalized linear mixed effect model, generalized estimating equation

▶ **Multilevel Modeling**

for clustered data and longitudinal data

▶ **Analysis of Questionnaire**

Methods for translation and validation of questionnaires, exploratory and confirmatory factor analysis, Structural Equation Models



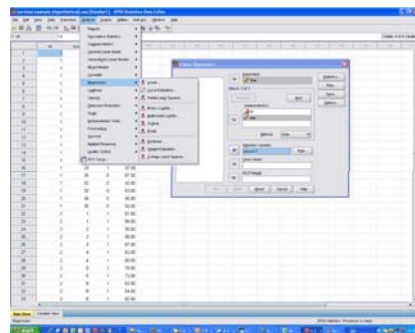
MSc / PgD in Epidemiology & Biostatistics

Biostatistical Computing

▶ Students will also gain hands-on experience in the use of statistical software for conducting data analysis.

▶ Most of the computing tutorials will use SPSS a user-friendly software which utilizes pull-down menus and dialog boxes similar to other windows programs.

▶ Students in the MSc programme will also have exposure to **R**, a powerful freeware programme whose popularity is growing rapidly, and **LISREL** a specialized software for factor analysis and SEM.



MSc / PgD in Epidemiology & Biostatistics

Example Research Projects from Previous and Current MSc Students

Year of Study	Research Projects
2013/14	Observational study: Recurrence after breast-conserving surgery for Chinese early-stage breast cancer patients
2014/15	Design of clinical trials for studying the effect of bio-markers in cancer
2015/16	Sample size planning for multi-stage cluster randomized trials on varying cluster sizes: SAS macros development
2015/16	Retinal characteristics associated with dementia and Alzheimer's disease
2016/17	The effects of different combination therapies for HIV/AIDS
2016/17	Can meteorological factors predict the seasonal Influenza activity in Hong Kong?
2016/17	Genetic epidemiology: Association study of influenza type B mutation and hospitalization rate in Hong Kong
2016/17	Diagnostic characteristics and prognostic markers of breast cancer in Hong Kong and US

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Publications

Cancer, Lancet, International Urogynaecology Journal and Pelvic Floor Dysfunction, Journal of Psychosomatic Research, American Journal of Emergency Medicine, Clinical & Experimental Ophthalmology, Archives of Ophthalmology, American Journal of Respiratory and Critical Care Medicine, American Journal of Obstetrics & Gynecology, International Journal of Radiation Oncology, Biology, Physics, Environment International, Pain Medicine and Menopause

Highlights of Paper Published (1)

Name of Student	Year of Graduation	Topic	Publication issued/ Grant received
Ms Wang Dan	MSCEB 14	Transmission of Hepatitis B and C Virus Infection Through Body Piercing: A Systematic Review and Meta-Analysis	Medicine (Baltimore)
Ms Shirley Ngai Pui Ching	MSCEB 12	Tai Chi for chronic obstructive pulmonary disease (COPD)	Cochrane Databases of Systematic Reviews
Dr Simon F.L. Kwok	MSCEB 08	Lung Function Testing Prediction Equations: Do They Fit All.	American College of Chest Physicians
Dr Alson W. K. Wong	MSCEB 06	Is Topical Antimycotic Treatment Useful as Adjuvant Therapy for Flexural Atopic Dermatitrs: Randomized, Double-blind, Controlled Trial Using One Side of the Elbow or Knee as a Control	International Journal of Dermatology
Ms. Chim Mei Ling Amy	MSCEB 05	Evaluation of Model for End-Stage Liver Disease for Prediction of Mortality in Decompensated Chronic Hepatitis B.	American Journal of Gastroenterology

Highlights of Paper Published (2)

Name of Student	Year of Graduation	Topic	Publication issued /Grant received
Dr. Ha Ping Yiu, Joe	MSCEB 04	Laparoscopic Managemrnt of Acute Torsion of Omentum in Adults.	Journal of the Society of Laparoendoscopic Surgeons (in press)
Dr. Ha Ping Yiu, Joe	MSCEB 04	An Unusual Case of Gastric Outlet Obstruction: Gastroduodenal Intussusception.	Gut (in press)
Dr. Ha Ping Yiu, Joe	MSCEB 04	Pseudo-Bouveret's Syndrome.	Asian J Surg
Dr. Ha Ping Yiu, Joe	MSCEB 04	Primary Closure Versus T-tube Drainage after Laparoscopic Choledochotomy for Common Bile Duct Stones.	Hepato-Gatroenterology
Dr. Chang Kwok Chiu	MSCEB 04	A Nested Case-control Study on Treatment-related Risk Factors for Early Relapse of Tuberculosis	American Journal of Respiratory and Critical Care Medicine

Highlights of Paper Published (3)

Name of Student	Year of Graduation	Topic	Publication issued /Grant received
Mr. Chan Hung Fai	MSCEB 04	Improvement of feeding independence in end-stage cancer patients under palliative care-a prospective, uncontrolled study	Supportive Care in Cancer
Dr. Jacqueline Yap	MSCEB 02	Validation of the Chinese Pain Catastrophizing Scale (HK-PCS) in patients with chronic pain	Pain Medicine (in press)
Ms. Sun Shin Heang	MSCEB 99	Efficacy of Single-dose SA 14-14-2 Vaccine Against Japanese Encephalitis: a Case Control Study	LANCET
Mr. Li Hiu Yeung	MSCEB 99	Gender Different in Insomia-A Study in the Hong Kong Population	Journal of Psychosomatic Research
Mr. Wong Kin Kenny	MSCEB 99	A Randomized Controlled Trial on Vocational Outcomes of Supported Employment Program for Mental Illness	Health Care and Promotion Fund Committee

Highlights of Paper Published (4)

Name of Student	Year of Graduation	Topic	Publication issued /Grant received
Dr.Yuen Man Cheuk	MSCEB 99	Validation of the Ottawa Ankle Rules for Requesting X-ray in Ankle and Foot Injuries by Emergency Physicians and Triage Nurses in Hong Kong	American Journal of Emergency Medicine
Ms.Tang Mei Yee	MSCEB 98	Prognostic Factors for Hepatocellular Carcinoma Based on a Historical Cohort of 926 Chinese in Hong Kong	CANCER
Dr. Leung Ho Yin	PDPEB 99 & MSCEB 99	Quality of Life Measurements in Chinese Women with Urinary Incontinence: a Reliability, Responsiveness and Validity Study	HSRC Grant
Dr. Leung Ho Yin	PDPEB 99 & MSCEB 99	A randomized controlled trial of Tolterodine versus Oxybutynin in the improvement of Quality of Life for Chinese women suffering from overactive bladder.	International Urogynaecology Journal and Pelvic Floor Dysfunction 2001;12 (Suppl 3):S70

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MSc / PgD in Epidemiology & Biostatistics

Graduation Requirements

- ▶ Complete a minimum credit units:-
 - MSc in Epidemiology & Biostatistics: 36 units
 - PgD in Epidemiology & Biostatistics: 18 units
 - Diploma in Epidemiology / Biostatistics: 9 units
- ▶ Minimum cumulative GPA of 2.0;
- ▶ Minimum grade of "D" is required in the courses taken; *and*
- ▶ Attend at least 75% of each course.

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MSc / PgD in Epidemiology & Biostatistics

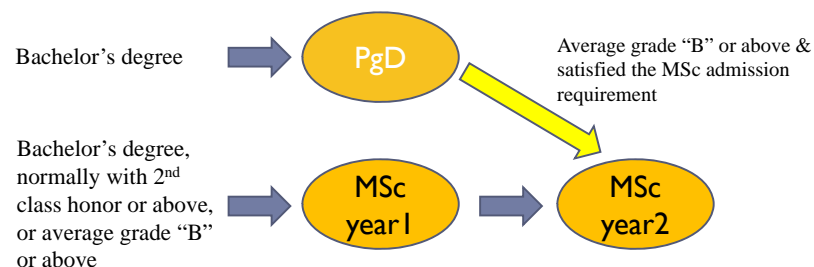
Career Advancement

- Advance to senior clinical, public health, research, academic and administrative position;
- Pharmaceutical industry – biotech company, pharmaceutical market analysis company, etc.
- Change to research careers in academic and governmental organizations;
- Continue onto doctoral studies.

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MSc / PgD in Epidemiology & Biostatistics

Admission Requirement / Advancement from PgD to MSc



Mechanism in Transferring to MSCEB from PDPEB

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MSc / PgD in Epidemiology & Biostatistics

Full-Time Programme

Priority Round Deadline: 28 Feb 2017

Final Round Deadline: 1 May 2017

Part-Time Programme

Priority Round Deadline: 15 Apr 2017

Final Round Deadline: 31 May 2017

Enquiry (Admission)

Programme Administrator: Mr Johnny Zhou/ Ms Vicky Hui

Programmes in Epidemiology and Biostatistics

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