Course Title/Code:	**Infectious Disease Modelling (MMPH6168)**
Department:	School of Public Health

Objective: This Course extends the materials covered in the introductory Course in infectious disease epidemiology (MMPH6167) and focuses on use of mathematical modeling in infectious disease epidemiology.

1. To describe the basic principles of building infectious disease models
2. To describe the basic principles of estimating transmission and severity parameters from disease data
3. To build simple infectious disease models
4. To critically appraise and interpret results from infectious disease modeling

Content: Course topics includes:

- Basic epidemic theory
- Extensions of basic epidemic theory
- Case study of Brisson and Edmunds
- Basic parameter estimation
- Evidence-based modeling
- Stochasticity
- Modeling logistics of epidemic interventions
- Phylogenetics in studying infectious disease
- Optimizing allocations of intervention resources
- Pandemic flu H1N1 serosurvey

Learning Outcomes: By the end of this Course, students should be able to:
1. To describe the basic principles of building infectious disease models
2. To describe the basic principles of estimating transmission and severity parameters from disease data
3. To construct simple mathematical models of infectious disease transmission and control.
4. To critically appraise and discuss modern public health literature based on infectious disease modelling.
5. To explain the strengths and limitations of infectious disease modeling in informing public health decisions

Prerequisite: MMPH6167 – Infectious Disease Epidemiology; CMED6100 - Introduction to biostatistics

Duration: 3 hours/week; 30 contact hours

Continuous assessment Examination ratio: Coursework: 50%
Examination: 50%

Examination method/ duration: Written examination / 2 hours

Remarks: Also offered to RPg from other Faculties at HKU.