



MMPH6168 Infectious disease modelling	
Course Coordinator:	Prof J Wu
Course Description:	This course is an introduction to mathematical modeling of infectious disease dynamics and control. The course is designed for students who have a strong background in infectious disease epidemiology and determine to advance their knowledge and skills with infectious disease modeling. Topics include basic epidemic theory, estimation of transmissibility and clinical severity, parameter estimation, stochasticity, evidence synthesis, assessment of uncertainty, cost and effectiveness evaluation of interventions, and optimization of control strategies under resource constraints.
Venue:	TBC

Prerequisite: (i) CMED 6211 Infectious disease epidemiology; and (ii) strong programming skills in R or equivalent (including the use of loops, conditional statements, and functions). Fulfillment of such pre-requisites before or during the course is solely the responsibility of the enrolled students. Students who have little or no experience in computer programming are expected to self-learn these skills via free online courses such as R Programming on Coursera (<https://www.coursera.org/learn/r-programming>).

Term 3 (Monday) Contact person: Mr Jonathan Lau & Ms Vivian Leung

Date	Time	Lecture Topic	Lecturer	Venue
13 May 2024	6:30 – 9:30 pm	1. Basic epidemic theory	Prof J Wu	TBC
20 May 2024	6:30 – 9:30 pm	2. Modeling interventions Tutorial or Q&A	Prof J Wu	TBC
27 May 2024	6:30 – 9:30 pm	3. Parameter estimation 1 Tutorial or Q&A	Prof J Wu	TBC
03 June 2024	6:30 – 9:30 pm	4. Parameter estimation 2 Tutorial or Q&A	Prof J Wu	TBC
17 June 2024	6:30 – 9:30 pm	5. Uncertainty Tutorial or Q&A	Prof J Wu	TBC
24 June 2024	6:30 – 9:30 pm	6. Stochasticity Tutorial or Q&A	Prof J Wu	TBC
08 July 2024	6:30 – 9:30 pm	7. Modeling logistics Tutorial or Q&A	Prof J Wu	TBC
15 July 2024	6:30 – 9:30 pm	8. Evidence synthesis Tutorial or Q&A	Prof J Wu	TBC
22 July 2024	6:30 – 9:30 pm	9. Molecular epidemiology Tutorial or Q&A	Dr T Lam	TBC



29 July 2024	6:30 – 9:30 pm	10. Health economic evaluation	Prof J Wu	TBC
		Tutorial or Q&A		
05 Aug 2024	6:30 – 8:30 pm	Final Examination	-	TBC

Course Assessment: Coursework: 70%
Examination: 30%

Recommended Textbook: 1. Vynnycky E, White RG. An Introduction to Infectious Disease Modelling. Oxford Univ. Press, 2010.

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