

**MMPH6150 Advanced statistical methods II**

Course Coordinator:	Dr Tim Tsang
Course Description:	This course will provide a basic, yet thorough introduction to 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.
Venue:	TBC

Prerequisite: CMED 6100 Introduction to biostatistics; CMED 6020 Advanced statistical methods I

Term 3 (Tuesday)**Contact person: Miss Weijia Xiong**

Date	Time	Lecture Topic	Lecturer	Venue
07 May 2024	6:30 – 9:00 pm	1. Frequentist inference, interval estimation and hypothesis testing	Dr Tim Tsang	TBC
		Practical		
14 May 2024	6:30 – 9:00 pm	2. Bootstrap method	Dr Tim Tsang	TBC
		Practical		
21 May 2024	6:30 – 9:00 pm	3. Regression discontinuity design	Dr Tim Tsang	TBC
		Practical		
28 May 2024	6:30 – 9:30 pm	Tutorial 1	Dr Tim Tsang	TBC
04 Jun 2024	6:30 – 9:00 pm	4. Survival analysis, multiple imputation	Dr Tim Tsang	TBC
		Practical		
11 Jun 2024	6:30 – 9:00 pm	5. Multilevel analysis	Dr Tim Tsang	TBC
		Practical		
18 Jun 2024	6:30 – 9:00 pm	6. Longitudinal analysis	Dr Tim Tsang	TBC
		Practical		
25 Jun 2024	6:30 – 9:00 pm	7. Marginal structural model	Dr Tim Tsang	TBC
		Practical		
02 July 2024	6:30 – 9:30 pm	Tutorial 2	Dr Tim Tsang	TBC
09 July 2024	6:30 – 9:00 pm	8. LASSO regression	Dr Tim Tsang	TBC
		Practical		
16 July 2024	6:30 – 9:30 pm	9. Bayesian inference	Dr Tim Tsang	TBC
		Practical		
23 July 2024	6:30 – 9:30 pm	Tutorial 3	Dr Tim Tsang	TBC
30 July 2024	6:30 – 8:30 pm	Examination	-	TBC



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Course Assessment: Coursework: 50%
Examination: 50%

**Recommended
References:**

1. Everitt B.S. and Hothorn T. A handbook of statistical analyses using R. Boca Raton, Florida: Chapman & Hall, 3rd edition.

Teaching Assistant: Ms Weijia Xiong/ Miss Vania Lin/ Miss Yanfang Xu
Contact person: Ms Weijia Xiong – email: wjxiong@connect.hku.hk , Tel: 3910 2625.