Course Title/Code:	**Statistical Inference Using R (MMPH6177)**

Department: Community Medicine

Objective: After the course, students will be able to:
1) Explain the frequentist and Bayesian approaches to statistical inference.
2) Conduct appropriate descriptive and inferential analyses of quantitative data using the statistical software package R.
3) Apply linear and additive models and correctly explain and interpret their methods and results.
4) Apply data resampling techniques to estimate the uncertainty in parameter estimates.

Content: This course will provide a basic, yet thorough introduction to the 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. The open-source software package R will be introduced, and used to perform analyses. R also includes a powerful graphics engine which will be used to produce publication-quality figures. All theoretical material will be motivated with problems from epidemiology and public health.

Prerequisite: MMPH6002 Introduction to Biostatistics

Co-requisite: MMPH6117 Advanced statistical methods I – Experimental and quasi experimental designs and data analysis

Duration: 1 semester; 2 hours/week; 24 contact hours

Coursework/Examination ratio: 30% / 70%

Examination method and duration 2 hours examination

Remarks: Also offered to RPg from other Faculties at HKU