

Course Title/Code:	Advanced Statistical Methods I (MMPH6117)
Department:	School of Public Health
Objective:	<ol style="list-style-type: none"> 1. Introduce commonly used biostatistical methods 2. Evaluate the choice of statistical model and assess model assumptions 3. Analyze real datasets using the statistical package R 4. Present and interpret statistical results accurately
Content:	<p>Topics include:</p> <ul style="list-style-type: none"> • Introduction to R • Applied regression - model diagnostics • Applied regression - interactions and confounder adjustment • Applied regression - count data • Applied regression - multicollinearity, modelling strategy • Propensity score method and instrumental variables • Meta-analysis • Data visualization and cleaning
Learning Outcomes:	<p>By the end of this course, students should be able to:</p> <ol style="list-style-type: none"> 1. Conduct appropriate descriptive and inferential analyses of biomedical data using the statistical software packages R. 2. Interpret the results of statistical data analysis including p-values for hypothesis tests under different study designs. 3. Evaluate trial design and trial data analysis
Prerequisite:	Introduction to Biostatistics (MMPH6002)
Duration:	3 hours/week; 30 contact hours
Continuous assessment Examination ratio:	<p>In-course assessment: 30%</p> <p>Final examination: 70%</p>
Examination Method/duration	Data analysis assignment in class with data sets given one week in advance (2.5 hours)
Remarks:	Approval from the School must be sought prior to enrollment.