

## Statistics Courses: January – July, 2012

### Introductory Courses

Course Title	Description	Intended Audience	Next Course Date	Course Time
Entering Data for Analysis	How to correctly prepare a dataset for analysis with a statistics package. Includes entering, transforming and re-coding data.	Those who are about to collect data, who'd like to make sure it is entered into the package properly to avoid making amendments at the analysis stage.	Mon Feb 6 <sup>th</sup> 2012 Weds March 21 <sup>st</sup> 2012	09:30 – 12:30 13:00 – 16:00
Summary Statistics and Confidence Intervals	Choosing appropriate descriptive statistics such as percentages and average. Use of confidence intervals to answer research questions.	Anyone who wants to learn about simple data analysis or reads medical literature.	Mon Feb 13 <sup>th</sup> 2012 Weds March 28 <sup>th</sup> 2012	09:30 – 12:30 13:00 – 16:00

Effective use of Graphs	Choosing appropriate graphs to represent data and answer research questions. Includes bar charts, histograms and box & whisker plots.	Anyone who wants to learn about simple data analysis or reads medical literature.	Mon Feb 20 <sup>th</sup> 2012 Weds April 4 <sup>th</sup> 2012	09:30 – 12:30 13:00 – 16:00
Understanding P-values	Correct interpretation of p-values. Includes definition of significance level, types of error and problems of multiple testing.	Anyone who reads medical literature and isn't sure how to interpret a p-value.	Mon Feb 27 <sup>th</sup> 2012 Weds April 11 <sup>th</sup> 2012	09:30 – 12:30 13:00 – 16:00

### Advanced Courses

Comparing Numerical Outcomes	Focuses on comparing numerical outcomes between two groups, when making adjustments for case-mix, i.e. influential factors other than the intervention. Covers the application of linear regression.	Students, staff/researchers who have some knowledge of simple analysis of numerical outcomes, e.g. descriptive statistics such as the mean and its confidence interval.	Mon May 14 <sup>th</sup> 2012	09:30 – 12:30
Interpreting Statistical Tests	Covers the interpretation of	Students, staff/researchers	Mon July 16 <sup>th</sup> 2012	09:30 – 12:30

of Numerical Outcomes	<p>statistical tests when looking at numerical outcomes. Defines terms such as 'parametric'/'non-parametric' test, 'paired' outcomes, etc. This does not help you choose 'which test', but helps you to understand what has been done when reading the literature.</p>	<p>who have some knowledge of simple analysis of numerical outcomes, e.g. descriptive statistics such as the mean and its confidence interval.</p>		09:30 – 12:30
Comparing Yes/No Outcomes	<p>Focuses on comparing binary outcomes between two groups, when making adjustments for case-mix, i.e. influential factors other than the intervention. Covers the applications of odds ratio, relative risk and logistic regression.</p>	<p>Students, staff/researchers who have some knowledge of simple analysis of categorical outcomes, e.g. descriptive statistics such as a proportion and its confidence interval.</p>	Mon May 21 <sup>st</sup> 2012	09:30 – 12:30
Interpreting Statistical Tests of Categorical Outcomes	<p>Covers the interpretation of statistical tests when looking at numerical outcomes. Defines terms such as 'parametric'/'non-parametric' test, 'paired' outcomes, etc.</p>	<p>Students, staff/researchers who have some knowledge of simple analysis of categorical outcomes, e.g. descriptive statistics such as a proportion and its</p>	Mon July 23 <sup>rd</sup> 2012	09:30 – 12:30

	This does not help you choose 'which test', but helps you to understand what has been done when reading the literature.	confidence interval.		
Sample Size	Introduces the importance, considerations and methods required for basic sample size calculations (also known as 'power calculations') such as comparison of two proportions or two means.	Students, staff/researchers who have some knowledge of simple analyses, e.g. comparing the outcomes of two groups, who would like to be able to perform basic types and better understand more advanced types of sample size calculations.	Mon June 11 <sup>th</sup> 2012	09:30-12:30
Screening Tests	Covers the statistics associated with diagnosis, e.g. sensitivity, specificity, predictive values.	Students, staff/researchers who have some knowledge of simple analyses, e.g. comparing the outcomes of two groups, who would like to be able to calculate diagnostic statistics themselves and interpret them correctly.	Mon June 4 <sup>th</sup> 2012	09:30-12:30
Reliability of Measurements	Covers the statistical techniques used to compare	Students, staff/researchers who have some knowledge	Mon July 2 <sup>nd</sup> 2012	09:30 – 12:30

	<p>two methods used to measure the same outcome, e.g., Bland-Altman plots, Kappa coefficients, etc. Also includes the reliability of repeated measurements using one method, e.g., intra-class correlation.</p>	<p>of basic statistical tools such as p-values and confidence intervals, who would like to be familiar with the statistics involved in looking at the agreement between either methods, raters or repeated measurements.</p>		
<p>Time-to-event (Survival) Analysis</p>	<p>Covers the statistical techniques used to model or compare time to an event and sometimes when the event is not guaranteed to take place over the course of the study, e.g., death, pregnancy, etc. This will include tools such as Kaplan-Meier plots and partial likelihood (Cox) regression.</p>	<p>Students, staff/researchers who have some knowledge of basic statistical tools such as p-values and confidence intervals, who would like to be familiar with the statistics involved in looking at time-to-event.</p>	<p>Mon July 9<sup>th</sup> 2012</p>	<p>09:30 – 12:30</p>

## How to Book

These courses are free to Salford Royal staff, as well as staff from Manchester Children's Hospitals, Royal Bolton Hospital and any Primary Care Trust which is part of ReGrouP. Each individual course stands alone, you may book as many or as few as you wish and are welcome to re-attend a course if you would like a refresher. Please note that there are only 8 places available per course. All courses include a practical session using the statistical package StatsDirect.

For further information or book a place on any of these courses please contact Annie Herbert on:

(0161) 2064567 or [annie.herbert@manchester.ac.uk](mailto:annie.herbert@manchester.ac.uk)

(Please leave up to 2 weeks for confirmation of a place).