

Further Statistical Modelling (Elective)

Credit Value:	10
Course Organiser:	Dr Niall Anderson
Course Instructor(s):	Dr Niall Anderson / Dr Linda Williams
Time:	Semester 2 Weeks 6-11 Monday 11.10-13.00, Thursday 9.00-10.50
Short course description:	This course describes the principles of more advanced statistical methods suited to continuous data, and considers how these should be interpreted appropriately.
Course prerequisites:	Statistics & Analysis
Aim:	To introduce students to statistical methods for modelling continuous and survival data, and to provide training and experience in applying and interpreting these appropriately using statistical software. Builds on the general modelling principles established in the Statistical Modelling prerequisite course.
Learning objectives:	<ul style="list-style-type: none">• Demonstrate an understanding of the application and interpretation of linear models such as Analysis of Variance, and multiple regression models.• Show familiarity with the Poisson distribution and Poisson regression and in particular with their application to the calculation of standardised rates.• Recognise the need for specialised techniques for survival data, and demonstrate an understanding of the application and interpretation of Kaplan-Meier methods and Cox proportional hazards models in this situation.• Select and apply methods suitable for measurement validation.• Show knowledge of and ability to use suitable generic principles of statistical modelling, for exploring interactions and confounding, selecting variables and choosing appropriate explanatory variable formats.• Undertake modelling appropriately using statistical software.
Teaching methods:	Lectures, class exercises, tutorial and computing practicals
Assessment:	Assignment comprising analysis of data and report.