開授課程大綱

課 程 資 訊

課程名稱	心理學數理方法　MATHEMATICAL METHODS IN PSYCHOLOGY				
課程編號		班次		學分數	3
全／半年	半年		必／選修		選修
授課教師	徐永豐		開課系所		心理系
備註	限本系大三以上學生。大二或外系校生需經老師同意。需同時選修"心理學資料處理-以 R 為例"。				

課 程 大 綱

課程概述與目標	此課程乃為對心理學資料處理與(認知)模式應用有興趣的學生開設。我們將複習並介紹一些機率與統計基本概念。內容包括: 樣本空間，條件機率，貝式定理，最大概似原則，隨機變數，期望值與動差，中央極限定理，大數法則，相關，變異數分析，及一些常見分配的介紹 (如二項分配，多項分配，幾何分配，普瓦松分配，均等分配，指數分配，常態分配，卡方分配，t 分配，F 分配…等)。我們並將簡略介紹心理學常用的一些(認知)模式的數理方法應用。此課亦輔以 R 實際操作為例，以加深上述概念。 This course is designed for students who are interested in data analysis and modeling in psychology. We will emphasize the basic concepts of probability and statistics. Topics include sample space, conditional probability, Bayes Theorem, the maximum likelihood principle, random variables, expectation and moment, Central Limit

	Theorem, Law of large numbers, covariance and correlation, ANOVA, and some well-known distributions (such as binomial, multinomial, geometric, Poisson, uniform, exponential, Gaussian, chi-square, t, and F). We will also introduce the concepts of modeling and demonstrate with some examples. Each week there will be a small session on the introduction and practice of the R software to help students understand the aforementioned concepts.
課程要求	Students are expected to participate actively in classroom discussion, read the course material thoroughly and critically.
參考書目	There is no required textbook. All the readings are from journal papers and book chapters that will be distributed in class.
評量方式	Course grades will be based on homework problems and in-class participation and discussion.