Advanced Educational Statistics（Ⅱ） 幼兒高等教育統計（Ⅱ）

Course Description

This course is intended to provide students with a working knowledge of and skills in the analysis of data from experiments and surveys (with categorical independent variables) using the Analysis of Variance.   Students will develop knowledge of and skills in underlying statistical models, matching statistical models to research designs, in using the computer software to conduct appropriate statistical analyses, and to interpret and to report findings.

The first eight weeks of the course cover the basic concepts and procedures used in one-way and factorial analysis of variance (ANOVA) with between-subjects designs. Fixed, random, and mixed models ANOVA are covered as methods for estimating strength of association between treatment and outcome, and carrying out both planned and post-hoc comparisons.   In the next four weeks, ANOVA models for within-subjects (randomized-blocks) and mixed (split-plot) designs are presented. The rest of four weeks will be used for "catch up" and for advice on the final project to be completed.

This course will use a combination of readings, lectures, hands-on activities, computer labs and writing of mini-research papers to impart knowledge and develop practical skills for carrying out statistical analyses and reporting findings.   Typically lectures and activities will be integrated with computer labs—data analysis, interpretation, and reporting.   Recognition, use, and interpretation of appropriate statistical models for various research designs are crucial to understanding—the primary theme of the course.