F79PS Statistics for Social Science

COURSE DETAILS
Course Code: F79PS
Full Course Title: Statistics for Social Science
SCQF Level: 9
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes
Postgraduate Taught: Yes
Postgraduate Research: No

COURSE AIMS

- To develop an understanding of specialised multivariate statistical techniques applied in the social sciences including linear modelling and generalised linear modelling methods
- To develop proficiency in applying these methods in the analysis of experimental data using standard statistical packages
- To further develop effective skills for writing reports and reporting conclusions of scientific study.

LEARNING OUTCOMES – SUBJECT MASTERY

After studying this module, students should be able to:

- Understand the statistical theory of linear, nonlinear and multivariate methods in the social sciences
- Apply these methods to investigate practical problems in a social science context (principally psychology)
- Use their statistical expertise to draw valid conclusions from experimental data

LEARNING OUTCOMES – PERSONAL ABILITIES

At the end of this module students should be able to:

- Demonstrate facility with the main statistical package used in social sciences (SPSS)
- Demonstrate an appreciation of the scientific problems to which statistical methods can be applied in psychology and other social sciences
- Present results from a statistical analysis in a way that demonstrates that they have understood the technical and broader issues of statistical methodology as applied in practical situations
- Manage time in order to meet report deadlines and to discuss statistical problems confidently with peers and colleagues

SYLLABUS
Review of key statistical background: including probability as a frequency versus degree of belief, standard distributions, descriptive statistics & graphical methods, calculation and interpretation of confidence intervals for standard sampling situations; theory of hypothesis testing and simple tests of goodness of fit (Chi-squared, Kolmogorov-Smirnov); comparison of populations - including t-tests and non-parametric methods;

Linear modelling techniques: Regression (univariate and multivariate), analysis of variance (1-way, 2-way), definition and use of contrasts, analysis of Covariance, regression and ANOVA as special cases of Generalised Linear Models (GLM).

Multivariate methods: Principal component analysis and factor analysis - theoretical basis and practical application to data analysis in psychology

Further modelling methods: Generalised Linear Modelling, loglinear models, logit, probit analysis

Principles of questionnaire design

Reassessment not available for final year students

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