Course Title : Quantitative Data Handling in Psychological Research

Course Code : PSY-903

Credit Hours : 3

Pre-requisites: Basic Statistics Analysis and Research Methods Courses

Course Description:

1. This course will provide a conceptual understanding required to use advance statistical techniques for data analysis in Behavioral Sciences. Topics include analysis of variance, multiple regression, logistic regression, model checking and refinement, structure equation modeling etc. The focus will be on practical methods of data analysis and their interpretation thus it will enrich students' skills to make appropriate use of statistical soft-wares such as SPSS, AMOS for advanced statistical techniques. The learning tools used in course will enable students to connect their understanding with real world problems and research projects in Behavioral and Social Sciences as well it will equip them to use these skills for their own Ph.D. research.

Course Objectives:

2. The course is designed to:
    a. Provide thorough understanding of conceptual underpinning for use of advance statistical methods in Behavioral Science
    b. Enable them to apply this understanding when planning and conducting data analysis for research projects
    c. Able to use appropriate statistical tools/software for running advance statistical techniques
    d. Enhanced abilities to critically interpret and appropriately report their findings in research reports and research papers for publication

Learning Outcomes:

3. The students will;
    a. Demonstrate their understanding and logical thinking about appropriate use of advance statistical methods in variety of real-world research projects

b. Be able to use suitable statistical tools such as (SPPS, AMOS) for conducing multiple regression, logistic regression, structure equation modeling techniques

c. Demonstrate their skills related to interpretation of findings and effectively reporting the results from the advance statistical analysis

d. Make effective use of their knowledge and skills for their own Ph.D. research and other research designs within the behavioral and social sciences

4. **Course Contents:**

a. Review of basic statistical concepts i.e. probability, sampling distributions, hypothesis testing, exploring and cleaning the data
b. Introducing parametric tests
c. Comparing two means:
d. Overview on Univariate and multivariate statistical techniques
e. Comparing more than two means
f. ANOVA
g. Regression Analysis (overview on general linear model)
h. Multiple regression and Logistic regression analysis
i. Methods for testing mediation and moderation effects
j. Causal Modeling: Path Analysis and Structural Equation Modeling
k. Structure Equation Modeling
l. APA guidelines for reporting results of advanced statistical analysis

Recommended Text:

1. Variety of research papers from the field of Behavioral and Social Sciences