PSYCHOLOGY

COURSES OFFERED BY DEPARTMENT OF PSYCHOLOGY

Psychology Courses for Undergraduate Programme of study with Psychology as one of the Core Disciplines

DISCIPLINE SPECIFIC CORE COURSE – 13: FUNDAMENTALS OF INFERENTIAL STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical / Practice		
DSC-13 Fundamentals of Inferential Statistics	4	3	1	0	Passed Class 12th	Nil

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with inferential statistical techniques in psychological research.
- To foster an understanding of the application of statistics tests for quantitative research in Psychology.

Learning Outcomes

After completing this course, the student will be able to:

- Have statistical understanding for review of literature of quantitative research in Psychology.
- Make informed choice about application of statistical techniques for quantitative data.
- Perform statistical analysis for quantitative data analysis in research using calculator.
- Interpret the results obtained from statistical tests.

SYLLABUS OF DSC-13

UNIT 1 **(15 Hours)**

Introduction to Inferential Statistics; Properties of Random Sampling Distribution of the Mean; Hypothesis Testing – *t* test – Calculation with raw scores and Assumptions (Single mean, Independent samples, Dependent samples); One-tailed and Two-tailed tests; *p*-Value; Errors in hypothesis testing; Power of test

UNIT 2 **(10 Hours)**

Confidence Intervals for Single Mean and Difference between two means (Calculation); Relation between Confidence Intervals and Hypothesis Testing; Advantages of Confidence Intervals

UNIT 3 **(10 Hours)**

Hypothesis testing – One-way Analysis of Variance (ANOVA); Basis of ANOVA, Calculation with raw scores, Assumptions, Comparison of *t* and *F*; Conceptual understanding of Post Hoc Comparisons

UNIT 4 **(10 Hours)**

Chi-Square Test – Logic and Assumptions, Calculation for Goodness-of-fit, Test for Independence between two variables; Nonparametric Tests - Uses and Applications; Comparison with Parametric Tests

Tutorial component – **(15 Hours)**

Data Analysis, interpreting output, and presenting results:

- *t* test (Single Mean, Independent, Dependent Samples)
- One way ANOVA
- Chi-Square
- Non parametric
- Graphical presentation of results

Practical component – NIL

Essential/recommended readings

Howell, D. C., (2013). *Statistical Methods for Psychology*. Wadsworth.

King, B.M., Rosopa, P.J., & Minium, E.W. (2018). *Statistical Reasoning in the Behavioral Sciences* (7th Ed.). Wiley.

Suggestive readings

Aron, A., Coups, E.J. & Aron, E.N. (2013). *Statistics for Psychology* (6th Ed.) Pearson Education.

Garrett, H.E. (2005). *Statistics in Psychology and Education.* Paragon International Publishers.

Field, A. (2017). *Discovering Statistics Using IBM SPSS Statistics.* 5th Edition, Sage Publications Ltd., London.

Lindner, A. M. (2012). Teaching Quantitative Literacy through a Regression Analysis of Exam Performance. *Teaching Sociology,* 40(1), 50–59. http://www.jstor.org/stable/41503322

Mangal, S.K. (2010). *Statistics in Psychology and Education* (2nd Ed.). PHI Learning.

Veeraraghavan, V. & Shetgovekar, S. (2016). *Textbook of Parametric and Non- Parametric Statistics.* New Delhi: Sage.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.