

**SES's L.S. RAHEJA COLLEGE OF ARTS
AND COMMERCE
(AUTONOMOUS)**



Syllabus of Applied Statistical Methods under NEP 2020 vertical (Major) with effect from 2024-25

Department of Psychology

HoD/Sr. Person of the Department: Neha Dalal

Date of approval by the BoS: 27/04/2024

Approved by the Academic Council on: 29/04/2024

Ratified by the Governing Body on: 06/05/2024



Programme: Master of Arts			Semester: II		
Course: Applied Statistical Methods			Code: PGMAIIMJ324		
Academic Year: 2024-2025			Batch: 2024-2026		
Teaching Scheme			Evaluation Scheme		
Lectures	Practical	Tutorials	Credits	Internal Continuous Assessment (ICA) (weightage)	Term End Examinations (TEE) (weightage)
60	-	-	4	40	60
Particulars				Marks	
Class tests				20	
Projects				10	
Viva Voce				10	

Learning Objectives:	<ul style="list-style-type: none"> a. Develop a comprehensive understanding of fundamental statistical concepts and principles relevant to psychology. b. Learn to interpret statistical findings accurately and critically evaluate their significance in psychological research.
Learning Outcomes:	<ul style="list-style-type: none"> a. Design and execute appropriate statistical analyses to address research questions in psychology. b. Utilize statistical software packages for data analysis and visualization.
Pedagogy:	<ul style="list-style-type: none"> Interactive lectures PowerPoint presentation Practical demonstrations

Module	Module Content	Module Wise Pedagogy Used	Module Wise Duration
I	Fundamental Statistical Concepts: <ul style="list-style-type: none"> a. Descriptive Statistics b. Concept of Normality & Normal distribution c. Concept of Standard Scores, Null Hypothesis Statistical Testing (NHST) d. Level of Significance, Power and effect size 	<ul style="list-style-type: none"> Interactive lectures PowerPoint presentation Practical demonstrations 	15
II	Measures of Association and Prediction: <ul style="list-style-type: none"> a. Correlation, multicollinearity b. Linear Regression (OLD), Multiple Regression, Logistic Regression c. Mediation Analysis 	<ul style="list-style-type: none"> Interactive lectures PowerPoint presentation Practical demonstrations 	15

III	Inferential Statistics- Univariate & Multivariate: <ol style="list-style-type: none"> a. t-test b. ANOVA c. MANOVA and ANCOVA d. Non-parametric tests 	Interactive lectures PowerPoint presentation Practical demonstrations	15
IV	Factor Analysis and Software Packages: <ol style="list-style-type: none"> a. Factor analysis: Basic concepts, methods of extraction, and methods of rotation b. Confirmation factor analysis, Exploratory Factor Analysis c. Software Package in Social Sciences (SPSS), JASP, (Open source) R, Packages for qualitative analysis NVivo, Atlas 	Interactive lectures PowerPoint presentation Practical demonstrations	15

REFERENCE BOOKS

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- Gravetter, F. J. & Wallnau, L. B. (2012). *Statistics for the Behavioral Sciences* (9th ed), Wadsworth Publishing. Guilford, J. P., & Fructore, B. (1978). *Fundamental statistics for psychology and education*. N.Y.: McGraw-Hill.
- Gupta S.P. (2022). *Statistical Methods* (48th Ed), Sultan Chand, New Delhi.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis*. (5thEd.). N.J.: Prentice-Hall Inc.
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- Marcoulides, A. G. &Schumacker, E. R. (2001). *New developments and techniques in structural equation modelling*. Hillsdale, New Jersey: Lawrence Erlbaum.
- Minium, E. W., King, B. M., & Bear, G. (2021). *Statistical Reasoning in Behavioural Sciences* (7th Ed). Singapore: John-Wiley
- Minium, E. W., King, B. M., & Bear, G. (2001). *Statistical reasoning in psychology and education*. Singapore: John-Wiley.
- R Development Core Team. (2011). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing: Vienna, Austria.
- Sheskin, D. (2011). *Handbook of Parametric and Nonparametric Statistical Procedures*, (5th Ed). Chapman and Hall/CRC.
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- Wilcox, R. R. (1996). *Statistics for social sciences*. San Diego: Academic Press.
- Wilcox, R. R. (2017). *Modern Statistics for the Social and Behavioral Sciences: A Practical Introduction* (2nd ed). Chapman and Hall, New York

QUESTION PAPER PATTERN
(60 marks)

Q1. Answer any one (15 marks)

A. Unit one

Or

B. Unit one

Q2. Answer any one (15 marks)

A. Unit two

Or

B. Unit two

Q3. Answer any one (15 marks)

A. Unit three

Or

B. Unit three

Q4. Answer any one (15 marks)

A. Unit Four

Or

B. Unit Four