

Statistics Practical

Semester I & II	Subject Code: BSP21512	Lectures : 80
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Objectives:

The syllabus aims in equipping students with -

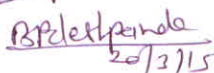
- Ability to prepare for postgraduate work or study in various fields of Statistics.
- Developing attitudes which aim to make them responsible members of the society.
- The methodology of designing research tools and interpretation and analysis of results and report writing.
- Application orientation of logic and objectivity in solution of problems of development and growth.
- Ability to offer research and consultancy services to advance societal development
- Sustainability in emerging process of digital technology and confront the challenges of modern technology and information system.

Unit 1: A) Practicals to be done manually using scientific calculator	No. of Lects.
• Measures of Central Tendency and Dispersion	(08)
• Measures of skewness and kurtosis	(04)
• Correlation and Linear Regression Analysis (for bivariate raw data) • Fitting non-linear models. (for bivariate raw data)	(08)
• Multiple and Partial Correlation and Regression Analysis. (for trivariate data)	(04)
• Time Series: Moving Average	(04)
• Fitting of Binomial and Poisson distributions. • Fitting of Normal Distribution.	(08)
• Model Sampling from Simple Continuous Distributions	(04)

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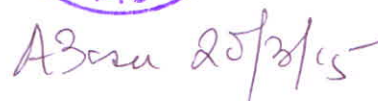
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<ul style="list-style-type: none"> • Large Sample Tests. • Tests based upon t distribution. • Tests based upon chi square distribution • Kolmogrov - Smirnov test • Sign test • Run test 	(16)
<ul style="list-style-type: none"> • SQC • Index Numbers 	(04)

Unit (10): B) Practicals to be done using any spreadsheet (like MS-Excel MS - Windows or Open-Office in Linux etc.)	No. of Lects.
<ul style="list-style-type: none"> • Diagrammatic Representation and Descriptive Statistics for raw data • For a bivariate raw data, fitting various models and finding the "best fit". • Multiple regression for three variables. • Using random numbers, drawing of a sample from uniform distribution, exponential distribution, normal distribution (Box Muller Transformation) etc. 	(12)

Unit (11): C) Project: group size (2-4)	(08) Lects.
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Recommended Text Books:

- Gupta S. C. and Kapoor V. K. 1987, Fundamentals of Applied Statistics (3rd Edition) S. Chand and Sons, New Delhi.
- Kulkarni M.B., Ghatpande S.B., Gore S.D. 1999, Common Statistical Tests Satyajeet Prakashan, Pune
- Kulkarni M.B., Ghatpande S.B. 2007, Introduction to Discrete Probability and Probability Distributions SIPF Academy
- Sarma K.V.S. 2001 Statistics Made Simple. Do it Yourself on P.C. Prentice Hall

Recommended References:

- Medhi J. 1992, Statistical Methods (An Introductory Text); New Age International
- Freund J.E. 2005, Modern Elementary Statistics Pearson Publication
- Trivedi K.S. 2001, Probability, Statistics, Design of Experiments and Queuing Theory with Applications of Computer Science Prentice Hall of India, New Delhi 9
- Ross S. M. 2006, A First Course In Probability 6th Edition Pearson publication
- Law A. M. and Kelton W. D. 2007, Simulation Modelling and Analysis Tata McGraw Hill
- Box G. E. P. and Jenkins G. M. 2008, Time Series Analysis, 4th edition Wiley
- Brockwell P. J. and Davis R. A. 2006, Time Series Methods Springer
- Snedecor G. W. Cochran W. G. 1989, Statistical Methods John Wiley & sons

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