

**VEER NARMAD SOUTH GUJARAT UNIVERSITY**  
University Campus, Udhana-Magdalla Road,  
Surat - 395 007.

**M.Sc.: APPLIED STATISTICS**

**Effective From: 2007 – 2008**

**SEMESTER – III**

Paper No.	Title of the Paper	Marks		
		Int.	Ext	Total
MAS-301	Statistics for Economics	30	70	100
MAS-302	Operations Research - I	30	70	100
MAS-303	Data Mining - I	30	70	100
MAS-304	Design of Experiments	30	70	100
MAS-305	Introduction to Statistical Softwares	30	70	100
MAS-306	Practical paper-V based on Paper - MAS-301, MAS-302, MAS-303	30	70	100
MAS-307	Practical paper-VI based on Paper - MAS-304, MAS-305	50	100	150
Viva-Voce		30	70	100
<b>Total</b>		<b>260</b>	<b>590</b>	<b>850</b>

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**SEMESTER : III**

**PAPER : MAS-301**

**STATISTICS FOR ECONOMICS**

1. Analysis of Time-Series.
2. Index Numbers.
3. Demand Analysis.
4. Input-Output Analysis.
5. Growth Models.

**REFERENCES**

1. Croxton E.F., Cowden D.J. and Klein S. : "Applied General Statistics".
2. Karmel P.H. : "Applied Statistics for Economics".
3. Kendall M. : "Time Series", Charles Giffin & Co.
4. Chatfield C. : "Analysis of Time Series" : Theory and Practice Chapman & Hall.
5. Sen A.K. : "Growth Economics" : Penguin Modern Economic Reading Edition.
6. Pillai S. : "Economic & Business Statistics"; Progressive Corporation Pvt. Ltd.
7. Mukhopadhyay P. : "Applied Statistics"; New Central Book Agency (P) Ltd.
8. Gupta S.C. and Kapoor V.K. : "Fundamentals of Applied Statistics"; Sultan Chand & Sons.

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**SEMESTER : III**

**PAPER : MAS-302**

**OPERATIONS RESEARCH – I**

1. Linear Programming.
2. Duality.
3. Transportation and Assignment Problems.
4. Inventory Management Systems.
5. Game Theory.

**REFERENCES**

1. K. Swarup, Gupta P.K. and Man Mohan : “Operations Research”; S.Chand & Co., New Delhi.
2. G. Hadley : “Linear Programming”; Oxford & IBH Pub. Co.
3. Murthy K.G. : “Linear and Nonlinear Programming”.
4. Kasana H.S. and Kumar K.D. : “Introductory Operations Research”; Springer.
5. Kapoor V.K. : “Operations Research”; S.Chand & Co., New Delhi.
6. Sharma S.D. : “Operations Research”; Kedar Nath Ram Nath & Co. Publishers, Meerut.

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**PAPER : MAS-303**

**DATA MINING - I**

1. Introduction to DBMS.
2. Introduction to Data Mining.
3. Types of data for Data Mining.
4. Data description.
5. Predictive Data Mining.
6. Models and Patterns.

**REFERENCES**

1. Jiawei Han, Micheline Kamber : "Data Mining"; Morgan Kaufmann Publishers.
2. Hillol Kargupta, Anupam Joshi, Yelena Yesha, Krishnamoorthy Sivakumar : "Data Mining - Next Generation Challenges and Future Decisions"; PHI.
3. Danuham : "Data Mining - Introductory and Advance Topics"; Pearson.

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**PAPER : MAS-304**

**DESIGN OF EXPERIMENTS**

Concept and history of Design of experiments.

The need for Designed experiments.

Elementary ideas of blocking and randomized block design.

Elementary idea of treatment structure and Basic principles of Design of experiments

Concept of complete and incomplete block designs. Completely Randomized Design (CRD), Randomized Block Design (RBD), Latin square design (LSD), their analysis with applications.

Missing plot technique for RBD, LSD with their applications.

**Analysis of Covariance** : Analysis of covariance for CRD, RBD and LSD.

Concept of BIBD and its properties. Intra block analysis of BIBD, Youden square design, Cross over design, construction of BIBD, Missing plot technique for BIBD.

**Factorial Experiments** : Characterization of experiments, factorial experiments, factorial experiments with factors at two levels, grouping for interaction contrasts, confounding, confounding in more than two blocks, experiments with factors at three levels each, analysis of factorial experiments, split-plot designs.

**REFERENCES**

1. Montgomery D. C. : "Design and Analysis of Experiments"; John Wiley & Sons, New York.
2. R. Mead : "The design of experiments : Statistical principles for application"; Cambridge Uni. Press.
3. Cochran W.G. and Cox G.M. : "Experimental Designs"; John Wiley & Sons, Inc., New York.
4. Das M.N. and Giri N.C. : "Design and Analysis of Experiments"; Wiley Eastern Ltd., New Delhi.
5. Federer W.T. : "Experimental Design : Theory and Application"; The Macmillan Co., New York.
6. Kempthorne O. : "The Design and Analysis of Experiments"; John Wiley & Sons, Inc., New York.
7. Panse V.G. and Sukhatme P.V. : "Statistical Methods for Agricultural Workers"; Indian Council of Agricultural Research, New Delhi.
8. R. Mead : "The Design of Experiments - Statistical Principles for Application" ; Cambridge Uni. Press.

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**PAPER : MAS-305**

**INTRODUCTION TO STATISTICAL SOFTWARES**

Introduction and use of Matlab, Sys-STAT, SPSS and other such statistical packages for analysis of practical problems.

**REFERENCES**

1. Chapman Stephen: "Matlab programming for engineers"; Thompson learning.
2. Rudra Pratap: "Getting started with Matlab"; Oxford university press.
3. Marques J.P.: "Applied Statistics using SPSS, Statistica and Matlab"; Springer-Verlag, London.
4. Miller R. L., Ciaran Acton and Fullerton D. A., John Malthy : "SPSS for Social Scientists" ; Palgrave Macmilan.
5. Wagner W. E. III : "Using SPSS for Social Statistics and Research Methods" ; Wagner.
6. Einspruch E. L. : "An Introductory Guide to SPSS for Windows" ; Einsprucho .
7. Pandya K. and Bulsari S. : "Enjoy Statistics with SPSS for Windows" ; Popular.
8. Gaur A. S. and Gaur S. S. : "Statistical Methods for Practice and Research-A guide to data analysis using SPSS" ; Gaur and Gaur.