Symbiosis College of Arts and Commerce

(An Autonomous College Affiliated to University of Pune)

SYMBIOSIS

Subject code		Semester	I	II	III	IV	V	VI	**M.A.**	I	**II**	III	IV
Title of Subject								**STATISTICAL METHODS**					

Objectives	1. To acquaint the students and make them understand the different statistical methods with their uses and interpretations, 2. To develop computational skills in students, 3. To enable them to analyze the data of practical and project work.

Unit	Contents of the syllabus	Number of Lectures
1	**Chapter 1. OVERVIEW OF DESCRIPTIVE STATISTICS & PROBABILITY** 1.1. Overview of measures of Central tendency, variability, curves and graphs 1.2 Percentiles, percentile ranks and standard scores 1.3. Probability: Concept, definition, and approaches 1.4. Characteristics of normal distribution curve 1.5. Applications of normal distribution curve.	10
2	**Chapter 2. CORRELATION AND REGRESSION** 2.1. Concept and meaning of correlation 2.2. Pearson's Product-Moment Correlation 2.3. Point – Biserial Correlation and Phi-coefficient 2.4. Bi-serial and tetra choric correlation 2.5. Partial and Multiple Correlation 2.6. Simple Linear Regression: Concept and uses	10
3	**Chapter 3. INFERENTIAL STATISTICS** 3.1. Inferences: Standard error of mean and other statistics 3.2. Significance of difference for means, variances and correlation coefficients. 3.3. Assumptions of Analysis of Variance, and One-way ANOVA- Independent, concept of repeated measures 3.4. Two-way ANOVA - Independent, concept of repeated measures 3.5. Analysis of Covariance: Concept.	10
4	**Chapter 4. NON-PARAMETRIC STATISTICS** 4.1. Difference between Parametric and Non-parametric statistics 4.2. Chi Square tests 4.3. Non-parametric tests for correlated data- Rank Difference Correlation, Sign Test, Wilcoxon Signed Rank test 4.4. Non-parametric tests for uncorrelated data - Mann-Whitney U-test and Kruskal-Wallis Test 4.5. Statistical software: An introduction – SPSS, Excel	10
	Total Number of Lectures	40

Suggested Reference Books

1. Minium E.W., King B. M., Bear G. (1995). *Statistical Reasoning in Psychology and Education*
2. Guilford J. P. and Fruchter B. (1985). *Fundamental Statistics in Psychology and Education* (6th ed) McGraw
3. Howell D.C. (1997). *Statistical Methods for Psychology* (4th Ed)
4. Sarma K.V.S. (2001) *Statistic Made Simple : Do it Yourself on PC*
5. Welkowitz, J., Emen, R. B. and Cohen, J. (1982). *Introductory statistics for the behavioural sciences* (3rd ed)
6. Fergusson, G. A. (1976). *Statistical analysis in psychology and education.* McGraw-Hill.
7. Glass, G. V. & Stanley, J. C. (1970). *Statistical methods in education and psychology.* Prentice-Hall.
8. Kurtz, A.K. & Mayo, S.T. (1979). *Statistical methods in education and psychology.* Narosa.
9. Lomax, R. G. (1998). *Statistical concepts: A second course for education and behavioural sciences.* N.J.:.
10. Mangal, S. K. (2006). *Statistics in psychology and education.* N.D.: Prentice-Hall
11. Levin, J. & Fox, J. A. (2006). *Elementary statistics in social research.* Delhi: Pearson Education.
12. Black, T.R. (1999). *Doing quantitative research in the social sciences: An integrated approach to research design, measurement and statistics.* London: Sage Pub.
13. Foster, J.J. (2001). *Data analysis: Using SPSS for windows.* London: Sage Pub.