

## STAT01GE01: Statistical Methods

Paper Number	<b>STAT01GE01</b>
Paper Title	<b>Statistical Methods</b>
No. of Credits	<b>6</b>
No. of classes	Theory: 4 Practical: 4
Syllabus	<p><b>Unit 1</b> Introduction: Definition and scope of Statistics, concepts of statistical population and sample. Data: quantitative and qualitative, attributes, variables, scales of measurement - nominal, ordinal, interval and ratio. Presentation: tabular and graphic, including histogram and ogives. <b>35L</b></p> <p><b>Unit 2</b> Measures of Central Tendency: mathematical and positional. Measures of Dispersion: range, quartile deviation, mean deviation, standard deviation, coefficient of variation, moments, skewness and kurtosis. <b>40L</b></p> <p><b>Unit 3</b> Bivariate data: Definition, scatter diagram, simple, partial and multiple correlation (3 variables only), rank correlation. Simple linear regression, principle of least squares and fitting of polynomials and exponential curves <b>30L</b></p> <p><b>Unit 4</b> Theory of attributes, consistency of data, independence and association of attributes, measures of association and contingency. <b>23L</b></p>
List of Practical	<ol style="list-style-type: none"> <li>1. Graphical representation of data</li> <li>2. Problems based on measures of central tendency</li> <li>3. Problems based on measures of dispersion</li> <li>4. Problems based on combined mean and variance and coefficient of variation</li> <li>5. Problems based on moments, skewness and kurtosis</li> <li>6. Fitting of polynomials, exponential curves</li> <li>7. Karl Pearson correlation coefficient</li> <li>8. Partial and multiple correlations</li> <li>9. Spearman rank correlation with and without ties.</li> <li>10. Correlation coefficient for a bivariate frequency distribution</li> <li>11. Lines of regression, angle between lines and estimated values of variables.</li> <li>12. Checking consistency of data and finding association among attributes.</li> </ol>
Reading/ Reference list	<ol style="list-style-type: none"> <li>1. Goon A.M., Gupta M.K. and Dasgupta B. (2002): Fundamentals of Statistics, Vol. I &amp; II, 8th Edn. The World Press, Kolkata.</li> <li>2. Das, N.G.: Statistical Methods, Vol I and II, Tata McGraw Hill Pub. Co. Ltd.</li> <li>3. Miller, Irwin and Miller, Marylees (2006): John E. Freund's Mathematical Statistics with Applications, (7th Edn.), Pearson Education, Asia.</li> <li>4. Mood, A.M. Graybill, F.A. and Boes, D.C. (2007): Introduction to the Theory of Statistics, 3rd Edn., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.</li> </ol>