

## Lesson Plan

### BUSINESS STATISTICS & RESEARCH TECHNIQUES

I B.Com. - II Sem.

#### Module Wise

Unit/ Session/ Hours (Time Required)	Topics For Student Preparation (Input)	Procedure (Process)	Learning Outcome (Output)	Assessment
<b>Unit I 5hours</b>	Importance of statistics Research-purpose -Type-step Classification and Tabulation of data	<ul style="list-style-type: none"><li>• Lecture</li><li>• Work out problems</li><li>• Activity (Using Excel)</li></ul>	<b>Conceptual &amp; Skills:</b> Usage of statistics in research data	Assignment, project and test
<b>Unit II 13 hours</b>	Mean, median, mode, SD and variance	<ul style="list-style-type: none"><li>• Lecture</li><li>• Work out problems</li><li>• Activity (Using Excel)</li></ul>	<b>Conceptual &amp; Skills:</b> Measure of central tendency and dispersion	Assignment and test
<b>Unit III 12 hours</b>	Probability Random experiment Sample space	<ul style="list-style-type: none"><li>• Lecture</li><li>• Work out problems</li></ul>	<b>Conceptual &amp; Skills:</b> Importance of probability in research	Assignment and test
<b>Unit IV 15 hours</b>	Hypothesis testing Null & alternative	<ul style="list-style-type: none"><li>• Lecture</li><li>• Work out problems</li><li>• Activity (Using Excel)</li></ul>	<b>Conceptual &amp; Skills:</b> Level of significance Different test	Assignment, practical and test

<b>Unit V</b> <b>10 hours</b>	Statistical tools for research analysis	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Work out problems</li> <li>• Activity (Using Excel)</li> </ul>	<b>Conceptual &amp; Skills:</b> Time series Correlation Regression	Assignment and test
<b>Unit VI</b> <b>5 hours</b>	Diagrammatic & graphical representation data	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Work out problems</li> <li>• Activity (excel)</li> </ul>	<b>Conceptual &amp; Skills:</b> Different diagram and graphs	Assignment, practical and test

### Hourly Wise

**Subject Name:** Business Statistics & Research Techniques

**Hours: 60**

**Objective:** To enhance students to grasp the fundamentals of statistics for interpreting business data. To familiarize students with the concepts and techniques of business research using MS-Excel

Sl. No.	UNITS	No. of Lecture Hours	Methodology/Instructional techniques	Evaluation/learning confirmation
<i>Module I</i>	<i>Introduction</i>	<i>4+1</i>		
1.	Importance of statistics, scope ,limitations	1	Lecture and illustration	Discussion and Practical
2.	definition of research , purpose	1	Lecture and illustration	Discussion and Practical
3.	scope and types of research , steps in research	1	Lecture and illustration	Discussion and Practical
4.	classification of data, formation of statistical series, tabulation	1	Lecture and illustration	Discussion and Practical
5.	tabulation	1	Activity	Activity
<i>Module II</i>	<i>Measures of central tendency and dispersion</i>	<i>13</i>		

1.	Mean	1	Lecture and illustration	Discussion and Practical
2.	median	1	Lecture and illustration	Discussion and Practical
3.	mode	1	Lecture and illustration	Discussion and Practical
4.	geometrics mean	1	Lecture and illustration	Discussion and Practical
5.	Quartiles, Range	2	Lecture and illustration	Discussion and Practical
6.	quartile deviation	1	Lecture and illustration	Discussion and Practical
7.	mean deviation from mean	1	Lecture and illustration	Discussion and Practical
8.	median & mode	2	Lecture and illustration	Discussion and Practical
9.	standard deviation and coefficient of variation	3	Lecture and illustration	Discussion and Practical
<b>Module III</b>	<b>Probability</b>	<b>12</b>		
1.	Classical or mathematical definition of probability	2	Lecture and illustration	Discussion and Practical
2.	random experiment, equally likely outcomes	2	Lecture and illustration	Discussion and Practical
3.	sample space- mutually exclusive events	2	Lecture and illustration	Discussion and Practical
4.	complement of an event , dependent event, independent event,	3	Lecture and illustration	Discussion and Practical
5.	conditional probability (simple problems), importance of probability in research.	3	Lecture and illustration	Discussion and Practical
	<b>Modules 1,2&amp;3 tentative portions for MIT</b>			
<b>Module IV</b>	<b>Hypothesis testing</b>	<b>14+1</b>		
1.	Formation of null and alternative hypothesis,	3	Lecture and illustration	Discussion and Practical
2.	level of significance, type I and type II errors,	4	Lecture and illustration	Discussion and Practical

3.	hypothesis – T-test, Z-test Test for single mean and difference between two means only.	5	Lecture and illustration	Discussion and Practical
4.	Chi-square test (simple problems).	2	Lecture and illustration	Discussion and Practical
5.	Testing of hypothesis with suitable data in excel	1	Activity	Activity
<b>Module V</b>	<b>Statistical tools for research analysis</b>	10		
1.	Time series and its application	1	Lecture and illustration	Discussion and Practical
2.	correlation –scatter diagram, karl pearson & spearman’s coefficient of correlation	4	Lecture and illustration	Discussion and Practical
3.	coefficient of determination and coefficient of non determination	3	Lecture and illustration	Discussion and Practical
4.	regression analysis	2	Lecture and illustration	Discussion and Practical
<b>Module VI</b>	<b>Diagrammatic &amp; graphical representation of data</b>	4+1		
1.	Diagrams: utilities , limitations, construction of one dimensional ,two dimensional and three dimensional diagrams	1	Lecture and illustration	Discussion and Practical
2.	Graphs: utilities ,limitations , constitution, frequency distribution , histogram, frequency curve and ogives	3	Lecture and illustration	Discussion and Practicaltype
3.	Different type of graphs in Excel	1	Activity	Activity

### BOOKS FOR REFERENCE

1. C.B.Gupta: Statistics, Himalaya Publications.
2. Chikkodi & B.G.Satya Prasad: Business Statistics, Himalaya Publications.
3. Dr. Asthana: Elements of Statistics , Chaitanya
4. Dr. Sancheti & Kapoor : Statistics Theory , Methods and Application.
5. Ellahance : Statistical Methods
6. S.P.Gupta : Statistical Methods, Sultan Chand ,Delhi.