



# GUJARAT UNIVERSITY

## BCA III SYLLABUS

<b>COURSE TITLE</b>	<b>STATISTICAL METHODS</b>
<b>COURSE CODE</b>	<b>CC-205</b>
<b>COURSE CREDIT</b>	<b>3</b>
<b>Session Per Week</b>	<b>4</b>
<b>Total Teaching Hours</b>	<b>40 HOURS</b>

### AIM

To develop the skill about the basic statistics.

To develop the ability to find approximate solutions and/or answer by choosing correct statistical technique for a given problem.

### LEARNING OUTCOMES

On the completion of the course students will:

1. Get a working knowledge of statistical methods.
2. Understand the use of statistical methods with computer related computational approach.
3. With statistical techniques so that they are prepared to apply the knowledge in the field of computer science.

### DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
1	<b>Introduction and Measures of Central Tendency</b>	<b>10</b>
	Introduction: <ul style="list-style-type: none"><li>•Meaning of Statistics</li><li>•Types of Statistical Methods</li><li>•Scope or Importance of Statistics</li><li>•Limitations of Statistics</li></ul>	<b>1</b>
	Measures of Central Tendency <ul style="list-style-type: none"><li>o Introduction<ul style="list-style-type: none"><li>• Characteristics of a Good Average.</li><li>• Different Types of Measures of Central Tendency</li></ul></li><li>o Mean<ul style="list-style-type: none"><li>• Arithmetic Mean</li><li>• Arithmetic Mean of Grouped Frequency Distribution</li><li>• Short-cut Method and Step-Deviation Method of</li><li>• Obtaining Arithmetic Mean (Excluding Mathematical Properties of A.M)</li><li>• Combined Arithmetic Mean</li><li>• Cumulative Arithmetic Mean</li><li>• Advantages, disadvantages and uses of Arithmetic Mean, Geometric Mean, G. M, H.M.</li><li>• Relation Among A.M.,G.M.,H.M.</li><li>• Weighted Arithmetic Mean</li></ul></li></ul>	<b>9</b>

	<ul style="list-style-type: none"> <li>o Median <ul style="list-style-type: none"> <li>• Individual Frequency Distribution</li> <li>• Ungrouped Frequency Distribution</li> <li>• Grouped Frequency Distribution</li> <li>• Advantages, disadvantages and uses of Median</li> </ul> </li> <li>o Mode <ul style="list-style-type: none"> <li>• Individual Frequency Distribution</li> <li>• Ungrouped Frequency Distribution</li> <li>• Grouped Frequency Distribution</li> <li>• Advantages, disadvantages and uses of Mode</li> </ul> </li> </ul>	
2	<b>Measures of Dispersion</b>	<b>10</b>
	<ul style="list-style-type: none"> <li>• Quartiles, Deciles and Percentiles</li> <li>• Introduction, Objectives and essentials of a good measure</li> </ul>	<b>1</b>
	<ul style="list-style-type: none"> <li>o Absolute and Relative Measures of Dispersion</li> <li>o Range</li> <li>o Quartile Deviation <ul style="list-style-type: none"> <li>• Advantages and disadvantages of Q.D.</li> <li>• Coefficient of Quartile Deviation</li> </ul> </li> </ul>	<b>2</b>
	<ul style="list-style-type: none"> <li>o Mean Deviation <ul style="list-style-type: none"> <li>• Coefficient of Mean Deviation</li> <li>• Advantages and disadvantages of M.D.</li> </ul> </li> <li>o Standard Deviation <ul style="list-style-type: none"> <li>• Alternative Method of Standard Deviation</li> <li>• Relationship among Q.D., M.D., S.D.</li> <li>• Advantages and disadvantages of S.D.</li> </ul> </li> </ul>	<b>5</b>
	<ul style="list-style-type: none"> <li>o Variance (Excluding Properties of S.D)</li> <li>• Coefficient of Variation</li> <li>• Direct Method</li> <li>• Step-Derivation Method</li> </ul>	<b>2</b>
3	<b>Probability and Probability Distribution</b>	<b>10</b>
	<p>Probability:</p> <ul style="list-style-type: none"> <li>o Introduction</li> <li>o Definitions of Some Important Terms <ul style="list-style-type: none"> <li>• Random Experiment</li> <li>• Trial Event</li> <li>• Favorable Cases</li> <li>• Equally Likely Events</li> <li>• Mutually Exclusive Events</li> <li>• Exhaustive Events</li> <li>• Dependent Events</li> <li>• Independent Events</li> </ul> </li> </ul>	<b>2</b>
	<ul style="list-style-type: none"> <li>o Statistical approach to probability</li> <li>o Modern approach to probability</li> <li>o Symbols associated with probability</li> <li>o Algebra of sets</li> <li>o Conditional Probability</li> <li>o Theorems (Laws) of Probability(Without Proof)</li> <li>o Baye's Rule(only for two events)</li> </ul>	<b>6</b>

	<ul style="list-style-type: none"> <li>o Random Variable</li> <li>o Probability Distribution and its types</li> <li>o Binomial Distribution</li> <li>o Characteristics of Binomial Distribution</li> </ul>	<b>2</b>
<b>4</b>	<b>Correlation Analysis And Regression Analysis</b>	<b>10</b>
	Correlation Analysis o Introduction o Types of Correlation <ul style="list-style-type: none"> <li>• Positive, Negative and Zero Correlation</li> <li>• Linear and non-linear Correlation</li> <li>• Simple, Multiple and Partial Correlation</li> <li>• Positive, Negative and Zero Correlation</li> <li>• Methods of Measuring Correlation</li> <li>• Karl Pearson's Product Moment Method</li> <li>• Spearman's Rank Method</li> </ul>	<b>6</b>
	Regression Analysis o Regression Equation. o Method of Least Squares. o The regression equation of Y on X o The regression equation of X on Y o Regression Coefficient & Its Properties (without proof) o Correlation Versus Regression	<b>4</b>

### TEXT BOOK/S:

**Business Statistics (Fourth Edition)**

**Publication: Vikas Publication House Pvt.Ltd.**

**By J.K.Sharma**

**Chapter- 1 (1.4 to 1.7)**

**Chapter- 3 (3.4 to 3.11)**

**Chapter- 4 (4.3, 4.4, 4.5.1, 4.5.2, 4.5.3)**

**Chapter- 6 (6.1 to 6.6)**

**Chapter- 7 (7.1, 7.2, 7.5.1)**

### REFERENCE BOOKS:

1. Business Statistics (Third Revised Edition)

Publication: S.Chand

By Padmalochan Hazarika

2. Business Mathematics and Statistics

Publication: Tata McGraw Hill Education Private Limited

By N G Das and J K Das

### WEB RESOURCES:

### REQUIRED SOFTWARE/S