

**Anekant Education Society's
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati**

Autonomous

Course Structure for F. Y. B. Com. STATISTICS

Semester	Paper Code	Title of Paper	No. of Credits
I	COMBS1104A	Business Statistics-I	3
II	COMBS1204A	Business Statistics-II	3

Program Outcomes (POs) for B.Com. Programme

PO1	Knowledge and Critical Thinking : Acquire skills in organising, analysing, evaluating and presenting information. Able to analysis issues logically, consider different options and viewpoints, make decisions and act with flexibility, adaptability and creativity.
PO2	Communication Skill : Able to communicate effectively, analyse the concepts and participate in healthy arguments and portray skill in communication and in writing. Possess skills related with banking and other business.
PO3	Independent learning : Demonstrate the ability to acquire knowledge and business skills, the capacity for self directed activity and the ability to work independently.
PO4	Leadership quality : Exhibit qualities associated with leadership such as accountability, integrity, respect, self reflection
PO5	Teamwork : Able to work constructively, cooperatively, effectively and respectfully as part of a team.

SYLLABUS(CBCS) FOR F. Y. B. Com. STATISTICS (w.e. from June, 2019)

Academic Year 2019-2020 (2019 pattern)

Class : F.Y. B. Com. (Semester- I)

Paper Code: COMBS1104A

Paper : I

Title of Paper: Business Statistics-I

Credit : 3 credits

No. of lectures: 48

A) Course Objectives:

Students will be able to

1. develop a strong foundation to analyze and interpret data in various fields.
2. Basic concept of shares and dividend.
3. Compute various measures of central tendency and dispersion.
4. Summarize data using frequency distributions and graphical representations.
5. Gain knowledge of different types of data.
6. Develop effective written and oral communication skills to present and explain descriptive statistics results clearly and accurately.

B) Course Outcomes:

The students will acquire knowledge about the;

- CO1. concept of share, face value, market value, dividend, equity shares, preferential shares and bonus shares.
- CO2. concept of population and sample.
- CO3. draw the descriptive statistics for the data and interpret the data with the appropriate graphs.
- CO4. applications of various measures of central tendency in real life .
- CO5. applications of various measures of dispersion in real life.
- CO6. Find the determinant of a product of square matrices, of the transpose of a square matrix, and of the inverse of an invertible matrix
- CO7. Solve the matrix equation $Ax = b$ using row operations and matrix operations.
- CO8. concept of Matrices and to calculate determinant and inverse of matrix.

TOPICS/CONTENTS:

UNIT 1: Shares and Dividends **[4L]**

Concept of Shares, Stock exchange, Face Value, Market Value, Dividend, Equality Shares, Preferential Shares, Bonus Shares, Examples.

UNIT 2: Matrices and Determinants (up to order 3 only) **[12L]**

Multivariable data, Definition of a Matrix, Types of Matrices, Algebra of Matrices, Determinants, Adjoint of a Matrix, Inverse of a Matrix via adjoint Matrix, Homogeneous System of Linear equations, Condition for Consistency of homogeneous system, Solution of Non-homogeneous System of Linear equations (not more than three variables). Problems.

UNIT 3: Population and Sample **[4L]**

Definition of Statistics, Scope of Statistics in Economics, Management Science and industry. Concept of population and sample with illustration. Method of sampling –SRSWR, SRSWOR, Stratified, Systematic, (Description of sampling procedures only).

UNIT 4: Measures of Central Tendency **[10L]**

Frequency distribution: Raw data, attributes and variables, Classification of data, frequency distribution, cumulative frequency distribution, Histogram & ogive curves.

Mean median and mode for ungrouped and grouped data.

Geometric mean: definition, merits and demerits.

Harmonic mean: definition, merits and demerits.

Choice of A.M., G.M. and H.M.

Examples and problems.

UNIT 5: Measures of Dispersion **[6L]**

Concept of dispersion, Measures of dispersion: Range, Variance, Standard deviation (SD) for grouped and ungrouped data, combined SD Measures of relative dispersion: Coefficient of range, coefficient of variation.

References:

1. Sheldon M. Ross: An Elementary Introduction to Mathematical Finance
2. Gupta S. C. and Kapoor V. K.: Fundamentals of Mathematical Statistic, Sultan Chand and Sons, 23, Daryaganj, New Delhi 110002.
3. Gupta S. P.: Statistical Methods, Sultan Chand and Sons, 23, Daryaganj, New Delhi 110002.
4. Mukhopadhyaya Parimal (1999): Applied Statistics, New Central Book Agency, Pvt. Ltd. Calcutta. 11.
5. Goon A. M., Gupta, M. K. and Dasgupta, B. (1986): Fundamentals of Statistics, Vol. 2, WorldPress, Calcutta.
6. Gupta S. C. and Kapoor V. K. (1987): Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi.

Course Outcomes	Programme Outcomes (POs)				
	PO1	PO2	PO3	PO4	PO5
CO1	3				
CO2	3				
CO3	3	2			
CO4	3	2			
CO5	3				
CO6	3		2		
CO7	3	2			
CO8	3		2		

Weight: 1 - Partially related 2 - Moderately Related 3 - Strongly related

Justification:

PO1: Knowledge and Critical Thinking (Weightage: 3)

- **CO1:** Concept of share, face value, market value, dividend, equity shares, preferential shares, and bonus shares.

Justification: Understanding financial concepts requires critical thinking and foundational knowledge in economics and finance.

- **CO2:** Concept of population and sample.

Justification: Critical thinking is essential in understanding statistical concepts such as population and sample.

- **CO3:** Draw the descriptive statistics for the data and interpret the data with the appropriate graphs.

Justification: Descriptive statistics involve critical thinking to interpret data effectively.

- **CO4:** Applications of various measures of central tendency in real life.
Justification: Applying measures of central tendency in real-life scenarios demands critical thinking and a strong knowledge base.
- **CO5:** Applications of various measures of dispersion in real life.
Justification: Understanding and applying measures of dispersion require critical thinking and knowledge in statistical concepts.
- **CO6:** Find the determinant of a product of square matrices, of the transpose of a square matrix, and of the inverse of an invertible matrix.
Justification: Critical thinking is crucial in understanding and calculating matrix operations.
- **CO7:** Solve the matrix equation $Ax = b$ using row operations and matrix operations.
Justification: Critical thinking is essential in solving matrix equations using various operations.
- **CO8:** Concept of Matrices and to calculate determinant and inverse of matrix.
Justification: Critical thinking is required to understand and apply matrix concepts.

PO2: Communication Skill (Weightage: 2)

- **CO3:** Draw the descriptive statistics for the data and interpret the data with the appropriate graphs.
Justification: Communicating findings effectively is crucial in presenting descriptive statistics.
- **CO4:** Applications of various measures of central tendency in real life.
Justification: Communicating the results of central tendency measures is essential in real-life applications.
- **CO7:** Solve the matrix equation $Ax = b$ using row operations and matrix operations.
Justification: Effectively communicating solutions to matrix equations is crucial.

PO3: Independent Learning (Weightage: 2)

- **CO6:** Find the determinant of a product of square matrices, of the transpose of a square matrix, and of the inverse of an invertible matrix.
Justification: Independent learning is necessary for understanding and applying complex matrix operations.
- **CO8:** Concept of Matrices and to calculate determinant and inverse of matrix.
Justification: Independent learning is crucial in understanding matrix concepts and calculations.