

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

**Autonomous**

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

<b>Semester</b>	<b>Paper Code</b>	<b>Title of Paper</b>	<b>No. of Credits</b>
I	COMBS1104A	Business Statistics-I	2
II	COMBS1204A	Business Statistics-II	2

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

**Academic Year 2019-2020**

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

Paper Code: COMBS1104A

Paper : I

Title of Paper: Business Statistics-I

Credit : 2 credits

No. of lectures: 36

## **A) Learning Objectives:**

1. To understand concept of population and sample.
2. To compute various measures of central tendency, dispersion, skewness and kurtosis.
3. To understand concept of shares and to calculate dividend.

## **B) Learning Outcome:**

The main outcome of this course is to acquaint students with initial description of the data as part of a more extensive statistical analysis by using some elementary statistical methods.

## **TOPICS/CONTENTS:**

### **UNIT1: Shares and Dividends**

**[4L]**

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

### **UNIT2: 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.

**UNIT3: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.

**UNIT5: 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, World Press, Calcutta.
6. Gupta S. C. and Kapoor V. K. (1987): Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi.

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

## Academic Year 2019-2020

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

Paper Code: COMBS1204A

Paper : I

Title of Paper: Business Statistics-II

Credit : 2 credits

No. of lectures: 36

### A) Learning Objectives:

- i) Understand concept of permutation and combination.
- ii) Handle problems involving maximize the profit and minimize the cost with linear constraints.
- iii) To use correlation and regression to estimate the relationship between two variables.

### B) Learning Outcome:

The main outcome of this course is to acquaint students with initial description of the data as part of a more extensive statistical analysis by using some elementary statistical methods.

### TOPICS/CONTENTS:

#### UNIT1: Permutations and Combinations

[4L]

Permutations of 'n' dissimilar objects taken 'r' at a time (with or without repetition)

$${}^n P_r = \frac{n!}{(n-r)!} \text{ (without proof).}$$

Combinations of 'r' objects taken from 'n' objects  ${}^n C_r = \frac{n!}{r!(n-r)!}$  (without proof) problems, Applications.

#### UNIT 2: Sample Space, Events and Probability

[10L]

Experiments and random experiments. Ideas of deterministic and nondeterministic experiments. Definition of – sample space, discrete sample space, events. Types of events, Union and intersections of two or more events, mutually exclusive events. Complementary event, Exhaustive event. Simple examples, Classical definition of probability, Addition theorem of probability without proof (upto three events are expected), Definition of Conditional probability Definition of independence of two events simple numerical problems.

#### UNIT 3: Linear Programming Problems (LPP) (for two variables only)

[6L]

Definition and terms in a LPP, formulation of LPP, Solution by Graphical method, problems.

#### **UNIT4: Correlation and Regression**

[10L]

Concept and type of correlation scatter diagram, interpretation with respect to magnitude and direction of relationship.

Karl Pearson's coefficient of correlation for ungrouped data. Spearman's rank correlation coefficient.

Concept of regression. Lines of regression for ungrouped data, predictions using lines of regression. Regression coefficients and their properties (without proof).

#### **UNIT5: Index numbers**

[6L]

Concept of index number, price index number, price relatives. Problems in construction of index number. Construction of price index number:

Weighted index Number, Laspeyre's, Paasche's and Fishers method. Cost of living / consumer price index number: Definition and problems in construction.

Methods of construction: Family budget and aggregate expenditure. Inflation Uses of index numbers, commonly used index numbers.

#### **References:**

- 1 Gupta S. C. and Kapoor V. K.: Fundamentals of Mathematical Statistic, Sultan Chand and Sons, 23, Daryaganj, New Delhi 110002.
- 2 Gupta S. P.: Statistical Methods, Sultan Chand and Sons, 23, Daryaganj, New Delhi 110002.
- 3 Mukhopadhyaya Parimal (1999): Applied Statistics, New Central Book Agency, Pvt. Ltd. Calcutta. 11.
- 4 Goon A. M., Gupta, M. K. and Dasgupta, B. (1986): Fundamentals of Statistics, Vol. 2, World Press, Calcutta.
- 5 Gupta S. C. and Kapoor V. K. (1987): Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi.
- 6 Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye: Probability & Statistics for Engineers & Scientists