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	UCBS111(A)	Business Statistics-I	3
II	UCBS121(A)	Business Statistics-II	3

Name of the Programme	**:** B.Com. Business Statistics
Program Code	**:** UCBS
Class	**:** F.Y.B.Com.
Semester	**:** II
Course Name	**:** Business Statistics – II
Course Code	**:** UCBS121(A)
No. of Lectures	**:** 48
Credit	**:** 3 credits

Course Outcomes:

The students will be able to understand

1. skewness and kurtosis.
2. random experiment, probability.
3. correlation and regression to estimate the relationship between two variables.
4. economy with the help of Index numbers.
5. handle problems involving maximizing the profit and minimizing the cost with linear constraints.

TOPICS/CONTENTS:

UNIT 1: Moment, Skewness and Kurtosis   [10 L]

Concept of Raw and central moments: Formulae for ungrouped and grouped data (only first four moments), the relation between central and raw moments up to fourth order. (Without proof), Measures of Skewness: Types of skewness, Pearson's and Bowley's coefficient of skewness, Measure of skewness based on moments. Measure of Kurtosis: Types of kurtosis, Measure of kurtosis based on moments.

UNIT 2: Sample Space, Events and Probability   [12 L]

Permutations of 'n' dissimilar objects taken 'r' at a time (with or without repetition) $^{n}P_r = \dfrac{n!}{(n-r)!}$ (without proof). Combinations of 'r' objects taken from 'n' objects $^{n}C_r = \dfrac{n!}{r!\,(n-r)!}$ (Without proof) problems, 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: 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).

UNIT 4: Index numbers [8L]

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.

UNIT 5: Linear Programming Problems (LPP) (for two variables only) [8L]

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

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. Mukhopadhya 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
7. Moore D. S., Norz W. I, Flinger M. A., (2013), The Basic Practice of Statistics, Sith Edition, Freeman and Company New York
8. Brase C.H. and Brase C. P, (2018), Understandable Statistics, Twelfth Edition, Cengage Learning
9. Biston Feedman D., Pisani R., Purves R. (2007), Statistics, Fourth Edition, W. W. Nortan and Company, New York