

**Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)**

**Semester: I**

**Business Mathematics & Statistics- I**

**Course Code – 114 (A)**

**No. of Credits :- 03**

**Objective of the Program**

1. To introduce the basic concepts in Finance and Business Mathematics and Statistics
2. To familiar the students with applications of Statistics and Mathematics in Business
3. To acquaint students with some basic concepts in Statistics.
4. To learn some elementary statistical methods for analysis of data.
5. The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose/Skills to be developed</b>
1	<b>Interest and Annuity</b>	<b>Interest:</b> Concept of Present value and Future value, Simple interest, Compound interest, Nominal and Effective rate of interest, Examples and Problems <b>Annuity:</b> Ordinary Annuity, Sinking Fund, Annuity due, Present Value and Future Value of Annuity, Equated Monthly Installments (EMI) by Interest of Reducing Balance and Flat Interest methods, Examples and Problems.	<ol style="list-style-type: none"> <li>1. To understand the concept of Simple interest, compound interest, effect of compounding.</li> <li>2. To understand the concept of Annuity and its applications for EMIs and Amortization Schedule.</li> </ol>
2	<b>Shares and Mutual Funds</b>	<b>Shares:</b> Concept of share, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares. Examples and Problems <b>Mutual Funds:</b> Concept of Mutual Funds, Problems on calculation of Net Income after considering entry load, Dividend, Change in Net Asset Value (NAV) and exit load. Averaging of price under the Systematic Investment Plan (S.I.P.). Examples and Problems	<ol style="list-style-type: none"> <li>1. To understand the concept of shares and mutual funds.</li> <li>2. To understand contribution of shares and mutual funds in systematic investment plans</li> <li>3. To solve problems related to shares and mutual funds</li> </ol>
3	<b>Population and Sample</b>	Definition of Statistics, Scope of Statistics in Economics, Management Science and Industry. Concept of population and sample, methods of data collection: Census and sampling with illustration. Methods of random sampling – SRSWR, SRSWOR, Stratified, Systematic (Description of sampling procedures only).	<ol style="list-style-type: none"> <li>1. Collection of data</li> <li>2. Analyzing and interpreting data.</li> <li>3. Knowing different method of sampling</li> </ol>

4	<b>Measures of Central Tendency and Measures of Dispersion</b>	<p>Frequency distribution: Raw data, attributes and variables, Classification of data, frequency distribution, cumulative frequency distribution, Histogram and ogive curves.</p> <p>Requisites of ideal measures of central tendency, Arithmetic Mean, Median and Mode for ungrouped and grouped data. Combined mean, Merits and demerits of measures of central tendency, Geometric mean: definition, merits and demerits, Harmonic mean: definition, merits and demerits, Choice of A.M., G.M. and H.M.</p> <p>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. Examples and problems.</p>	<ol style="list-style-type: none"> <li>1. To classify and represent data in tabular and graphical form.</li> <li>2. To compute various measures of central tendency and measures of dispersion.</li> </ol>
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### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Expected Outcome
1	16	ICT	Students will be able to apply concepts of interests and annuities to calculate EMI, prepare amortization schedule, calculate insurance premiums etc
2	8	ICT	Students will be able calculate dividend, brokerage on shares and mutual funds. Also students will be able to identify the contribution of shares and mutual funds in systematic investment plans and to select best investment options
3	8	ICT	Students will be able to recognize and classify different types of data. Students will be able to take a sample of appropriate size using suitable method of sampling.
4	16	ICT	Students will be able to calculate measures of central tendency and measures of dispersion. Students will be able to use appropriate measure of central tendency or measure of dispersion for given data to given problems from business or economics.

**References:**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Practical Business Mathematics	S. A. Bari	New Literature Publishing Company	New Delhi
2	Mathematics for Commerce	K. Selvakumar	Notion Press	Chennai
3	Business Mathematics with Applications	Dinesh Khattar & S. R. Arora	S. Chand Publishing	New Delhi
4	Business Mathematics and Statistics	N.G. Das & Dr. J.K. Das	McFraw Hill	New Delhi
5	Fundamentals of Business Mathematics	M. K. Bhowal	Asian Books Pvt. Ltd	New Delhi
6	Operations Research	P. K. Gupta & D. S. Hira	S. Chand Publishing	New Delhi
7	Mathematics for Economics and Finance: Methods and Modeling	Martin Anthony and Norman Biggs	Cambridge University Press	Cambridge
8	Financial Mathematics and Its Applications	Ahmad Nazri Wahidudin	Ventus Publishing ApS	Denmark
9	Fundamentals of Mathematical Statistics	Gupta S. C. and Kapoor V. K.;	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002
10	Statistical Methods	Gupta S. P.:	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002
11	Applied Statistics	Mukhopadhyaya Parimal	New Central Book Agency Pvt. Ltd.	Calcutta.
12	Fundamentals of Statistics	Goon A. M., Gupta, M. K. and Dasgupta, B.	World Press	Calcutta.
13	Fundamentals of Applied Statistics	Gupta S. C. and Kapoor V. K.;	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002

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