

M.O.P VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)

DEPARTMENT OF COMMERCE

I YEAR – CHOICE BASED ALLIED

ODD SEMESTER 2022-23

SHIFT I _ B.COM A&F; B.COM F&T		
SNO.	NAME OF THE COURSE	No. of seats / Strength
1	BUSINESS STATISTICS USING R	70
2	QUANTITATIVE FINANCE	70
SHIFT II _ B.COM A&F B2; B3 B.COM CS; B.COM MM		
SNO.	NAME OF THE COURSE	No. of seats / Strength
1	BUSINESS STATISTICS USING R	144
2	QUANTITATIVE FINANCE	70
3	CORPORATE GOVERNANCE AND SOCIAL RESPONSIBILITY	70

M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI-34
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CHOICE BASED ALLIED – BUSINESS STATISTICS USING R

COURSE CODE:	YEAR/ SEMESTER: I / I	MAXIMUM MARKS: 100	Theory:80 marks
			Practical:20 marks
COURSE TYPE: THEORY & PRACTICAL	CREDITS:5	TOTAL TEACHING HOURS: 75	Theory: 55 hours
			Practical:20 hours

GENERAL OBJECTIVE:

To provide conceptual knowledge of statistics, apply various statistical measures; develop problem solving skills needed in data analysis and interpretation in global environment.

COURSE OBJECTIVES (Co):

Co No.	Course Objective
Co1	To compute the degree of association between two variables using correlation and identify their linear relationship through regression analysis.
Co2	To equip students with various forecasting techniques for analyzing time series data and construct index numbers using simple aggregative method, Laspeyres, Paasche's, Bowley's and Fischer's method.
Co3	To identify the appropriate tools of hypothesis testing (large sample tests, small sample tests, Chi-square tests) and draw relevant conclusions in decision making environment.
Co4	To analyze and check the impact of one or more factors by comparing the means of different samples using ANOVA.
Co5	To provide an insight into R programming language and apply them for data visualization and interpretation

UNIT I

Correlation and Regression

Introduction, Significance, Types of correlation, Karl Pearson's co-efficient of Correlation and Rank Co-efficient of correlation, Regression Analysis (except bivariate frequency distribution).
(10 hours).

UNIT II

Analysis of Time series

Introduction, Components of time series, Measurement of Trend- Graphic Method, Method of Semi-averages, Method of Moving Averages, Method of Least Squares, Measurement of seasonal variations - Method of Simple Averages (Weekly, Monthly or Quarterly), Simple Problems.

Index Numbers

Introduction, Uses of Index Numbers, Methods of Constructing Index Numbers: Unweighted Index Numbers- Simple Aggregative Method, Weighted Index Numbers – Laspeyres, Paasche's, Bowley's and Fischer's Ideal Index numbers, Tests of Adequacy of Index number Formulae – Time and Factor Reversal Tests, Cost of living index- Aggregate Expenditure Method, Family Budget Method.

(10 hours)

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UNIT III

Tests of Hypothesis

Introduction, Procedure of Testing Hypothesis, Two types of Errors, One tailed and two tailed tests, Standard Error.

Large samples- Tests of significance for Single Mean, Difference of Means.

Small samples- t test for Single Mean, Difference of Means, Paired t test.

Non-Parametric test- Chi-Square for goodness of fit (excluding fitting of distributions) and test for association of attributes. (14 hours)

UNIT IV

F-Test and Analysis of Variance

The F test or the Variance ratio test, Assumptions in F test, Applications of F test, Analysis of variance: Definition, Assumptions, One way and Two way classification (Problems only). (10 hours)

UNIT V

Introduction to R

Features of R, Comments in R, Reserved Words, Identifiers, Constants, Variables, Operators- Arithmetic, Relational and Assignment.

Data Types & Operations

Basic Data Types- Numeric & Integer, Vectors- Creating vectors.

Charts and Graphs

Plotting bars vertically & horizontally, plotting categorical data, Grouped bar chart, stacked bar chart, Histogram, Line Graph and Pie charts.

(11 hours)

TEXTBOOKS:

- S.P.Gupta(2008)Statistical methods, Sultan Chand & Sons.
- Jeeva Jose (2018) Beginners Guide for Data Analysis using R Programming, Khanna Publishing.

REFERENCES:

- P.R.Vittal(2009),Mathematical Statistics, Margham Publications.
- Sharma(2007), Business Statistics, Pearson Education.
- GC.Beri(2005)Business Statistics, Tata McGraw Hill.

E RESOURCES

Web links

- www.slideshare.net
- [Wolfram MathWorld: The Web's Most Extensive Mathematics Resource](#)

YouTube Video links

- <https://youtu.be/wRZwrcPnmc4>
- <https://www.youtube.com/watch?v=VK-rnA3-41c>
- <https://www.youtube.com/watch?v=FpSTneHuPjM&list=RDCMUCqedkv6AYxh3hk99EPtGlmQ&index=3>
- <https://www.youtube.com/watch?v=m2taXNpI2co>
- <https://www.youtube.com/watch?v=7cGwYMhPDUY>

ACTIVITIES WITH DIRECT BEARING ON SKILL DEVELOPMENT

M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI-34
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(These activities are only indicative, the Faculty member can innovate)

- **Individual learning:** Students are divided into groups and each group is assigned a task of computing Karl Pearson's co-efficient of correlation between related variables (Internal assessment and End semester marks, income and expenditure etc.,) and obtain its linear relationship using regression analysis.
- **Concept Mapping on Testing of hypothesis:** Map a particular situation in (local/national/global) environment with appropriate tests of hypothesis to draw conclusions.
- **Case study Analysis on Financial forecasting:** Students analyze financial data and predict future revenues using methods of time series such as Method of Moving averages, Method of Least Squares.
- **Real time reactions:** Class interactive session on different methods of constructing Index numbers to measure trends in wide variety of areas including stock market Prices, cost of living, industrial and agricultural productions and imports.
- **Project Based Learning:** Students undertake projects in various domains like medicine, agriculture and apply ANOVA to study the impact of one or more factors in environmental changes that contribute to sustainable development.
- **Blended Learning:** Students apply R programming to compute measures of location & dispersion and develop programming skills needed for employment.

COURSEOUTCOMES

CO No.	COURSE OUTCOME	POs ADDRESSED	COGNITIVE LEVEL
CO1	Measure the degree of relationship between two random variables using correlation and predict their linear relationship using regression analysis.	1,2,3,7	E
CO2	Evaluate trend, seasonal variations using components of time series and apply index numbers to assess the living standard of people and measure the relative cost of living over time globally.	1,2,3,5,6	E
CO3	Choose appropriate statistical analysis tools, apply them to draw conclusions and develop decision making skills needed for employment/entrepreneurship.	1,2,4,9	E
CO4	Test the impact of one or more factors in environmental changes that contribute to sustainable development by employing the principles of ANOVA.	1,2,3,4,8	E
CO5	Select appropriate R programming techniques for Data interpretation and presentation	1,2,4	E

**PSO – Programme Specific Outcome; Co – Course Objective; CO – Course Outcome;
R- Remember; U- Understand; Ap – Apply; An – Analyse; E- Evaluate; C – Create.**

M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI-34
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QUESTION PAPER PATTERN

Question Component	Number	Marks	Total
Section A	10	3	30
Section B	5/ 8	8	40
Section C	2/3	15	30
Total			100

DISTRIBUTION OF QUESTIONS

Section A	2 questions	Unit I
	2 questions	Unit II
	2 questions	Unit III
	2 questions	Unit IV
	2 questions	Unit V
Section B	2 questions	Unit I
	2 questions	Unit II
	2 questions	Unit III
	1 question	Unit IV
	1 question	Unit V
Section C	1 question	Unit I/II
	1 question	Unit III
	1 question	Unit IV/V

BUSINESS STATISTICS using R PRACTICAL

• **CORRELATION**

Correlation co-efficient, Rank Correlation (without repeated ranks), Regression co-efficient and Regression lines

• **TESTS OF SIGNIFICANCE**

Large sample - test for single mean, difference of means, Small samples- t test for single mean, difference of means and paired t test. Chi-square test for independence of attributes.

• **CHARTS AND GRAPHS**

M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI-34
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CHOICE BASED ALLIED- QUANTITATIVE FINANCE

COURSE CODE:	YEAR/SEMESTER: I/ I	MAXIMUM MARKS:100
COURSE TYPE: THEORY	CREDITS:5	TOTAL TEACHING HOURS:75

GENERAL OBJECTIVE:

To introduce the key topics and principles necessary to financial literacy and implement mathematical tools to solve problems in finance.

COURSE OBJECTIVES (Co):

Co No.	Course Objective
Co1	To introduce the concept of nominal rates and find the accumulated value, discounted value, rate and time.
Co2	To determine the rate of interest using linear interpolation method in annuities.
Co3	To explain the concepts of amortization of a debt, outstanding principal and methods to refinance a loan.
Co4	To provide the knowledge on life functions and calculate premiums for different age groups using ultimate table.
Co5	To impart in-depth knowledge of life annuities and solve problems related to them.

UNIT – I

Simple Interest, Compound Interest and Compound Discount : Simple Interest – The time between dates - Equation of Value – Simple Discount – Compound Interest: Accumulated Value – Equivalent Rates – Equation of Value – Discounted Value – Accumulated and Discounted Values for Fractional Interest Periods – Finding the Rate – Finding the Time- Equation of value - Compound Discount at a Discount Rate.

(15 hours)

UNIT – II

Simple Annuities: Definitions and Notation – Accumulated Value of an Ordinary Simple Annuity – Discounted Value of an Ordinary Simple Annuity — Finding the Term of an Annuity – Finding the Interest.

(15 hours)

UNIT – III

Amortization and Sinking funds: Amortization of Debt – Outstanding Principal – Mortgages – Refinancing a Loan – Sinking Funds.

(13 hours)

UNIT – IV

Mortality Table: Life functions, Stationary Population, Expectation of Life, Selection and Select rates, Ultimate Table, Aggregate Table.

(17 hours)

UNIT – V

Life Annuities and Life Insurance: Introduction - Pure Endowments-Life Annuities-Life Insurance-Annual- Premium Policies.

(15 hours)

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Text Book:

- Petr Zima & Robert L. Brown –Mathematics of Finance, Tata McGraw hill Publishing Company Ltd, New Delhi 2005
- S.P.Dixit, C.S.Modi, R.V.Joshi, (2000), Mathematical Basis of Life Insurance, Insurance Institute of India.

WEBSITES:

- www.slideshare.net

E-RESOURCES

WebLink:

- https://www.georgebrown.ca/sites/default/files/uploadedfiles/tlc/_documents/for_mula_sheet_for_financial_mathematics.pdf
- <https://www.yourarticlelibrary.com/accounting/procedure-for-calculation-of-average-due-date-2-methods/50725>
- <https://www.projectmaths.ie/documents/modulars/4/FinancialMathsExtraQuestions.pdf>

You Tube Video Links

- <https://www.youtube.com/watch?v=SjLzJ1WkOE0>
- www.youtube.com/watch?v=CBIJwb37O_4

ACTIVITY PLANNER:

List of activities for Employability / Skill Development / Entrepreneurship Skill Development
(Course faculty may conduct any, all or any other activities as well)

Assignments: Problems on Compound interest and compound discount to determine the cost of a loan or an asset by fixing the nominal rates in business environment.

Drag and drop: Students link the concepts of accumulated value, discounted value, and rate of interest in simple annuities which is designed to provide income at regular intervals after retirement.

Group activity on Amortization: Paying of debt through regular principal and interest payments over a time for any real life situation such as availing a house loan or a vehicle loan and emerge as an investment analyst in competitive environment.

Assignment: Compute probabilities of survival and death at different age groups using Ultimate mortality table.

Role Play: Students play the role of an insurance advisor, explain the benefits and types of Assurances and emerge as an Insurance Agent.

Participative learning activity: Identify the appropriate assurance benefits and compute premiums Locally and Globally which develops Employability skills.

M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI-34
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COURSE OUTCOMES:

On completion of the course, students will be able to

CO No.	COURSE OUTCOME	POs ADDRESSED	COGNITIVE LEVEL
CO1	Determine the accumulated value, discounted Value of compound interest for fractional interest periods.	1,2	E
CO2	Evaluate accumulated value, discounted value and find the term of an annuity.	1,2	E
CO3	Explain the concepts of amortization, apply it in refinancing a loan and develop skills needed for employment in banking/finance sector.	1,2,4	E
CO4	Analyze the death rate and risk associated with the individuals who have recently purchased life insurance policy and estimate premiums for policy using Ultimate and Aggregate tables.	1,2,3,4,5,8	An, E
CO5	Choose the suitable type of life annuities and compute the premium.	1,2,3,4	E

**PSO – Programme Specific Outcome; Co – Course Objective; CO – Course Outcome;
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Question Paper Pattern

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	1 question	Unit V
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	1 question	Unit III
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CHOICE BASED ALLIED-I
CORPORATE GOVERNANCE AND SOCIAL RESPONSIBILITY
Common To B.COM A&F SII ; CS; MM

COURSE CODE:	YEAR / SEMESTER: I / I	MAXIMUM MARKS: 100
COURSE TYPE: THEORY	CREDITS: 5	TOTAL TEACHING HOURS: 75

GENERAL OBJECTIVE:

This course aims to give the student a thorough understanding of the societal context in which the concept of Corporate Social Responsibility (CSR) has emerged. It will debate different approaches to understand CSR, evaluate the limits and potentials of CSR as a device for promoting sustainable development.

COURSE OBJECTIVES (Co):

Co	Course Objectives
Co1	To facilitate the understanding of Corporate Social Responsibility and its importance
Co2	To understand the impact of the firm's CSR activities on diverse stakeholders.
Co3	To provide an overview on the CSR activities undertaken by Corporate to match business goals with societal expectations.
Co4	To comprehend the policies for the implementation of Corporate Governance.
Co5	To understand significance of CSR from the aspects of environment and Sustainable development.

UNIT – I

Introduction to CSR: Meaning, Definition- importance --Factors-Triple Bottom Line Approach of Corporate Social Responsibility - Elements of Corporate Social Responsibility. Emergence of CSR: History and current scenario. (13hrs)

UNIT – II

Drivers of CSR:

Drivers of CSR disclosures driving forces of CSR, Consumers, Government, Organisation, Stakeholders, Suppliers as drivers of CSR- Corporate Philanthropy and Community Volunteering - CSR Initiatives in Different Corporate Sector- Case study - Models of CSR - Archie Carroll (15hrs)

UNIT – III

Planning and Implementing CSR activities - Evaluating and developing CSR activities (15hrs)

UNIT – IV

Corporate Governance: Corporate Governance-Meaning and Scope-Origin-Code of Corporate Governance- Elements of Good Corporate Governance - Importance- Models-Implementation. (17hrs)

UNIT – V

Environmental aspects of CSR

Significance of CSR, Legal, Political Social and Cultural Requirements - CSR and Corporate Sustainability - Role of Government in Managing Environmental Issues (15hrs)

M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI-34
(Effective for the batch of candidates admitted in 2022-2023)

REFERENCE BOOKS:

- Suzanne Benn & Dianne Bolton (2011), Key Concepts in Corporate Social Responsibility, SAGE publication
- Okpara, John, Idowu, Samuel O (2013), Corporate Social Responsibility - Challenges, Opportunities and Strategies, Springer publication

E- RESOURCES

WEB LINKS:

<https://legumvox.in/evolution-of-corporate-social-responsibility-in-india/>
<https://www.greenstoneplus.com/blog/why-engaging-with-your-stakeholders-is-important-for-csr-reporting>
https://www.researchgate.net/publication/225354328_Designing_and_Implementing_Corporate_Social_Responsibility_An_Integrative_Framework_Grounded_in_Theory_and_Practice
<https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.managementstudyguide.com/csr-and-corporate-governance.htm&ved=2ahUKEwixlqPyzND1AhXA4zgGHUtrB7sQFnoECDgQAQ&usg=AOvVaw3jHesJRdDfz9onx52Hfaje>

YOUTUBE LINKS:

<https://www.youtube.com/watch?v=cgYnos1Gf6g&t=7>
https://www.youtube.com/watch?v=TRHtjPK_Og
<https://www.youtube.com/watch?v=BZafXMdMCaY>
<https://www.youtube.com/watch?v=M6QtZQz408I>
<https://www.youtube.com/watch?v=NJRBELQG5zQ&t=1s>

ACTIVITY PLANNER

List of activities for Employability / Skill Development / Entrepreneurship Skill Development
(Course faculty may conduct any, all or any other activities as well)

1. Worksheet to identify various concept in CSR.
2. Mini lecture on suggested topics.
3. Case study analysis – Corporate Governance
4. Assignment on CSR and sustainability .
5. Group discussion on Current scenario of CSR
6. "BuzzFeed"- puzzle will be conducted incorporating all the 5 units
7. Pick the treasure– student will be asked to pick a chit and explain the concept shown with suitable examples.

COURSE OUTCOMES

On the Completion of the course the student will be able to

COs	Course Outcomes	PSOs Addressed	Cognitive Level
CO 1	Outline the need and emergence of CSR	1,3,7,8	An
CO 2	Categorize the different stakeholders of CSR	1,2,3,4,5,6,7	An
CO 3	Evaluate , plan and implement CSR activities	1,2	E,C

M.O.P. VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS), CHENNAI-34
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CO 4	Examine the importance of Corporate Governance and its challenges	1,2,4,5	An
CO 5	Analyze the emerging opportunities for sustainability and CSR activities	1,2,3,5,8	An

R- Remember; U- Understand; Ap – Apply; An – Analyse; E- Evaluate; C – Create

QUESTION PAPER PATTERN

Section	Question Component	Number	Marks	Total
Section A	Definitions/Principles	10	3	30
Section B	Brief answer	5/ 8	8	40
Section C	Essay	2 / 3	15	30
	TOTAL			100

DISTRIBUTION OF QUESTIONS

Section	2 questions	Unit I
	2 questions	Unit II
	2 questions	Unit III
	2 questions	Unit IV
	2 questions	Unit V
Section B	2 questions	Unit I
	1 questions	Unit II
	2 questions	Unit III
	2 questions	Unit IV
	1 question	Unit V
Section C	1question	Unit I
	1question	Unit II or Unit III
	1question	Unit IV or Unit V