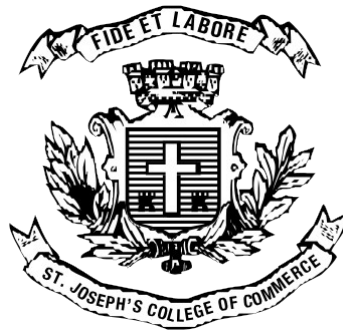


**St. Joseph's College of Commerce**  
(Autonomous)  
163, Brigade Road, Bengaluru - 560 025

Accredited with 'A++' Grade (4<sup>th</sup> Cycle) by the  
National Assessment and Accreditation Council (NAAC)

Recognized by the UGC as  
"COLLEGE WITH POTENTIAL FOR EXCELLENCE"



**Bachelor of Commerce**  
(Analytics)

**Semester I & II**

*Syllabus as per State Education Policy 2024*

*Curriculum Framework w.e.f., 2024-2025*

**Academic Year 2024 - 2025**  
**Batch 2024**

## **Outcome Based Education (OBE)**

### **B.Com (Analytics)**

*Our B.Com (Analytics) program will produce graduates who will:*

**PEO1:** *Be competent, creative and highly valued professionals in industry, academia, or government.*

**PEO2:** *Adapt to a rapidly changing environment with newly learnt and applied skills and competencies, become socially responsible and value driven citizens, committed to sustainable development.*

**PEO3:** *Act with conscience of global, ethical, societal, ecological and commercial awareness with sustainable values as is expected of professionals contributing to the country.*

**PEO4:** *Able to continue their professional development by obtaining advanced degrees in accounting and other professional fields.*

### **Programme Outcomes (PO)**

*After the completion of the B Com (Analytics) Programme, the student will be able to:*

#### **PO1: Disciplinary and Inter - disciplinary Knowledge**

**Demonstrate** *the understanding of relevant business, management and organization knowledge, both academic and professional, in line with industry standards.*

#### **PO2: Decision Making Skill**

**Apply** *underlying concepts, principles, and techniques of analysis, both within and outside the discipline to generate all the possible solutions and picks one that shows their understanding of the problem and the outcomes.*

#### **PO3: Integrated Problem-solving and Research**

**Analyze** *how parts of a whole interact with each other to produce overall outcomes in complex systems by analyzing key managerial issues in a particular industry or company and propose appropriate managerial solutions to the situation.*

**P04: Critical Thinking Skill**

**Evaluate** evidence, arguments, claims and beliefs by using right type of reasoning as appropriate to the situation and Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems.

**P05: Creative Thinking Skill**

**Develop**, implements and communicates new and worthwhile ideas using both incremental and radical concepts to make a real and useful contribution to their work.

**P06: Usage of Modern Technology and Tools**

**Use** tools and technologies of digital nature, communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy.

**P07: Leadership and Team work**

**Develop** a vision, translate that vision into shared goals, and effectively work with others to achieve these goals.

**P08: Ethical Conduct & Sustainability Practices**

**Act** responsibly and sustainably at local, national, and global levels.

**P09: Collaboration & Networking Skill**

**Work** collaboratively and respectfully as members and leaders of diverse teams.

**P010: Self-directed and Life – long Learning**

**Create** goals and monitor progress toward them by developing an awareness of the personal, environmental and task-specific factors that affect attainment of the goals.

**Programme Specific Outcomes (PSOs)****PO 11: Developing analytical model**

**Develop** models to identify and evaluate complex business challenges by analysing data using analytical techniques and visualising tools.

**P012: Application of analytical model**

**Apply** appropriate analytical methods into the core business operations and to leverage data to cultivate and nourish informed decision-making.

## B. Com (Analytics)

### Course Structure

#### Semester I

Course Code	Title of the Course	Category	Lecture Hours per week	Credits
<i>C5 24 MC 101</i>	<i>Financial Accounting</i>	<i>Major Core</i>	<i>4</i>	<i>4</i>
<i>C5 24 MC 102</i>	<i>Business Statistics I</i>	<i>Major Core</i>	<i>4</i>	<i>4</i>
<i>C5 24 MC 103</i>	<i>Mathematics</i>	<i>Major Core</i>	<i>4</i>	<i>4</i>
<i>C5 24 MC 104</i>	<i>Principles of Management</i>	<i>Major Core</i>	<i>4</i>	<i>4</i>
<i>C5 24 GE 101</i>	<i>Language 1</i>	<i>Language</i>	<i>3</i>	<i>3</i>
	<i>Language 2</i>	<i>Language</i>	<i>3</i>	<i>3</i>
<i>C5 24 KN 101</i>	<i>Kannada</i>			
<i>C5 24 HN 101</i>	<i>Hindi</i>			
<i>C5 24 AE 101</i>	<i>Additional English</i>			
<i>UG 24 FC 101</i>	<i>Psychological wellbeing</i>	<i>Compulsory course</i>	<i>2</i>	<i>2</i>
<b>Total credits</b>				<b>24</b>

#### SEMESTER - I

## C5 24 MC 101: FINANCIAL ACCOUNTING

### COURSE OBJECTIVE

The course aims to equip the students with the conceptual knowledge and skills required to prepare and evaluate financial statements of different business organizations.

#### **Module 1: Conceptual Framework** **10 Hrs.**

Introduction to Ind AS, IFRS, Challenges in implementation, Accounting Concepts - Accrual concept, Going Concern Concept, Business Entity Concept, Consistency Concept, Elements - Assets, Liabilities, Incomes, Expenditure and Equity for Sole proprietor, Partnership firm and Company. Four Pillars of accounting and Accounting Equation. Applicability of Ind AS - Voluntary Adoption and Mandatory Applicability - Phase I, II, III and IV. Role of accountant - Ethical values - Integrity, Objectivity, Professional competence and care, confidentiality, Professional behaviour.

#### **Module 2: Accounting Process** **10 Hrs.**

Accounting Process - Journal (including transactions covering GST on purchases and sales), Ledger, and Trial Balance, Rectification of Errors (Journal entry problems).

#### **Module 3: Financial Statements** **15 Hrs.**

Preparation of Financial statements- Profit & Loss statement and Balance Sheet. Adjustments for Ongoing transactions- Goods & cash withdrawn by proprietor, goods lost by fire, goods issued as free sample, Prepaid expenses, Outstanding expenses, Interest on capital, Interest on drawings, Interest on loan, Provision for Bad debts and Doubtful debts, Depreciation, Commission payable before and after charging such commission. (Sole proprietor and Partnership Firm)

#### **Module 4: Company Financial Statements** **5 Hrs.**

Company Financial Statements - Objectives, Format of the presentation of Financial Statement as per Ind AS to the Companies Act, 2013 (Amended till date).

#### **Module 5: Preparation and Presentation of Cash flow Statement** **10 Hrs.**

Meaning of Cash flow, Classification of Activities - Operating, Investing and Financing (Simple problems on identification of activities).

#### **Module 6: Basic Financial Statement Analysis** **10 Hrs.**

Introduction to Ratios - Computation of ratios based on liquidity, Solvency, Activity & Profitability [problems based on calculation of ratios] - Trend Analysis

### COURSE OUTCOMES

After completion of the course, the students will be able to:

1. Describe the concepts, conventions, and Terms of Financial Accounting as per the framework of Ind AS and IFRS.
2. Prepare Journal, Ledger and trial balance and rectification of errors as per Ind AS 8 and

10.

3. Construct financial Statements of Sole Proprietorship and Partnership incorporating all the necessary adjustments
4. Apply the format of the presentation of Financial Statement as per Ind AS to the Companies Act, 2013 (Amended till date).
5. Prepare Cash flow statements as per old and new methods.
6. Evaluate firm's Profitability and Liquidity by using Ratio analysis and Trend Analysis.

**Skill Development (These activities are only indicative, the faculty member can innovate) :**

1. Generate financial statements using Tally.
2. Prepare and present a summary on a company's published annual report which includes profitability analysis, financial position, cash position and accounting policies.
3. Compute the profitability ratios, turnover ratios and solvency ratios on the published financial statement of a company of your choice.
4. Compare and analyse the profitability ratios, solvency ratios between two companies using published financial statements.
5. Analyse a cash flow statement with from published annual report.

**Books for Reference**

- S P Jain and K. L. Narang, Advanced Accounts, Kalyani Publications
- S.N. Maheswari, Advanced Accountancy, Vikas Publishers
- Ashok Sehgal and Deepak Sehgal, Advanced accounting, Taxmann's
- Shukla and Grewal, Advanced Accountancy, Sultan Chand
- CA Anand Banka, Comprehensive guide to IND AS implementation
- IFRS and Ind AS publications issued by IASB and ICAI respectively

**SEMESTER - I**  
**C5 24 MC 102: BUSINESS STATISTICS - I**

**COURSE OBJECTIVES**

The course aims to create the awareness of the basic concept of Statistics and scope of its application in business decision making using various tools.

**Module 1: Introduction**

**10 Hrs.**

Definition - Need for Statistics - Scope - Limitations - Definition of Research - Scope - Types - Objectives - Steps in Research. Ethics to be followed by a statistician and role of statistics in sustainable development. Classification of data - Formation of Statistical Series - Frequency Distribution (univariate and bivariate) and Tabulation. Population - Sample -Types of Data - Primary and Secondary Data: Qualitative - Quantitative - Cross Sectional - Time Series - Variables and Attributes - Discrete and Continuous Variables - Types of Scales- nominal, ordinal, ratio and interval.

**Module 2: Measures of Central Tendency**

**15 Hrs.**

Meaning of Central Tendency - Definition - Types of Averages - Arithmetic Mean (Simple, Weighted and Combined). Median - Mode (excluding missing frequency problems) - Quartiles - Deciles - Percentiles (applications, importance, merits and demerits).

**Module 3: Measures of Dispersion**

**12 Hrs.**

Meaning - Definition - Importance of Dispersion - Range - Quartile Deviation - Mean Deviation - Standard Deviation - Variance - Coefficient of Variation (applications, importance, merits and demerits).

**Module 4: Diagrammatic and Graphical Representation of Data**

**10 Hrs.**

Need for representation of Data in Diagrams and Graphs - One Dimensional - Line, Bar, Simple, Sub-Divided, Percentage Bar, Multiple Bar Diagram, Deviation Bar Diagram, Two Dimensional Bar Diagrams (by using rectangles) - Pie Diagram. Ogives (less than and more than) - Histogram - Smoothed Frequency Curve - Frequency Polygon.

**Module 5: Skewness and Kurtosis**

**13 Hrs.**

Skewness - Meaning - Definition - Difference between Dispersion and Skewness - Measures of Skewness: Karl Pearson's and Bowley's Coefficient of Skewness - Moments (about mean and arbitrary point)- Coefficient of Skewness based on Moments. Kurtosis - Meaning - Need - Measure of Kurtosis - Coefficient of Skewness based on Moments

**Skill Development**

*(These activities are only indicative, the Faculty member can innovate)*

1. Analyse and compute the different measures of central tendencies for business variables and to identify that which measure of central tendency suits the data.
2. Analysis of data by applying descriptive statistics for the purpose of finding actionable insights pertaining to a given data set.
3. Prepare a Visual presentation of a company's financial statements

using diagrams and graphs for finding year to year changes.

4. Compute skewness and kurtosis of a data and identify potential challenges for further analysis.

## **COURSE OUTCOMES**

After completion of the course, the students will be able to:

1. Explain the basic concept of Statistics and scope of its application in business decision making.
2. Choose an appropriate measure of central tendency to analyze the given data for business decision making.
3. Justify the application of measures of dispersion to analyze the given data for consistency of diverse phenomenon
4. Show the statistical data, construct and comprehend in diagrammatic and graphic representation.
5. Use the concept of Skewness and Kurtosis to determine the type of distribution and tail of the distribution.

## **Books for Reference**

- Croxton F.E, Cowden D.J and Kelin S (1973): *Applied General Statistics.*, PHI.
- Ken Black, *Business Statistics*, Wiley.
- Freund JE and Walpole RE (1987) *Mathematical Statistics (4th edition)* PHI.
- Goon A.M., Gupta M.K., Das Gupta.B. (1991): *Fundamentals of Statistics Vol.I*, World Press, Calcutta.
- Gupta, S.C., and V.K.Kapoor : *Fundamentals of Mathematical Statistics: Sultan Chand & Sons.*
- Medhi J, *Statistical Methods: An introductory text*. New Age.
- Veerarajan T: *Probability , Statistics and Random process*, Tata Mc Gran Hill.
- J K Sharma(2007), *Business Statistics*, Pearson Education India.
- Naval Bajpai(2009), *Business Statistics*, Pearson Education India.
- Anderson T.W. and Sclove S.L *An Introduction to the Statistical*
- *Analysis of Data*, Houghton Mifflin& Co.
- Cooke, Cramer and Clarke: *Basic Statistical Computing*, Chapman and Hall.
- Mood A.M. Graybill F.A. and Boes D.C. ): *Introduction to the Theory of Statistics*, McGraw Hill.
- Snedecor G.W. and Cochran W.G.: *Statistical Methods*. Iowa State University Press.
- Spiegel,M.R. :*Theory &Problems of Statistics*, Schaum's Publishing Series.
- KVS Sarma, *Statistics Made Simple: Do it yourself on PC* (PHI)
- Purohit S.G. et.al. *Statistics using R*
- John Verzani : *Using R for Introductory Statistics*, CHAPMAN & HALL/CRC
- *The Cartoon Guide to Statistics* By Larry Gonick (Author) , Woollcott Smith (Author)
- Bhat B.R, Srivenkatramana T and Rao Madhava K.S.: *Statistics: A Beginner's Text, Vol. I*, New Age International(P) Ltd.
- Bhat B.R, Srivenkatramana T and Rao Madhava K.S. :*Statistics: A Beginner's Text, Vol. II*, New Age International (P)



## SEMESTER - 1

### C5 24 MC 103: MATHEMATICS

#### COURSE OBJECTIVE:

This aims to provide students with a firm grasp of key matrix algebra, differential and integral calculus, and mathematical modelling. Through theoretical learning and practical applications, students will develop essential problem-solving skills relevant to mathematical analysis in addressing real-world problems in Commerce and Economics.

#### Module 1: Matrices, Determinants and Applications

15 Hrs.

Matrices: Review of fundamentals: Definition of matrix, order, Types of matrices, Determinant: Value of determinant of order  $2 \times 2$  and  $3 \times 3$ , minors, cofactors, adjoint, row operations, inverse using formula method and row operations ( $2 \times 2$  and  $3 \times 3$  matrices only). *System of linear equations, augmented matrix, row operations, row echelon form, reduced row echelon form, existence and uniqueness of the solution, Gauss -Elimination method, Cramer's and matrix methods ( $2 \times 2$  and  $3 \times 3$  matrices only). Applications – Linear systems: Investment Problems, Traffic Flow, and Balancing the Chemical equations, and data encryption and decryption using a matrix and its inverse.*

#### Module 2: Algebra

10 Hrs.

Equations, Degree, Roots of an equation (Including complex roots), Solving Linear and Quadratic equations, Cubic Equations, Synthetic Division Method, Bi-quadratic equations, Nature of the roots, Binomial Theorem (statement and expression only), and Partial Fractions.

#### Module 3: Eigen values and Eigenvectors

10 Hrs.

Definition, Characteristic equation, Eigen values, Eigen vectors ( $2 \times 2$  and  $3 \times 3$  matrices only). Cayley Hamilton theorem (Only statement), verification of Cayley Hamilton theorem (only  $2 \times 2$  and  $3 \times 3$  matrices), using the same finding the powers of A and Inverse of a Matrix using Cayley Hamilton theorem.

#### Module 4: Differential Calculus

15 Hrs.

Functions, Limits and Continuity, Differentiability (concepts only), Derivative of a function, derivatives of the standard functions (excluding trigonometric functions), Rules of Differentiation: addition/subtraction, scalar multiplication, product, quotient, chain, Differentiation of Parametric functions, Partial Derivatives, Maxima and Minima, Applications: Cost minimization and Revenue and Profit maximization, Break Even Point, Marginal Cost, Marginal Revenue, and price elasticity of demand.

#### Module 5: Integral Calculus

15 Hrs.

Introduction, Indefinite Integration, Standard Integrals (excluding trigonometric functions), Rules of Integration: addition/subtraction and scalar multiplication, Integration by Substitution, Integration by Parts, Integration by resolving into Partial Fractions, Applications of Integration in business (finding cost, revenue functions from marginal cost and marginal revenue functions)

#### Module 6: Mathematical modelling through Differential Equations

10 Hrs.

First order Linear Ordinary Differential Equations, Homogeneous and Non-Homogeneous Differential Equations. Applications- Exponential Growth model (Continuous compounding of an invested money) and Logistic Growth model (Business applications: fishery, rabbits, piggery etc.)

### **Skill Development**

- To solve and visual system of linear equations with 3 variables on GeoGebra website (Math visualizer platform)
- To represent the functions graphically and identify the roots on a math visualizer software.
- To understand maxima - minima procedure graphically through a math visualizer software.

### **COURSE OUTCOMES**

After completion of the course, the students will be able to:

- Explain and apply the concepts like Matrices, Determinants, Algebra, integral calculus, Differential calculus and differential equations in Economics and Managerial decision making.
- Formulate cost, profit, revenue functions and optimize the same using maxima-minima procedure.
- Model and address the dynamic real-world problems in Business and Economics using differential equations.

### **Books for Reference**

1. P. N. Arora & S. Arora: Mathematics
2. D.R. Agarwal : Comprehensive Mathematics
3. Anand Sharma : Business Mathematics & Analytics
4. Ajay Goel & Alka Goel : Mathematics & Statistics
5. J.K.Singh : Business Mathematics
6. Robert R. Stall: Linear Algebra & Matrix Theory
7. Lay, D. C., Lay, S. R., & McDonald, J. J, Linear algebra and its applications

## SEMESTER - I

### C5 24 MC 104: PRINCIPLES OF MANAGEMENT

#### COURSE OBJECTIVES

The course content is designed with a view to acquaint students with the concepts and principles of management required for a successful business entity.

#### **Module - 1: Introduction to Management and History of Management Thought** 12 Hrs.

Introduction: Meaning - Nature and Characteristics of Management - Scope and Functional Areas of Management - Management as an Art, Science or Profession - Management and Administration - Principles of Management (scientific principles, Fayol's 14 principles)- Roles and skills of managers.

Evolution of Management Thought: Pre-scientific Management (introduction to classical theories) - Taylor's Scientific Management

#### **Module - 2: Planning Forecasting and Decision Making** 10 Hrs.

Planning: Nature - Planning Process - Objectives - Types of plans - MBO (Peter Drucker) & MBE

Forecasting: Meaning and purpose of forecasting - Techniques of forecasting - Qualitative and quantitative.

Decision Making: Meaning - Types of decisions -phases of Decision Making - Steps in decision making - Delegation and Principles of delegation.

#### **Module-3: Organizing and Staffing** 10 Hrs.

Organizing: Nature and Purpose of Organization - Principles of Organization- Organization structure and types - Departmentation - Committees - Centralization vs. Decentralization of Authority - Span of Control - Meaning - Factors affecting span. Staffing: Importance and Process of Staffing.

#### **Module - 4 Leadership, Directing and Controlling** 10 Hrs.

Leadership: Meaning - Leadership styles - Theories of leadership. Directing: Meaning - Principles and techniques of directing.

Controlling: Meaning and definition - Features - Steps in controlling and methods of establishing control. Techniques of controlling - Budgetary and non-budgetary.

#### **Module - 5: Co-ordination and Motivation** 12 Hrs.

Co-ordination: Meaning - steps and methods of co-ordination.

Motivation: Meaning - Theories of motivation - Carrot & Stick approach - Maslow's - Mc Gregor's - Herzberg's - ERG - Mc Clelland's - Vroom's Expectancy - William Ouchi's theory Z.

### **Module - 6: Business Ethics and Recent trends in Management**

**6 Hrs.**

Meaning - Need and importance - Principles of ethics - profits and ethics - Factors affecting ethical practices in Business Social Responsibilities of Management - Meaning, Social responsibilities of business towards various groups.

**Recent Trends in Management** - Continuing digitization in the business world, Artificial Intelligence in various functions of management, importance of data and analytics in management

#### **Self Learning/Online Content Topics:**

Module 1: Scientific principles, Fayol's 14 principles, Classical Theories

Module 3: Importance and Process of Staffing.

#### **Skill Development**

(These activities are only indicative, the Faculty member can innovate)

1. Evaluate the innovate concepts of Principles of Management laid on Henry Fayol in different industries.
2. Examine the impact of strategic partnerships with market research firms.
3. Analyze the impact of expansion from product to channel & customer profitability analysis.
4. Application of Predictive accounting & business intelligence on Enterprise Performance Management.
5. Present the Seven C attributes shared by experts of Covid 19 pandemic in Harvard School Business Working Knowledge. Analyse these attributes and their applicability in the Indian Corporate Scenario.

#### **COURSE OUTCOMES**

After completion of the course, the students will be able to:

1. Explain the principles of Management and role and skills of a Manager.
2. Integrate the planning, forecasting with decision making process of a given organization.
3. Relate the function of organizing with staffing in consideration of their effort on individual actions.

4. Identify the range of leadership theories, Directing and controlling tools available in the management.
5. Illustrate the range of motivation theories and methods of coordination available for the management practices.
6. Describe the factors affecting ethical practices in Business and social responsibilities of management towards all the stakeholders and identify the recent trends in the application of technology in Management.

### **Books for Reference**

- *Neeru Vasishth and Vibhuti Vasishth. Principles of Management Text & cases, 5th Edition. 2019. Taxman Publications.*
- *Stephen P. Robbins Mary Coulter Agna Fernandez Management. 14th Edition 2019. Pearson Education.*
- *Pravin Durai. Principles of Management 2nd Edition, 2018, Pearson India.*
- *Hill Mcshane Principles of Management, 1st Edition. 2007, McGraw Hill*

## SEMESTER I

### UG 24 FC 101: PSYCHOLOGICAL WELL-BEING

#### COURSE OBJECTIVES

This course aims to nurture self-awareness and meaningful relationship skills and to help in the development of emotional quotient and inter-personal skills.

#### **Module 1 - Introduction** **3 Hrs.**

Meaning of counseling - Myths and Facts related to counseling - Breaking stigmas related to seeking counselling - Normalizing seeking help - Self-reflection through concentric circles

#### **Module 2 - Intra-personal and Inter-personal Awareness** **10 Hrs.**

Meaning of self-esteem - Factors that influence self-esteem - Importance of self-esteem - Effects of low self-esteem - Qualities seen in people with high vs. low self-esteem - How to improve self-esteem - Self-awareness activity

Meaning of peer pressure - Different kinds of peer pressure - Resisting peer pressure - Confronting peer pressure - Group sharing activity

Meaning of relationships - Types of relationships - Healthy relationship dynamics - Personal Rights in a relationship - Components of a healthy relationship - Types of abuse in a relationship - Intimacy and understanding our needs - Boundaries

#### **Module 3 - Understanding Emotions** **4 Hrs.**

Meaning of emotions - Role of emotions in our lives - Beliefs regarding emotions - Harmful effects of suppressing emotions - Signs of emotional suppression - Handling emotions in a healthy manner - Self-assessment activity

#### **Module 4 - Anger management** **5 Hrs.**

Meaning of anger - Physical and Emotional symptoms of anger - Different ways that people express anger - Expression and experience of anger - What makes us angry and what it means when we're angry - Dealing with anger - Guided visualization and art activity

#### **Module 5 - Managing Anxiety/Fear** **4 Hrs.**

Meaning of fear - Types of fear - Physical and Emotional symptoms of fear - Different reactions to fear - Overcoming fear - Art work followed by group sharing activity

#### **Module 6 - Dealing with Loss and Grief** **4 Hrs.**

Understanding loss and grief – Form of loss – Stages of grief – Dangers of not grieving  
– Dealing with grief – Ways to help others in grief

### **COURSE OUTCOMES**

After completion of the course, the students should be able to:

1. Develop a better emotional quotient.
2. Formulate a healthier sense of self through self-awareness.
3. Build more meaningful relationships.
4. Display an improvement in inter-personal skills.
5. Modify thought and belief patterns.

