मेडी-केप्स विश्वविद्यालय, इंदौर

Medi-Caps University, Indore

Faculty of Management Studies

BBA – (Business Analytics)

Batch 2024-2027

First Year						
Semester-ODD (I)						
S.N.	Code	Course Title	**Hours Per Week**			
			L	**T**	**P**	**Credits**
1	MS3AE07	IT for Data Analyst	2	0	2	3
2	MS3CO31	Fundamentals of Management	3	0	0	3
3	MS3CO32	Elementary Mathematics and Statistics	3	1	0	4
4	MS3CO33	Financial Accounting	3	1	0	4
5	MS3CO42	Basics to Business Analytics	2	0	2	3
6	MS3CO35	Economic Analysis for Business Decisions	3	0	0	3
7	MS3NG01	Communication Skills- I	2	0	0	2
		Total	**18**	**2**	**4**	**22**

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Medi-Caps University, Indore

Syllabus

COURSE CODE	COURSE NAME	L	T	P	Total
MS3AE07	**IT for Data Analyst**	**2**	0	**2**	3

Course Learning Objectives

CLO 01	To enable students to efficiently use Excel for basic data manipulation, formatting, and analysis by understanding its core functions and tools.
CLO 02	To deepen students' knowledge of advanced Excel features and techniques, including complex functions, data analysis tools, and VBA for automation
CLO 03	To equip students with the skills to perform optimization tasks using Excel Solver, including formulating objective functions, constraints, and analyzing optimization results.
CLO 04	To provide students with the knowledge to apply financial functions in Excel for time value of money calculations, capital budgeting, and other financial analyses.
CLO 05	To develop students' ability to create and format professional documents in MS Word and compelling presentations in MS PowerPoint, including advanced features and multimedia integration

Prerequisites: NIL

Co-requisites: NIL

Course Contents

Unit 1

Excel Basics : Understanding the Excel Interface, Slicing and dicing data - Sort and filter, Report making I: Basic formatting, Report making II: Conditional formatting, Report making III: Advanced formatting, Printing and page layout, Passwords and naming files, Delimited files, Discovering shortcuts Introduction to formulae, Complex functionsCall referencing and text functions, Logical formulae Anand's anecdotes Creating and formatting charts, Types of charts, Creating a pivot table, Analysing data in a pivot table, Filtering data in a pivot table,

Anand's Anecdotes - Pivot Tables, VLOOKUP - Linking Data from multiple files & tables, Anand's Anecdotes - VLOOKUP, Common Errors in Excel

Unit 2

Advanced Excel : Sort and Filter, Text Functions, Statistical Functions, Logical Functions, Conditional formatting, LOOKUP functions, INDEX and MATCH, Pivot Tables, What-If Analysis, Dashboards Recording Macros, Advanced Visualisations, Data Analysis ToolPak - Regression in Excel Introduction to VBA Variables, Objects and Functions, Ranges and Cells, Loops Strings, Date and Time, Macros, Pivot Tables ,Error Handling.

Unit 3

Optimisation using Excel : Business Relevance of Optimisation, Objective Function and Decision Variable, Constraints in Optimisation, Sensitivity Analysis, Objective Function and Decision Variables in Excel, Constraints in Excel, Optimisation using Solver, Visualising the Results, Airline Optimisation: Sensitivity Analysis, Airline Optimisation: Connecting Flight

Unit 4

Financial Functions : Time Value of Money, Capital Budgeting, Depreciation ,Simple Interest Present Value and Future Value, NPV and IRR, Annuity

Unit 5

MS Word and MS PowerPoint : Advanced Word Processing using MS Word: Ribbons and Tabs, Formatting Text and Documents, Working with Headers, Footers, Footnotes, and Endnotes. Worming with Citations and Bibliography. Insertion of Tables, Pictures, Clip Arts, Shapes, Smart Arts, Page Numbers, Page Margins, Page Orientation, Columns, Ruler, Watermarks, Sorting, Mail Merge, Macros in MS Word, Comments and Print Options

Course Outcomes

Upon successful completion of this course, students will be able to:

CO1: Create and format Excel reports, use basic functions and formulas, and generate pivot tables to summarize and analyze data.

CO2: Proficient in using advanced Excel functions, performing data analysis with tools like Data Analysis ToolPak, and creating automated solutions with VBA.

CO3: Set up and solve optimization problems using Excel Solver, interpret the results, and apply optimization techniques to real-world business scenarios.

CO4: Use Excel to perform financial calculations such as NPV, IRR, and depreciation, and apply these functions to evaluate investment opportunities and financial decisions.

CO5: be proficient in using MS Word for advanced document formatting and mail merges, and MS PowerPoint for creating interactive and multimedia-enhanced presentations.

Text Books

1. Microsoft Excel 2019 Data Analysis and Business Modeling :Wayne L. Winston, Microsoft Press, 2019
2. Microsoft Word 2019 Step by Step :Joan Lambert, Microsoft Press, 2019
3. Microsoft PowerPoint 2019 Step by Step : Joan Lambert, Microsoft Press, 2019

Reference Books

Excel 2019 Power Programming with VBA : Michael Alexander, Dick Kusleika,Wiley, 2019

Web reads

Excel

1. **Microsoft Excel Official Documentation**
   Microsoft Excel Help
   Comprehensive documentation and tutorials from Microsoft.
2. **Excel Easy - Tutorials and Examples**
   Excel Easy
   A site offering free tutorials on Excel basics, formulas, and functions.
3. **Excel Jet - Excel Shortcuts and Formulas**
   Excel Jet
   A resource for learning Excel shortcuts, formulas, and functions.

MS Word

1. **Microsoft Word Official Documentation**
   Microsoft Word Help
   Official Microsoft support for Word, including guides and tutorials.
2. **WordTips - Tips and Tutorials for MS Word**
   WordTips
   Offers a collection of tips and techniques for Microsoft Word.
3. **Microsoft Word Training - LinkedIn Learning**
   LinkedIn Learning Word Training
   Professional courses and training in Microsoft Word.

MS PowerPoint

1. **Microsoft PowerPoint Official Documentation**
   Microsoft PowerPoint Help
   Official support and tutorials from Microsoft for PowerPoint.
2. **Presentation Magazine - PowerPoint Tutorials**
   Presentation Magazine
   Offers free PowerPoint templates and tutorials.

Lab List

Unit 1: Excel Basics

1. **Create a Financial Report:**
   - Create a report with basic formatting, including bold, italics, and different font sizes. Apply conditional formatting to highlight cells based on specific criteria.
   - **Software Required:** Microsoft Excel
2. **Build a Pivot Table:**
   - Import a dataset (e.g., sales data) and create a pivot table to analyze the data. Include filtering, sorting, and summarizing data using different pivot table features.
   - **Software Required:** Microsoft Excel
3. **Use VLOOKUP to Link Data:**
   - Create two separate tables (e.g., employee details and department details). Use VLOOKUP to link and pull information from one table to another.
   - **Software Required:** Microsoft Excel
4. **Create and Customize Charts:**
   - Create various types of charts (e.g., bar chart, line chart, pie chart) using sample data. Customize chart elements like titles, legends, and data labels.
   - **Software Required:** Microsoft Excel

Unit 2: Advanced Excel

5. **Perform What-If Analysis:**
   - Use Excel's What-If Analysis tools (e.g., Goal Seek, Data Tables) to explore different scenarios and their impact on financial projections.
   - **Software Required:** Microsoft Excel
6. **Design a Dashboard:**
   - Create an interactive dashboard with slicers and charts to visualize data trends and key metrics from a sample dataset.
   - **Software Required:** Microsoft Excel
7. **Write and Use Macros:**
   - Record and write simple macros to automate repetitive tasks. Save and run the macros within your Excel workbook.

- **Software Required:** Microsoft Excel

8. **Use INDEX and MATCH Functions:**
    - Utilize INDEX and MATCH functions to retrieve data from complex datasets. Compare these functions with VLOOKUP and demonstrate their advantages.
    - **Software Required:** Microsoft Excel

Unit 3: Optimization using Excel

9. **Optimize Business Decisions Using Solver:**
    - Use the Solver add-in to optimize a business problem, such as maximizing profit or minimizing costs, given certain constraints. Set up and solve the optimization problem.
    - **Software Required:** Microsoft Excel
10. **Conduct Sensitivity Analysis:**
    - Perform sensitivity analysis on a model by varying key inputs and analyzing the impact on the output. Visualize the results with appropriate charts.
    - **Software Required:** Microsoft Excel

Unit 4: Financial Functions

Time Value of Money Calculations

- **Objective:** Calculate the future value and present value of a series of cash flows.
- **Task:** Use Excel functions such as FV, PV, PMT, and RATE to solve problems involving annuities and lump-sum investments. For example, calculate the future value of a monthly savings plan with an annual interest rate.

Capital Budgeting Analysis

- **Objective:** Evaluate investment projects using Net Present Value (NPV) and Internal Rate of Return (IRR).
- **Task:** Create a spreadsheet to analyze a proposed investment project by calculating NPV and IRR based on projected cash flows. Use Excel functions NPV and IRR.

Unit 5: MS Word and MS PowerPoint

4. **MS Word: Working with Citations and Bibliography**
    - Create a research document that includes citations and a bibliography using the built-in citation and referencing tools in MS Word. Ensure correct formatting according to a chosen style (e.g., APA, MLA).
    - **Software Required:** Microsoft Word
5. **MS PowerPoint: Creating a Presentation**

    - Design a PowerPoint presentation with a professional theme. Include slides with text, images, charts, and SmartArt. Apply slide transitions and animations to enhance the presentation.
    - **Software Required:** Microsoft PowerPoint
6. **MS Word: Inserting and Formatting Graphics**
    - Insert various types of graphics (e.g., charts, shapes, SmartArt) into a Word document. Format these graphics and arrange them with text using alignment and wrapping options.
    - **Software Required:** Microsoft Word
7. **MS PowerPoint: Creating Interactive Presentations**
    - Develop an interactive presentation that includes hyperlinks, action buttons, and custom navigation to create a non-linear presentation flow.
    - **Software Required:** Microsoft PowerPoint

Software required for practical

- **Microsoft Excel:** Required for all tasks involving data analysis, visualization, and reporting. Ensure you have the latest version for full functionality.
- **Google Sheets (optional):** Can be used as an alternative to Excel for some tasks, especially for online collaboration.
- **Microsoft Word:** For advanced document formatting, mail merge, macros, and citations.
- **Microsoft PowerPoint:** For creating and enhancing presentations with multimedia elements, transitions, and animations.

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Medi-Caps University, Indore

Syllabus

Course Code	Course Name	L	T	P	Credit
MS3CO31	**Fundamentals of Management**	**3**	**0**	**0**	**3**

Course Contents

Unit I: Introduction to Management: Concept, Scope of Management, Management a Science or Art, Levels of Management, Managerial Skills, Roles of a Manager.

Unit- II Evolution of Management Thoughts: Classical Approach- scientific management, Administrative Management and Bureaucracy. Neo-Classical Approach- Human relations movement and Behavioral approach. Modern Approach- Quantitative approach, Systems approach and Contingency approach.

Unit-III Functions of Management: Planning: Concept, Importance, Strategies, Policies and Planning Premises; Decision making, Management by Objectives (MBO), Management by Exception (MBE), Process of Planning. Organizing: Concept, Importance, Process of Organizing, Types of Organizational Structures, Span of Management, Centralization and Decentralization.

Unit-IV Staffing: Concept, Scope of Staffing, Manpower Planning, Recruitment and Selection, Training and Development, Performance Appraisal. Directing: Concept, Importance, Motivation: Concept, Importance, Maslow's Need Hierarchy theory, Leadership- Concept, Characteristics of Leadership, and Leadership styles.

Unit-V: Coordinating and Controlling: Definition, Characteristics, Principles and Techniques of Coordination. Controlling: Concept, Importance, Process of Controlling

Note:The cases of each unit are supplemented in the TLP.

Reference Books:

1. Mitra, J.K.: Principles of Management, Oxford Publication, Latest Edition.
2. Koontz, H.: Essentials of Management, Tata McGraw Hill Education, Latest Edition.
3. Bhushan, Y.K.: Fundamentals of Business Organization and Management, Sultan Chand & Sons,

Textbooks:

1. Stephen P. Robbins, Mary Coulter, David De Cenzo: Fundamentals of Management, Ninth Edition, Pearson Education India, 2016.
2. BUSINESS ORGANIZATION AND MANAGEMENT, C.B GUPTA, SULTANCHAND AND SONS

मेडी-केप्स विश्वविद्यालय, इंदौर

Medi-Caps University, Indore

Syllabus

Course Code	Course Name	Hours per Week			Total	
		L	T	P	Hrs.	Credits
MS3CO32	Elementary Mathematics and Statistics	3	1	0	4	4

Prerequisites: Basic Knowledge of Sets, simple functions and Commercial mathematics.

Co-requisites: Basic mathematical Skills

Curriculum:

Unit-I Mathematics of Finance

BODMAS Rule, Percentage, Ratio and Proportion, Profit and Loss, Simple interest and Compound interest.

Unit-II Set theory

Set theory: Definition, Representation of Sets, Types of Sets, Operation on Sets(Union, Intersection, Difference, Complement), Cartesian product of Sets, Venn diagrams, Application of Set theory in Business.

Unit-III Relation and Functions

Ordered pair, definition of Relation, Domain, Codomain, Range of Relation, Types of Relation (Reflexive, Symmetric, Transitive).
Function: Definition, Types of Function (Algebraic, Transcendental), Functions related to Business and Economics, Break-even analysis.

Unit-IV Permutation and Combination

Fundamental principle of counting. Factorial n. Permutations and combinations derivation of formulae and their connections, simple applications, Binomial theorem for positive integral indices, general and middle term in binomial expansion, simple applications.

Unit-V Sequence and Series

Sequence and Series. Arithmetic Progression (A.P.), Arithmetic Mean (A.M.), Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P. Arithmetic and geometric series, infinite G.P. and its sum, geometric mean (G.M.). Relation between A.M. and G.M.

Case Studies: Not Applicable.

List of Practical's: Not Applicable.

Project: Optional.

Course Outcomes:

Text Books:

1. J. K. Thukral, *Mathematics, Taxmann, New Delhi.*
2. A.P.Verma*, Business Mathematics and Statistics, Asian Books Private Limited.*

Reference Books:

1. Dr. Amarnath Dikshit & Dr. Jinendra Kumar Jain ,Business Mathematics .
2. V. K. Kapoor ,*Business Mathematics , Sultan chand & sons, Delhi.*
3. Bari ,*Business Mathematics , New Literature publishing company,Mumbai*
4. **J.K. Das and N.G. Das,** *Business Mathematics and Statistics, McGraw Hill Education, Ist edition,2011.*

Web Source:

1. http://nptel.ac.in/courses/111105041/1
2. *https://www.youtube.com/watch?v=enwshBUDE1U*

Open Learning Source:

1. https://swayam.gov.in/courses/public
2. http://nptel.ac.in/course.php

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Medi-Caps University, Indore

Syllabus

Course Code	Course Name	L	T	P	Credit
MS3CO33	Financial Accounting	3	1	0	4

Unit-I

Introduction: Financial Accounting meaning & definition, Scope, objectives, users of accounting information, advantages and limitations of accounting. Types of accounting: Basic term used in accounting, Basic accounting concepts & Conventions, Accounting Equation, Introduction of Accounting Standards & IFRS. Types of vouchers: Voucher entry, Editing and deleting of vouchers, Voucher numbering, Customization of vouchers. Recording of Transactions: Preparing Reports, Cash books, Bank book, Ledger accounts

Unit-II

Accounting Process: Classification of Account, Rules of Debit and Credit, Journalizing. Sub-division of Journal: Preparation of Cash Book i.e. Simple cashbooks, double columns. Journal proper. Ledger: Posting from Journal to respective ledger accounts. Trial Balance: Meaning, Objectives, Methods of Preparation of Trial Balance.

Unit-III

Final Account: Final Accounts: Meaning, Features, Uses and Preparation of Financial Statements: Preparing Trading Account, Profit & Loss Account and Balance Sheet for a Sole Proprietor. Format for preparing financial statements for IND-AS companies as per Division II, Schedule III, Companies Act, 2013. Understanding the contents of a Corporate Annual Report (Actual latest annual reports to be used) with basic adjustment related to, Depreciation, closing stock, Prepaid & outstanding expenses, Accrued income, Bad debts, Reserve, Provision for bad debts etc.

Unit-IV

Depreciation & Bank Reconciliation Statement: Meaning of Depreciation, Causes, Objectives, Methods of providing depreciation, Straight line method, diminishing balance method, Disposal of assets, Change in the method of depreciation. Bank Reconciliation Statement: Need, Reasons for difference between cash book and pass book balances, Problems on favorable and over draft balances, Ascertainment of correct cash book balance.

Unit-V

Computerized Accounting System: Computerized Accounting: Meaning and Features, Advantages and disadvantages of computerized Accounting Creating of an Organization, Grouping of accounts, Creation of Accounts, Creation of inventory, Creation of stock groups, Stock categories, Units of measurement stock items, Entering of financial transactions.

Text Books

1. Shukla, Grewal, and Gupta,. Advanced Accounts. S. Chand & Co., New Delhi.
2. Maheshwari, and Maheshwari,. Financial Accounting. I,Vikas Publishing House, New Delhi.
3. Tulsian, P.C. Financial Accounting, Tata McGraw Hill, New Delhi

Reference Books

1. Horngren, Charles T. Introduction to Financial Accounting, Pearson Education
2. R.L.Gupta & Radhaswamy,Advanced Accounting, S. Chand & Company, New Delhi.
3. T.S Grewal Introduction to accounting S. Chand & Co., New Delhi.

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Course code	Course name	L	T	P	Total
MS3CO42	**Basics to Business Analytics**	**2**	0	**2**	3

Course Learning Objective:

CLO 01 Introduce students to the fundamentals of business analytics, its role in various domains, and the importance of IT in managing business operations.

CLO 02 Equip students with problem-solving skills, focusing on identifying, framing, and analyzing business problems with precision and strategic thinking

CLO 03 Teach students effective methods for understanding business problems and formulating hypotheses through interviewing techniques and specialized frameworks

CLO 04 Provide a foundational understanding of business analytics, including its origins, strategic importance, and the role of business analysts in organizations

CLO 05 Explore the intersection of business analytics and IT, focusing on business process modeling, enterprise applications, and the requirements engineering framework

Prerequisites: NIL

Co-requisites: NIL

Course Contents

Unit 1

Introduction to Business Analytics : Interpreting Business Analytics,Role of Analytics in Various Domains, Significance of Business Analytics Job Roles and Top Trends in Business Analytics, Introduction to IT, Information Systems and Applications of IT, Information Systems Components and Applications, Managing IT in Businesses, Current Trends in IT

Unit 2

What are Business Problems : Problem-Solving Skills, Advantages of Problem-Solving

Split-Brain Theory, How Right-Brained Individuals Solve Problems, Frame the Problem with Precision, Facts and Opinions, Prioritising Key Issues, Framing the Problem Using the S.M.A.R.T

Framework, Framing the Problem – Hospital Discharge Process, Building a Hypothesis, Validating the Hypothesis, MECE Approach, MECE Considerations, Root Cause of Issues, Analysing the Problem – Hospital Discharge Process, Analysing Possible Solutions, Prioritising Options Considering Implications, Analysing Solutions – Hospital Discharge Process

Implementing the Solutions, Proof of Concept approach, Implementing Solutions – Hospital Discharge Process

Unit 3

Understanding Problems & Formulating Hypotheses : Interviewing: Preparation, Interviewing: Do's and Don'ts, Interviewing: Frameworks Demonstration: 5W and 5 WHYs, Demonstration: SPIN Framework, Interviewing: Things to Remember, Business Model Canvas, Demonstration: Business Model Canvas, Issue Tree Framework, Specialized Frameworks

4Ps Framework, 5C Framework, PESTEL Framework

Unit 4

Foundations of Business Analytics

Origin of Business Analysis: Introduction to business analytics, the rationale for business analytics, the development of business analytics, the scope of business analytics, Business strategy analysis, The strategic context, Strategic analysis techniques, SWOT analysis, Implementing strategy. The responsibilities of a business analyst, Competencies of the business analyst, The Business Analysis Maturity Model, The competencies of a business analyst.

Unit 5

Business Analytics in IT and Modelling Business Processes

Business View of Information Technology Applications, Business Enterprise Organization, Its Functions, and Core Business Processes, Key Purpose of Using IT in Business, The Connected World: Characteristics of Internet-ready IT Applications, Enterprise Applications (ERP/CRM, etc.) and Bespoke IT Applications, Information Users and Their Requirements. Organisational view of processes, Value chain and value propositions, Business process modelling techniques, improving business processes, Gathering the requirements, Requirements engineering framework, Actors in requirements engineering, Requirements elicitation, Requirements analysis, and Requirements validation.

Course Outcomes

Upon successful completion of this course, students will be able to:

CO1: Students will understand and interpret the significance of business analytics and identify various job roles and current trends in the field.

CO2: Students will develop the ability to frame business problems using structured approaches like the S.M.A.R.T framework and the MECE approach, and propose solutions based on thorough analysis.

CO3: Students will apply various interviewing techniques and frameworks like the Business Model Canvas and the 5 Whys method to formulate and validate hypotheses for business problems.

CO4: Students will gain insights into the strategic context of business analytics, the competencies required of a business analyst, and the importance of implementing effective strategies.

CO5: Students will model and analyze business processes, understand the role of IT in business, and apply requirements engineering techniques to gather, analyze, and validate business requirements.

Text Books

1. Business Analytics: Data Analysis & Decision Making : S. Christian Albright, Wayne L. Winston, Cengage Learning, 6th Edition
2. Business Analytics: Theories, Applications, and Data Analysis: Thomas H. Davenport, Jeanne G. Harris, Wiley, 1st Edition
3. Business Analytics: An Introduction: Gert H. N. Laursen, Jesper Thorlund, Wiley, 1st Edition

Reference Books

1. David Lazer, Matthew Salganik, and others, MIT Press, 1st Edition
2. Introduction to Business Analytics: A Guide for Managers: Jonathan P. P. - R. Han, Bill T. G. - M. Agrawal, McGraw-Hill Education, 1st Edition
3. Business Intelligence and Analytics: Systems for Decision Support: Ramesh Sharda, Dursun Delen, Efraim Turban, Pearson, 11th Edition

Web reads

1. **Problem-Solving Techniques**

- MindTools: Problem Solving Techniques
- This article provides an overview of various problem-solving techniques that are applicable in business contexts.

2. **Framing the Problem**
   - Harvard Business Review: Are You Solving the Right Problem?
   - This resource explains how to frame business problems correctly to find effective solutions.
3. **Root Cause Analysis**
   - Six Sigma: Root Cause Analysis
   - This article delves into the root cause analysis process, which is essential for identifying underlying business issues.
4. **Visual Storytelling with Data**
   - **Link:** Visual Storytelling with Data
   - **Description:** Resources and tools for creating compelling visual stories with data.

Lab List

1. **Data Interpretation and Visualization**
   - Question: Using Excel, analyze a dataset of sales transactions to identify trends and patterns. Create visualizations such as charts and graphs to represent your findings.
   - Software: Microsoft Excel
2. **Problem-Solving Framework Application**
   - Question: Apply the S.M.A.R.T framework to a case study problem. Document how each aspect of the framework helps in defining and solving the problem.
   - Software: Microsoft Word
3. **SWOT Analysis Exercise**
   - Question: Conduct a SWOT analysis for a chosen company or product. Present your analysis in a structured format using PowerPoint.
   - Software: Microsoft PowerPoint
4. **Business Model Canvas Development**
   - Question: Create a Business Model Canvas for a startup idea using a given template. Explain each component of the canvas and how it contributes to the business model.
   - Software: Microsoft PowerPoint or Word
5. **Decision-Making Simulation**
   - Question: Use Excel to perform a What-If analysis to determine the impact of different business scenarios on financial outcomes. Create scenarios and analyze their effects.
   - Software: Microsoft Excel
6. **Data Cleaning and Preparation**

- Question: Using Excel, clean and preprocess a dataset that includes missing values, duplicates, and incorrect entries. Prepare the dataset for analysis.
- Software: Microsoft Excel

7. **Business Process Modelling**
   - Question: Model a business process using a business processs modeling tool or software. Document the process flow, including inputs, outputs, and key steps.
   - Software: Microsoft Visio or Lucidchart

Software required for practical

- **Microsoft Excel:** For data analysis, visualizations, pivot tables, and what-if analysis.
- **Microsoft Word:** For documentation and writing frameworks.
- **Microsoft PowerPoint:** For presenting analyses and frameworks.
- **Microsoft Visio or Lucidchart:** For business process modeling.

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Syllabus

Course Code	Course Name	L	T	P	Credit
MS3CO35	Economic Analysis for Business Decisions	3	0	0	3

Course Contents

Unit I: Managerial Economics: Concept of Economy, Economics, Microeconomics, Macroeconomics. Nature and Scope of Managerial Economics, Managerial Economics and decision-making. Concept of Firm, Market, Objectives of Firm: Profit Maximization Model, Economist Theory of the Firm.

Unit- II Utility & Demand Analysis: Utility – Meaning, Utility analysis, Measurement of utility, Law of diminishing marginal utility, Indifference curve, Consumer's equilibrium - Budget line and Consumer surplus. Demand – Concept of Demand, Types of Demand, Determinants of Demand, Law of Demand, Elasticity of Demand, Exceptions to Law of Demand. Uses of the concept of elasticity. Forecasting: Introduction, Meaning and Forecasting, Level of Demand Forecasting, Criteria for Good Demand Forecasting, Methods of Demand Forecasting, Survey Methods, Statistical Methods, Qualitative Methods, Demand Forecasting for a New Products. (Demand Forecasting methods – Conceptual treatment only numericals not expected)

Unit-III Supply & Market Equilibrium: Introduction, Meaning of Supply and Law of Supply, Exceptions to the Law of Supply, Changes or Shifts in Supply. Elasticity of supply, Factors Determining Elasticity of Supply, Practical Importance, Market Equilibrium and Changes in Market Equilibrium. Production Analysis: Introduction, Meaning of Production and Production Function, Cost of Production. Cost Analysis: Private costs and Social Costs, Accounting Costs and Economic costs, Short run and Long Run costs, Economies of scale, Cost-Output Relationship - Cost Function, Cost- Output Relationships in the Short Run, and Cost-Output Relationships in the Long Run.

Unit-IV Revenue Analysis and Pricing Policies: Introduction, Revenue: Meaning and Types, Relationship between Revenues and Price Elasticity of Demand, Pricing Policies, Objectives of Pricing Policies, Cost plus pricing. Marginal cost pricing. Cyclical pricing. Penetration Pricing. Price Leadership, Price Skimming. Transfer pricing. Price Determination under Perfect Competition- Introduction, Market

and Market Structure, Perfect Competition, Price-Output Determination under Perfect Competition, Short-run Industry Equilibrium under Perfect Competition, Short-run Firm Equilibrium under Perfect Competition, Long-run Industry Equilibrium under Perfect Competition, Long-run Firm Equilibrium under Perfect Competition. Pricing Under Imperfect Competition- Introduction, Monopoly, Price Discrimination under Monopoly, Bilateral Monopoly, Monopolistic Competition, Oligopoly, Collusive Oligopoly and Price Leadership, Pricing Power, Duopoly, Industry Analysis, Need for Government Intervention in Markets, Preventions and Control of Monopolies.

Unit-V: Consumption Function and Investment Function: Introduction, Consumption Function, Investment Function, Marginal efficiency of capital and business expectations, Multiplier, Accelerator. Business Cycle: Introduction, Meaning and Features, Phases of Business Cycles, Measures to Control Business Cycles, Business Cycles and Business Decisions.

Note: The cases of each unit are supplemented in the TLP.

Text Books:

1. Managerial Economics, Peterson, Lewis, Sudhir Jain, Pearson, Prentice Hall

2. Managerial Economics, D. Salvatore, McGraw Hill, New Delhi.

3. Managerial Economics, Pearson and Lewis, Prentice Hall, New Delhi

4. Managerial Economics, G.S. Gupta, T M H, New Delhi.

Reference Books:

1. Managerial Economics, Homas and Maurice, Tata McGraw Hill

2. Managerial Economics - Analysis, Problems and Cases, P.L. Mehta, Sultan Chand Sons, New Delhi.

3. Managerial Economics, Varshney and Maheshwari, Sultan Chand and Sons, New Delhi.

4. Managerial Economics, D.M.Mithani

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Medi-Caps University, Indore

Syllabus

Course Code	Course Name	Hours per Week			Total	
		L	T	P	Hrs.	Credits
MS3NG01-Q	Communication Skill -I	2	0	0	2	2

- Goal Setting
- Rapport Building
- Interview Practice
- Time Management
- Team Building
- Attitude
- Leadership
- Decision Making
- Intrapersonal Skills
- Kaizen system
- Learning-Unlearning-Relearning
- Self-Discipline

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Medi-Caps University, Indore

Faculty of Management (BBA -Business Analytics - Model Scheme-120 Credits)

Session August to December 2024

First Year

Second Year						
Semester-ODD(III)Batch 2023						
S.N.	**Code**	**Course Title**	**Hours Per Week**			**Credits**
			L	**T**	**P**	
1	MS3CO11	Business Laws	3	0	0	3
2	MS3CO43	Quantitative Techniques	2	0	2	3
3	MS3CO39	Introduction to DBMS and SQL	3	0	2	4
4	MS3CO40	Data Analytics with Python	3	0	2	4
5	MS3CO41	Business Ethics and Corporate Social Responsibility	3	0	0	3
6	MS3NG02	Communication Skills- II	2	0	0	2
		Total	**16**	**0**	**6**	**19**

मेडी-केप्स विश्वविद्यालय, इंदौर

Medi-Caps University, Indore

Syllabus

Course Code	Course Name	Hours per Week			Total	
		L	T	P	Hrs.	Credits
MS3CO11	**Business Law**	3	0	0	3	3

After completion of this course, the students shall be able to:

Course Learning Objectives (CLOs):

- Understand the essential elements of a valid contract, including void and voidable agreements.
- Learn the key components of sales contracts and the rights of unpaid sellers.
- Acquaintance with the objectives and features of the Consumer Protection Act.
- Understand the types of companies and legal processes under the Indian Companies Act.
- Familiarize with the formation, rights, duties, and dissolution of partnerships.

Course Outcomes (COs):

- Demonstrate understanding and application of contract law principles.
- Analyze and apply sales contract principles and seller rights.
- Identify and explain key provisions of the Consumer Protection Act.
- Classify company types and understand legal requirements for companies.
- Apply knowledge to analyze partnership rights, duties, and dissolution.
-

Course Content

UNIT I

The Indian Contract Act, 1872: Essentials of a Valid Contract, Void and Voidable Agreements, Performance of Contracts, Breach of a Contract and Its Remedies, Quasi-Contracts. Indemnity and Guarantee, Bailment and Pledge, Contract of Agency.

UNIT II

The Sale of Goods Act, 1930: Formation of a Sales Contract. Contract of sale, meaning and the difference between sale and agreement to sell, Conditions and warranties, Transfer of ownership in goods including sale by a non-owner, Unpaid seller. Negotiable Instrument Act, 1881: Definition and Essential Features of Negotiable Instruments, Types of Instruments and Endorsement, Parties to Negotiable Instrument.

UNIT III

Consumers Protection Act, 1986 and the Right to Information Act**:** Objectives and features of Consumers Protection Act, Definitions – Complainant, Complaint, Consumer, Consumer Dispute, Defect, Deficiency, District Forum, Person, Unfair trade practices Consumer Protection Council (Central, State and District – their constitutions and objectives.

UNIT IV

Evolution of Indian Companies Act, 2013, The Companies Act, 2013: Types of Companies, Memorandum and Article of Association, Shareholders and Debenture Holders, Minority Protection, Winding-up. Intellectual Property Right Act, Copyright, Patent, and Trademark.

UNIT V

Law of Partnership: Definition and Nature of Partnership, Formation of Partnership, Rights, Duties and Liabilities of Partners, Dissolution of Partnership Firm.
Foreign Exchange Management Act 2000 (FEMA) – Objectives, Provisions.

Text Books:

1. ND Kapoor: Business Law, S Chand and Co., New Delhi
2. P. K. Goel, Business Laws for managers,2010, Biztantra
3. Chandra Bose, Business Laws, PHI,2008

Reference Books:

1. Bulchandani, Business Law for Management, 2009, Himalaya Publishing House.
2. Dr. Rajni Jagota – Business Laws – CENGAGE, New Delhi.
3. P.C Tulsian., Business Law, TMH, New Delhi
4. Avtar Singh, The Principles of Mercantile Law; Eastern Book Company, Lucknow.
5. S.S Gulshan and G.K Kapoor., "Business Law including Company Law", 2003, New Age International Private Limited Publishers.

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Syllabus

Course code	Course name	L	T	P	Total
MS3CO43	**Quantitative Techniques**	**2**	0	**2**	3

Course Learning Objectives

CLO 01 To understand and apply basic statistical concepts and techniques to summarize and describe business data for informed decision-making.
CLO 02 To introduce the fundamental principles of probability and its applications in assessing risk and making informed decisions under uncertainty.
CLO 03 To explore different probability distributions and their applications in modelling real-world business scenarios, emphasizing the importance of the normal distribution.
CLO 04 To understand the Central Limit Theorem (CLT) and its significance in sampling distributions, allowing for the estimation of population parameters based on sample data.
CLO 05 To provide a comprehensive understanding of various sampling methods and their applications in business research and decision-making processes

Prerequisites: NIL

Co-requisites: NIL

Course Contents

Unit 1

Statistics for Business Decisions: Introduction to Statistics, Statistical Data, Data Visualisation Measures of Central Tendency, Measures of Dispersion, Measures of Shape

Unit 2

Fundamentals of Probability: Fundamentals of Probability, Permutations, Combinations Probability – Definition and Properties, Types of Events, Rules of Probability - Addition, Rules of Probability - Multiplication, Joint and Conditional Probability Bayes Theorem, Random Variables Probability Distributions, Expected Value

Unit 3

Probability Distributions: Probability Distributions, Probability Without Experiment Binomial Distribution Binomial Distribution (Examples), Cumulative Probability Comprehension Expected Value, Probability Density Functions, Normal Distribution Standard Normal Distribution

Unit 4

Central Limit Theorem: Central Limit Theorem, Population and Samples, Sampling Distributions Properties of Sampling Distributions Central Limit Theorem, Estimating Mean Using CLT, Estimating Mean using CLT: Excel Demo

Unit 5

Sampling Methods: Sampling Methods Types of Sampling Methods Uses of Sampling in Market Research, Uses of Sampling in Marketing Campaigns, Uses of Sampling in Pilot Testing Uses of Sampling in Quality Control Standardised Normal Distribution and Z-Score Sampling and Estimation

Course Outcomes

Upon successful completion of this course, students will be able to:

CO1: Students will be able to compute and interpret measures of central tendency, dispersion, and shape to describe and analyse business data effectively.

CO2: Students will be able to apply probability rules and concepts, including Bayes Theorem, to calculate probabilities of events and assess uncertainty in business contexts.

CO3: Students will be able to identify and apply appropriate probability distributions, such as binomial and normal distributions, to solve business-related problems and make predictions.

CO4: Students will be able to utilize the Central Limit Theorem to create sampling distributions, estimate population parameters, and understand the reliability of sample estimates.

CO5: Students will be able to design and implement effective sampling strategies for business research, ensuring accurate and reliable estimation and inference in various business scenarios.

Textbooks

1. Business Statistics: S. P. Gupta, M. P. Gupta, Sultan Chand & Sons,16th Edition
2. Latest Probability and Statistics for Engineers: Jay L. Devore, Cengage Learning India, 8th Edition (Indian Edition)
3. Introductory Statistics: Prem S. Mann, Wiley India,9th Edition (Indian Edition)

Reference Books

1. Applied Statistics and Probability for Engineers: Douglas C. Montgomery, George C. Ranger, Wiley India,6th Edition (Indian Edition)
2. Statistics for Management : Richard I. Levin, David S. Rubin, Pearson India,7th Edition (Indian Edition)

Web reads

1. **Khan Academy - Statistics and Probability**
    - **Link:** Khan Academy Statistics and Probability
2. **Coursera - Inferential Statistics**
    - **Link:** Coursera Inferential Statistics Course
3. **OpenStax - Introductory Statistics**
    - **Link:** OpenStax Introductory Statistics
4. **Hyper Stat Online - Statistics Textbook**
    - **Link:** HyperStat Online

Lab List

Descriptive Statistics Calculation

- **Question:** Using a dataset provided, calculate and interpret the mean, median, mode, variance, and standard deviation. Visualize these measures using histograms and boxplots.
- **Software:** Microsoft Excel, R, Python (Pandas, Matplotlib/Seaborn)

Probability Distributions Analysis

- **Question:** Generate random samples from a normal distribution and a binomial distribution. Compare the empirical distribution with the theoretical distribution using histograms and Q-Q plots.
- **Software:** R, Python (Numpy, Scipy, Matplotlib/Seaborn)

Bayes Theorem Application

- **Question:** Solve a problem using Bayes' Theorem. For example, calculate the posterior probability of an event given prior probabilities and conditional probabilities.
- **Software:** Microsoft Excel, R, Python (SymPy)

Central Limit Theorem Simulation

- **Question:** Simulate the sampling distribution of the sample mean for different sample sizes and distributions. Compare these results to the normal distribution using histograms and density plots.

- **Software:** R, Python (Numpy, Matplotlib/Seaborn)

Chi-Square Test for Independence

- **Question:** Perform a Chi-Square test to determine if there is a significant association between two categorical variables in a given dataset.
- **Software:** Microsoft Excel, R, Python (Scipy)

T-Test for Mean Comparison

- **Question:** Conduct a t-test to compare the means of two independent samples. Interpret the results and check the assumptions of the test.
- **Software:** R, Python (Scipy, Statsmodels)

ANOVA for Multiple Mean Comparisons

- **Question:** Use ANOVA to compare means across multiple groups. Determine if there are significant differences and perform post-hoc analysis if necessary.
- **Software:** R, Python (Scipy, Statsmodels)

Regression Analysis

- **Question:** Fit a simple linear regression model to a dataset. Evaluate the model's performance using metrics such as R-squared and residual plots.
- **Software:** R, Python (Statsmodels, Scikit-learn)

Sampling Methods Exploration

- **Question:** Implement and compare different sampling methods (e.g., random sampling, stratified sampling) on a given population dataset. Evaluate the effectiveness of each method.
- **Software:** R, Python (Pandas, Scikit-learn)

Confidence Interval Calculation

- **Question:** Calculate and interpret confidence intervals for population means and proportions using different sample sizes and confidence levels.
- **Software:** Microsoft Excel, R, Python (Scipy, Statsmodels)

Software required for practical
Note: Python preferable

1. **Microsoft Excel**
    - Useful for basic descriptive statistics, t-tests, ANOVA, and Chi-Square tests.
2. **R**
    - Powerful for statistical analysis and visualizations, including descriptive statistics, probability distributions, hypothesis testing, and regression.
3. **Python**
    - Libraries like Pandas, Numpy, Scipy, Statsmodels, and Matplotlib/Seaborn are used for data manipulation, statistical analysis, and visualizations.
4. **Jupyter Notebook**
    - Ideal for interactive Python coding and visualization, especially with libraries like Pandas, Numpy, and Matplotlib.

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Syllabus

Course Code	Course Name	L	T	P	Total
MS3CO39	Introduction to DBMS and SQL	3	0	2	4

Course Learning Objective:

CLO 01 Understand the fundamentals of relational database management systems (RDBMS), including database design concepts such as Entity-Relationship Diagrams (ERD), data warehousing, and SQL basics

CLO 02 Master SQL syntax and advanced querying techniques, including the use of aggregate functions, string and date-time functions, regular expressions, and various types of joins to retrieve and manipulate data effectively

CLO 03 Develop skills in data modelling by differentiating between data models and floor models, creating and manipulating relational schemas, and applying database design principles to construct and query databases

CLO 04 Utilize advanced SQL features, including rank functions, partitioning, window functions, user-defined functions (UDFs), stored procedures, and cursors, to perform complex data operations and analysis

CLO 05 Apply best practices in database management, focusing on indexing techniques, query optimization, and practical issues such as profitability analysis, customer profiling, and fraud detection to enhance database performance and utility

Prerequisites: NIL
Co-requisites: NIL

Course Contents

Unit 1:

Database Design and Introduction to MySQL Part 1- Introduction to RDBMS, Data Retrieval with SQL, Compound Functions and Relational Operators and Pattern Matching with Wildcards, Data Warehouse, ERD, Star, Snowflake Schemas, OLAP vs OLTP, Entity Constraints, Referential Constraints, Semantic Constraints, Comprehension: ERD, Introduction to SQL, DDL Statements, DML Statements.

Unit 2:

Database Design and Introduction to MySQL Part 2- SQL Basic Statements and Operators, Aggregate and Inbuilt Functions, String and Date-Time Functions and Ordering, Regular Expressions, Nested Queries, Views, Venn Diagrams and Inner and Outer Joins, Left and Right Join, Cross Join, Views with Join, Intersect, Minus, Union and Union all.

Unit 3:
Data Modelling- Introduction to Data Modelling, A Data Model vs A Floor Model, Database Design - Creation - Manipulation Cycle, Relational Schemas, Relational vs Non-Relational Schemas, Database Design, DDL Statements Syntax, Database Creation, DML Statements Syntax, Database Manipulation, Database Querying.

Unit 4:
Advanced SQL- Rank Functions, Partitioning, Frames, Lead and Lag Functions, Case Statements, UDFs, Stored Procedures, Cursors

Unit 5:
Best Practices: Best Practices, Indexing, Clustered vs Non-Clustered Indexing, Order of Query Execution, Joins vs Nested Queries, Profitability Analysis, Profitable Customers, Customers Without Orders, Fraud Detection

Note: The cases of each unit are supplemented in the T.L.P.

Course Outcomes:

At the end of the course, the students will be able to:

CO1: Write SQL queries involving DDL and DML statements, views, and joins.
CO2: Implement an ERD for a given problem statement and use DDL statements to design a database and insert records into the tables created with reference to the structure of the ERD.
CO3: Write advanced SQL queries involving window functions, case statements, and optimize runtime and computational power using various techniques.
CO4: Implement SQL queries with advanced features such as rank functions, stored procedures, and cursors for complex data operations.
CO5: Apply best practices in indexing, query optimization, and data analysis to ensure efficient database management and performance.

Textbooks:

1. Database System Concepts, Abraham Silberschatz, Henry Korth, and S. Sudarshan, McGraw-Hill Education, 7th Edition (2019)

2. Fundamentals of Database Systems, Ramez Elmasri and Shamkant B. Navathe, Pearson, 7th Edition (2015)
3. Database Management Systems, Raghu Ramakrishnan and Johannes Gehrke, McGraw-Hill Education, 3rd Edition (2003)

Reference books:

1. SQL Cookbook: Query Solutions and Techniques for Database Developers, Anthony Molinar, O'Reilly Media, 1st Edition (2005)
2. Learning SQL, Alan Beaulieu, O'Reilly Media, 2nd Edition (2016)
3. SQL Performance Explained, Markus Winand, Markus Winand, 2nd Edition (2016)

Web Reads:

https://www.w3schools.com/sql/
https://mode.com/sql-tutorial/
https://sqlzoo.net/
https://www.studytonight.com/dbms/database-normalization

Lab List

Creating a Database and Tables:

- Question: Create a new database and define several tables with appropriate data types, primary keys, and foreign keys. Use Entity-Relationship Diagrams (ERD) to guide your design.

Basic SQL Queries:

- Question: Write SQL queries to retrieve data from multiple tables using SELECT statements, including simple WHERE clauses and ORDER BY clauses.

Data Manipulation:

- Question: Insert, update, and delete records in a table using SQL Data Manipulation Language (DML) statements. Verify the changes by querying the table.

Aggregate Functions and Grouping:

- Question: Use SQL aggregate functions (e.g., COUNT, SUM, AVG) to generate summary reports. Group the results using GROUP BY and filter them with HAVING.

Joins and Complex Queries:

- Question: Perform various types of joins (INNER JOIN, LEFT JOIN, RIGHT JOIN, CROSS JOIN) to combine data from multiple tables. Write complex queries involving nested queries and subqueries.

Views and Indexes:

- Question: Create and manage SQL views to simplify complex queries. Implement indexes on tables and analyze their impact on query performance.

Advanced SQL Functions:

- Question: Utilize SQL rank functions (e.g., RANK, DENSE_RANK), window functions (e.g., ROW_NUMBER, LEAD, LAG), and CASE statements in queries to handle complex data scenarios.

Stored Procedures and Cursors:

- Question: Write and execute stored procedures to automate repetitive tasks. Implement cursors to handle row-by-row operations.

Data Preprocessing and Validation:

- Question: Develop SQL scripts for data cleaning and validation tasks, such as handling NULL values, removing duplicates, and transforming data formats.

Best Practices and Performance Tuning:

- Question: Analyze and optimize SQL queries for performance by examining execution plans and applying best practices like indexing. Perform a profitability analysis and identify profitable customers using SQL.

Software required for practical:

1. MySQL: The core relational database management system used for creating and managing databases.

2. MySQL Workbench: A graphical interface for MySQL that allows for database design, query execution, and performance analysis.

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Syllabus

Course Code	Course Name	L	T	P	Total
MS3CO40	**Data Analytics with Python**	**2**	0	**2**	4

Course Objectives

- Introduce Jupyter Notebook and its application, provide a basic understanding of Python. Provide the knowledge of basic data structures and their implementations.
- Provide the knowledge of advanced Python Programming such as decision making, function, comprehensions, oop etc.
- Introduce Python library Numpy which is commonly used for data science and analytics.
- Introduce Python library Pandas which is one of the most commonly used data science and analytics library.
- Understanding Data Cleaning for making analytics error-free. Introduce Kaggle Platform.

Course Outcomes

Upon successful completion of this course, students will be able to:

CO1: Build basic programs using Python's fundamental constructs like variables, arithmetic operations, and basic data structures.

CO2 : Develop advanced programs using decision making, loops, functions, and object-oriented programming concepts.

CO3 : Perform data manipulation using NumPy, including operations on one-dimensional and multidimensional arrays.

CO4 : Utilize Pandas for data analysis by handling rows, columns, indexing, slicing, and managing time-series data.

CO5 : Retrieve and clean data from various sources, and engage with Kaggle for datasets and competitions.

Course Contents

Unit 1

Introduction to Python Programming: History of Python and its Importance, Introduction to Jupyter Notebook, Data Types in Python, Arithmetic Operations, String Operations, Tuples, Lists, Sets, Dictionaries

Unit 2

Advanced Python Programming: Decision Making, Loops and Iterations, Comprehensions, Functions in Python, Map, Filter and Reduce Functions, Class and Objects Methods, Class Inheritance and Overriding

Unit 3

Python for Data Science: Numpy : Introduction to Numpy, Basics of Numpy, Operations Over 1-D Arrays, Multidimensional Arrays, Creating NumPy Arrays, Manipulating NumPy Arrays

Unit 4

Python for Data Science: Pandas : Introduction to Pandas, Basics of Pandas, Pandas: Rows and Columns, Describing Data, Indexing and Slicing, Operations on Data frames, Grouping and Pivoting, Merge and Append Handling Time-Series Data

Unit 5

Data Acquisition and Cleaning in Python and Intro to Kaggle : Reading Delimited and Relational Databases Reading Data From Websites, Getting Data From APIs, Reading Data From PDF Files, Cleaning Datasets, Introduction to Kaggle, Creating an Account Datasets, Competitions Discussion Forum

Text Books

1. Python for Data Analysis : Wes McKinney, O'Reilly Media,2nd Edition (2017)
2. Learning Python : Mark Lutz,O'Reilly Media,5th Edition (2013)
3. Python Programming: A Modern Approach: Vamsi Kurama,Pearson Education India, 1st Edition (2018)

Reference Books

1. Python Data Science Handbook :Jake VanderPlas, O'Reilly Media, 1st Edition (2016)

2. Automate the Boring Stuff with Python : Al Sweigart, No Starch Press, 2nd Edition (2019)
3. Data Science from Scratch: First Principles with Python:Joel Grus, O'Reilly Media, 2nd Edition (2019)

Web reads

1. Real Python: Tutorials on Data Science
2. Kaggle Learn: Python
3. GeeksforGeeks: Python Pandas Tutorial

Lab List

Unit 1: Introduction to Python Programming

1. **Lab 1: Data Types and Operations**
    - **Question:** Write a Python script to demonstrate the usage of different data types (integer, float, string, and boolean). Perform basic arithmetic and string operations.
    - **Software Required:** Jupyter Notebook or Anaconda.
2. **Lab 2: Collections and Iteration**
    - **Question:** Create a Python program that uses lists, tuples, sets, and dictionaries. Write a script to iterate over each collection and perform operations such as adding, removing, and updating elements.
    - **Software Required:** Jupyter Notebook or Anaconda.

Unit 2: Advanced Python Programming

3. **Lab 3: Decision Making and Loops**

- **Question:** Write a Python program that simulates a basic banking system with options for depositing, withdrawing, and checking balance using decision-making statements and loops.
- **Software Required:** Jupyter Notebook or Anaconda.

4. **Lab 4: Functions and Comprehensions**
    - **Question:** Develop a Python script that defines multiple functions for mathematical operations (e.g., factorial, Fibonacci sequence). Use list comprehensions to filter and modify a list of numbers.
    - **Software Required:** Jupyter Notebook or Anaconda.
5. **Lab 5: Object-Oriented Programming**

    - **Question:** Create a Python class for a library system, including methods for adding, removing, and displaying books. Implement inheritance to create specialized classes for different book categories.
    - **Software Required:** Jupyter Notebook or Anaconda.

Unit 3: Python for Data Science: Numpy

6. **Lab 6: NumPy Basics**

- **Question:** Write a Python program to create and manipulate NumPy arrays. Perform operations such as reshaping, slicing, and element-wise arithmetic.
- **Software Required:** Jupyter Notebook or Anaconda.

7. **Lab 7: Multidimensional Arrays**
    - **Question:** Develop a Python script to perform matrix multiplication and other linear algebra operations using NumPy. Demonstrate the use of broadcasting with NumPy arrays.
    - **Software Required:** Jupyter Notebook or Anaconda.

Unit 4: Python for Data Science: Pandas

8. **Lab 8: DataFrame Operations**

- **Question:** Load a CSV file into a Pandas DataFrame. Perform basic data manipulation such as sorting, filtering, grouping, and pivoting.
- **Software Required:** Jupyter Notebook or Anaconda.

Unit 5: Data Acquisition and Cleaning in Python

9. **Lab 9: Web Scraping and Data Cleaning**

- **Question:** Develop a Python script to scrape data from a website using libraries like BeautifulSoup and Requests. Clean the scraped data by handling missing values, duplicates, and formatting issues.
- **Software Required:** Jupyter Notebook or Anaconda, BeautifulSoup, Requests.

Software required for practical

1. **Jupyter Notebook or Anaconda:** Essential for running Python code in an interactive environment.
2. **NumPy:** For numerical computations and array manipulations.
3. **Pandas:** For data manipulation and analysis, especially with DataFrames.
4. **BeautifulSoup and Requests (for Web Scraping):** For data acquisition from web sources.

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Syllabus

Course Code	Course Name	Hours per Week			Total	
		L	T	P	Hrs.	Credits
MS3CO41	Business Ethics & Corporate Social Responsibility	3	0	0	3	3

Course Objectives (COs):

1. To familiarize the learners with the concept and relevance of Business Ethics in the modern era
2. To understand the importance of human values and moral issues in business
3. To learn the ethical perspectives in different functional department of the organization such as marketing, finance, strategy and ethical issues at workplace.
4. To enable learners to understand the scope and complexity of Corporate Social responsibility

Course Outcomes (COs):

After completion of this course the students shall be able to:

1. Explain the concept of ethics, morality, values and utilise them to solve typical real life business problems.
2. Understand the importance of human values and moral issues in business
3. Demonstrate the ethical perspectives in different functional department of the organisation such as marketing, finance, strategy and ethical issues at workplace.
4. Analyze the different approaches of Corporate Social Responsibility (CSR) and discuss the current CSR practices.

Course Contents:

Unit-I: Introduction:

Business Ethics: Meaning, Scope ,purpose and Importance; Business Ethics in Indian Perspective, Sustainability: Approaches and Practices of Business Ethics; Ethical Decision Making and Process, Relevance of Ethics and Values in Business; Codes of Ethics; Ethical Behaviour of Manager. Ethical theories: Normative and descriptive ethical theories,

Unit – II: Business Ethics and Management:

Aspects of Ethics in Management, Business Values, Management process and ethics,Professional Ethics and Religion, Ethos of Vedanta in management, Business Ethics &

Cultural Ethos; role of various agencies in ensuring ethics in business; Setting standards of ethical Behaviour; Managing stakeholder relations;

Unit – III: Moral Issues in Business:

Meaning of Human Values: Morality and Ethie & Business Values;Types and relevance of Values: Societal, Aesthetic, Organizational and Spiritual Values; Value Crisis in Management; concept of Professional Ethics and Religion Purpose Concept of Karma Implications of moral issues in different functional areas of business (finance, HR, and marketing)

Unit – IV: Corporate Social Responsibility (CSR):

Definition, Concept and objectives of CSR, Evolution of CSR in India, and Strategic Planning, CSR and Corporate Sustainability; CSR and Business Ethics, : CSR provisions under the Companies Act 2013: CSR Committee: CSR Models, Codes, and adherence to Standards. Corporate social reporting and its objectives.

Unit – V: Moral Issue in CSR:

CSR and Corporate Governance Creating Work-committed cultures in Organizations and Quality of Work Life. Implications of moral issues in different functional areas of business (finance, HR, and marketing). Whistle blowing; Marketing truth and advertising: Manipulation and coercion, Trade secrets, Insider trading; Equal employment opportunity, Affirmative action, Consumerism; Environmental protection..

Suggested Cases

• A Dent in Wal Mart's public Image - The PR Strategy.
• China Aviation Oil's Collapse, Singapore INC's challenges.
• Child labor in Coca Industry , Obesity Concerns: Burger Kings Product Revenges

Text Books:

1. A.C Fernando, Business Ethics: An Indian Perspective, Pearson
2. Weiss, Business Ethics Concept &Cases, Cengage Learning
3 Murthy, Business Ethics, Himalaya Publishing House
4.Dr. Neeru Vasishth and Dr. Namita Rajput - Corporate Governance values and ethics, Taxmann
Publications Pvt Ltd, New Delhi.

Reference Books:

1. S.K. Chakraborty, Ethics in Management-Vedantic Approach, New Delhi, Oxford India Ltd.,

2. A.C.Fernando, K.P.Muralidharan & E.K.Satheesh – Corporate Governance, Principles, Policies
and Practices, Pearson Education
3. Dr.S.S. Khanka – Business Ethics and Corporate Governance, S.Chand Publication.
4. Taxmann - Corporate Governance, Indian Institute of Corporate Affairs,