Gautam Buddha University School of Management

Greater Noida

Programme: MBA (Business Analytics and Data Science)

Course: FINANCIAL ACCOUNTING & ANALYSIS (MBA-451)

Instructor	: Dr. Satish K. Mittal	Year/ Sem	: 2024-25/Sem- I,
Email	: skumar@gbu.ac.in	Phone	: 01202346170
Department	: Business Management	Credit	: 3
Sessions	: Forty Five	Each Session	: 60 Minutes

Introduction:

Financial accounting keeps track of a company's financial transactions. Using standardized guidelines, the transactions are recorded, summarized, and presented in a financial report or financial statement such as an income statement or a balance sheet. Its purpose is to provide enough information for management and others to assess the value of a company for them.

Aims and Objectives:

(a) To help the students gain a thorough understanding about the process and accounting system in an organization and generation of reports through this systems. The uses of various accounting information in business decision, internal as well as external reporting purposes.

(b) To develop expertise in analyzing the financial performance of a company with the help of scanning the Balance Sheet and Profit & Loss Account.

(c) To develop an appreciation of corporate financial reporting system in the national and international context i.e. the role of International Accounting Standards (IAS), Generally Accepted Accounting Principles (GAAP) as well as Indian Accounting Standards (AS).

(d) To provide insights into using accounting information for decision-making with help of Fund flow and Cash flow analysis

Pedagogy:

A mix of instructional methods will be used like lectures, case analysis and exercises. The efforts would be made to strengthen the conceptual knowledge and application through cases and exercises. Emphasis throughout will be applications of concepts, principles and techniques to company data available from published sources. Special Emphasis will be given to help the participants to develop analytical ability to analysis corporate financial reports. This will be done on the basis of a company balance sheet. Case and Exercises will be announced separately.

Learning Outcomes:

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

- ➤ Understand the accounting process and accounting system in an organization.
- ➤ Prepare Financial Statements of the company.
- ➤ Use of various accounting information in business decision with help of Fund flow and Cash flow analysis.
- ➤ Analyze the financial performance of a company with the help of scanning the Balance Sheet and Profit & Loss Account.

Evaluation Scheme:

Continuous assessment will be done. All the students are advised and expected to be regular in all evaluation exercises.

➤ Mid Semester Exams	25%
➤ Class Participation	05%
➤ Quizzes/ Class Tests/Presentations/	10%
➤ End Term- Semester Exam	60%

Suggested Readings:

1. R. Narayanaswami: Financial Accounting; a managerial Perspective (2011), 4th Edition, P H I Learning Pvt Ltd (R N)
2. S. N. & S.K. Maheshwari : Accounting for Managers by Vikas Publication (SN-1)
3. T. P. Ghosh – Financial Accounting for Managers (TSG)
4. M.Y. Khan and P. K. Jain : Management Accounting (KJ)
5. Kieso and Weygandt: Financial Accounting (KW)
6. Robert Anthony,Hawkins and Merchant – Accounting: Text and Cases, 13th Edition, MCGraw Hills Publications. (AHM)
7. Maheshari and Maheshwari - Corporate Accounting (M&M)

SESSION NO.	TOPICS TO BE COVERED	Reference Books
1-2	Overview of Accounting, Evolution of Accounting, Types of Accounting, Need and Scope of Accounting,	(R N)-Chap.-1, Pg.-7-39
3-4	Accounting Concepts and Conventions and its Significance	(R N)-Chap.2, Pg.-56-75
5	Accounting Policies-Tangible & Intangible Assets and depreciation, Accounting Standards, GAAP,	(SN-1)-Chap-2, pg-1.15-1.29
6-7	The concept of double entry- Accounting Equation, (Exercise on Accounting Equation) Case -1	(R N)-Chap.-1, Pg.-28, Chap.2, Pg.-56-75
8-9	Types of accounts, Fundamental Principles-Golden rules of accounting	(SN-1)-Chap-2, pg-1.15-1.29
Quiz – 1,		
10-11	Accounting Process-Recording Transactions, Cash Book, Subsidiary Books,	(R N)--Chap.-3, Pg.-107-122
12-13	Journalizing of transactions, Ledger and Trial Balance	(SN-1)-Chap.4, Pg.-1.47-1.52
14-15	Ledger and Trial Balance Practice	(SN-1)-Chap.4, Pg.-1.47-1.52
16	Final Accounts-Capital and Revenue Expenditure/Receipts	(R N)--Chap.3, Pg.-107-122 (Handouts)
17-21	Formats of Mfg. Acc., Trading and P/L Acc., Profit Appropriation Acc. and Balance Sheet with contents (Case-2)	(SN-1)-Chap.9, 1.140-1.143, chap-10, pg-1.148-1.185
22-24	Preparation of Final Account and B/S with practice questions	(R N)--Chap.3, Pg.-2.7-2.68
25	Final Accounts from Incomplete Records	(R N)-Chap.8, Pg.-8.1-8.56 (SN-1)chap-10,
26-28	Policies related with Depreciation, Inventory and Intangible Assets with practice questions (Case-3)	(R N)-Chap.6, 7 & 8
Quiz – 2		
29-30	Financial Statements Analysis Part I: Understanding Annual Reports, Chairman's Statement, Directors' Report & Auditors Report, Statement of Accounting Policies followed & Notes to Accounts	(AHM)-Chap.14,Pg402-433
31-32	Presentation & Discussion on Financial Statement	
33-34	Financial Statements Analysis Part II: Meaning and types, Common size statement, Comparative B/S and Trend Analysis.	(RN) Chap-11, (AHM)-Chap.14
35-37	Ratio Analysis: Liquidity and Activity Ratios, Solvency and Profitability Ratios & Problems	(RN) Chap-11
38-39	Cash Flow-Meaning and concept only (Exercise)	(RN) Chap-12
40-41	Creative Accounting and Implications, Inflation and Human Resource Accounting, Global Financial Reporting,	(Handouts)
42-43	Presentation & Discussion on Financial Statement Analysis	
44-45	Reconciliation of Profit determined as per Indian vs. International GAAPs. Window Dressing in the Statements	(Handouts)

Gautam Buddha University School of Management
Greater Noida

MBA (Business Analytics and Data Science)
Course: Managerial Economics (MBA-453)

Instructor:	Dr. Ombir Singh	**Year/Sem:**	2024-25/ I
Email:	omvir.singh@gbu.ac.in	**Phone:**	0120-2346161
Department:	Business Management	**Credit:**	Three
Sessions:	Forty Five	**Each Session:**	60 Minutes

Introduction: In today's dynamic economic environment, effective managerial decision-making requires timely and efficient use of information. Managerial Economics is the application of economic theory and methodology to managerial decision making problems within various organizational settings. The emphasis in this course will be on demand analysis and estimation, production and cost analysis under different market conditions.

Aims and Objectives: The course aims to sharpen the analytical skills of the students through integrating the theories of micro economic concepts to decision making. The objective of this course is to provide students with a basic understanding of the economic theory and analytical tools that can be used in decision-making problems.

Pedagogy: The teaching pedagogy will combine lecture cum discussions, cases, assignments and exercises. Classes will be interactive. The principle teaching method will be lectures. Problem sets will be handed out to be solved by groups of students (each group member is expected to contribute equally to the solution of the problem).

Learning Outcomes: After completing this course students should-
1. be acquainted with the concepts of Micro Economics
2. be able to apply economic concepts to various organizational settings and,
3. develop skills to use economic theories in managerial decision making.

Evaluation Scheme:

Class participation/Attendance	10%
Class Test/Quiz	5%
Assignment	5%
Presentation:	5%
Mid-Sem Exam:	25%
End-Sem Exam:	50%

Textbook:

1. Salvatore, D, *'Managerial Economics'*, Thomson, 2008.

Suggested Readings:

1. Peterson, Lewis & Jain, *'Managerial Economics'*, Pearson Education, 2009.
2. Keat, P. and Young, P. *'Managerial Economics: Economic Tools for Today's Decision Makers'*, Prentice Hall, 2003.
3. Mehta P L, *'Managerial Economics: Analysis, Problems and cases'*, Sultan Chand and Sons, 10th edition, 2004.
4. G S Gupta, *'Managerial economics'*, Tata McGraw Hill, 2003.
5. Mote V, Paul S and Gupta G, *'Managerial economics: Concepts and cases'*, Tata McGraw hill, 2001.
6. Trivedi, M L, *'Managerial economic: Theory & Applications'*, Tata McGraw Hill, 2003.
7. Koutsyannis A, *'Modern Microeconomics'*, Macmillan, 1979
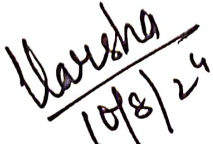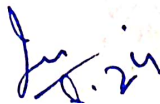8. Adhikary, M, *'Managerial economics'*, Khosla & co, 2005

Session Plan: (*Each session of 60 minutes*)

Session No.	Lecture Title
1.	Managerial Economics- Introduction, significance, scope. • **Textbook:** Salvatore Cht 1 **Other references:** Keat & Young Cht1; Mehta Cht 1; Adhikary Cht 1; Peterson & Lewis Cht 1; Trivedi Cht 2.
2-3	Basic tools & Concepts related to Managerial Economics: opportunity cost, marginalism, incrementalism & equi marginalism, time perspective, discounting & compounding. • **Textbook::** Salvatore Cht 1,2 • **Other references:** Keat & Young Cht1, 3; Mehta Cht 2; Peterson & Lewis Cht 1, 3; Adhikary Cht 1, 2, 6; Trivedi Cht 2, 8
4 -6	Demand Analysis: demand curve, demand schedule, law of demand, determinants of demand, exceptional demand curves, change in demand versus change in quantity demanded, market demand. • **Textbook: :** Salvatore Cht 3 • **Other references:** Keat & Young Cht3; Mehta Cht 5; Peterson & Lewis Cht 3; Adhikary Cht 6; Trivedi Cht 8

7-8	Marginal Utility approach, Indifference Curve approach- Indifference curve, Budget line, consumer equilibrium. • **Textbook:** Salvatore Cht 3 • **Other references:** Mehta Cht 4; Koutsoyiannis Cht 2; Peterson & Lewis Cht 3
9-11	Elasticity of demand: meaning, measurement, determinants, and business applications. • **Textbook: :** Salvatore Cht 3 • **Other references :** Keat & Young Cht 4; Mehta Cht 6; Peterson & Lewis Cht 3; Adhikary Cht 6; Trivedi Cht 9
11-14	Demand forecasting: meaning, objectives and methods • **Textbook: :** Salvatore Cht 4,5 • **Other references:** Keat & Young Cht 5, 6; Mehta Cht 7; Peterson & Lewis Cht 5; Trivedi Cht 10
15	Case
16-17	Supply & Production decisions- supply curve, supply schedule, law of supply, determinants of supply, change in supply versus shift in supply, elasticity of supply- meaning, types, measurement. • **References:** Keat & Young Cht3, 4; Adhikary Cht 7; Trivedi Cht 8; Peterson & Lewis Cht 6; Koutsoyiannis Cht 3.
18-19	Short run analysis of production function- one factor variable (law of variable proportions) (Returns to a factor). • **Textbook: :** Salvatore Cht 6 • **Other references:** Peterson & Lewis Cht 6; Mehta Cht 10; Adhikary Cht 7; Trivedi Cht 13; Koutsoyiannis Cht 3
20-21	Short run analysis of production function - Two factors variable Iso-quants, ridge lines, isocost lines, optimal combination of inputs,expansion path. • **Textbook: :** Salvatore Cht 6 • **Other references:** Peterson & Lewis Cht 6; Mehta Cht 10; Adhikary Cht 7; Trivedi Cht 13; Koutsoyiannis Cht 3

School of Management
Gautam Buddha University
Greater Noida

Programme: MBA (Business Analytics and Data Science)
Course Quantitative Methods I [Code: MBA 455]

Instructor: Dr Rakesh Kumar Srivastava
Email: rakesh@gbu.ac.in
Department: Business Studies (SOM)
Session: 45

Year/Sem:2024-25 / I Sem
Phone:0120-234-6159
Credit: 3
Each Session: 60 Minutes

Introduction: Statistics is the art and science of collecting, analyzing, presenting, and interpreting data. It includes *descriptive analysis* (the study of methods and tools for collecting data and mathematical models to describe and interpret data) and *inferential statistics* (the systems and techniques for making probability-based decisions and accurate predictions based on sample data). In today's global business and economic environment, vast amount of statistical information is available. The successful managers and efficient decision makers are the ones who can understand the information and use it effectively and hence it has become very desirable to understand and practice statistical thinking.

Aims and Objectives: This course is designed to help the students get the feel of statistics: what it is, how and when to apply statistical techniques to decision-making situations. The objective of the course is to:

1. Use mathematical concepts in the resolution of management decision problems.
2. Introduce various basic quantitative techniques and develop an analytical toolset that can be used to analyze business models.
3. Introduce concepts of data analysis and decision making under uncertainty
4. To inculcate the attitude if ensuring impermeability of well thought- out solutions to decision problems.

Pedagogy: Class time will be used to expose various concepts and illustrate their applications to business situations. The course is well supported with various business examples and cases. The emphasis in the class will be on learning by doing. Success (or failure) in this course will, therefore, to a large extent be determined by the amount of effort that you put in outside class. Homework may be assigned and is due at the beginning of class on the designated submission date.

Learning Outcomes: By the end of the course, it is expected that the students will be able to

- Understand basic Statistical concepts.
- Develop skills in structuring and analyzing problems.
- Apply a range of statistical test and analyzing problems.
- Use statistics creatively and productively in decision making.

Evaluation Scheme:

Class participation / Quiz:	15
Assignments/Cases/Presentation:	10
Mid Sem	25
End-Sem Exam:	60
TOTAL	**100**

Text Book:

Levin, R.I., & Rubin, D.S.: Statistics for Management, 7th Ed., Prentice-Hall India.

Anderson D., Sweeney D., & Williams T.: Statistics for Business and Economics, Tomson.

Reference Books:

1. Render, B., Stair Jr. R. M., & Michael E. H.: Quantitative Analysis for Management, 8th Ed., Pearson Education.
2. Beri, G.C.: Business Statistics, 2nd Ed., Tata Mc Graw-Hill.
3. Keller, G.: Statistics for Management and Economics, 7th Ed., Thomson.

Session Plan: (Each session of 60 minutes)

S. No.	Topics to be covered	Readings
1-10	**Module I: Data and Statistics** Descriptive Statistics: Numerical Methods – measures of Central Tendency, Measures of Dispersion, Covariance, Kurtosis Probability: Concepts & Enumeration, Bayes' Theorem	Chap 3 (TB) Chap 4 (TB)
11-18	**Module II: Probability Distributions** Discrete Distributions- Binomial Distribution, Poisson Distribution Continuous Distributions – Normal Distribution: Normal Curve, Standard Normal Probability Distribution	Chap 5 (TB)
19-22	**Module III: Sampling and Sampling Distributions** Random Sampling, Non-Random Sampling, Sampling Distribution	Chap 6 (TB)
23-28	**Module IV: Hypothesis Testing** Developing Null and Alternative Hypothesis, Type I and Type II Errors, one – Tailed and Two-Tailed tests with σ Known and σ unknown. Hypothesis Testing and Decision Making	Chap 8 (TB)
29-33	**Statistical Inference with Two Populations** Hypothesis Techniques-Two Sample Test: σ_1 andσ_2 known Two simple tests: σ_1 andσ_2 known Hypothesis Testing: Dependent Samples	Chap 9 (TB)
34-37	**Module V: Test of Goodness of Fit and Independence** X^2 – test – As a test of independence X^2 – test- Inferences about one population variance	Chap 11 (TB)
38-41	**Analysis of Variance and Experimental Design** Analysis of Variance – Testing for Equality of K Population Means Analysis of Variance – Inferences about two population variance.	Chap 11 (TB)
42-45	**Linear Regression** Simple Linear Regression model, Least Square Method, Correlation: Coefficient of Determination and Testing for Significance	Chap 12 (TB)

Varsha
15/8/24

Gautam Buddha University School of Management
Greater Noida
Master in Business Administration (Executive Programme)
Course: MBA-457 (Data Analytics with Python)

Semester	:I	
		Academic Session: 2024-25
Programme	: MBA	
		Batch:2024-26
CourseCode	:MBA457	
		Credits: 02
CourseName: Data Analytics using Python		Phone: 9910340640
Instructor	:Mr. Akshay Taneja	
		Email:
Sessions	:30	
		EachSession:60 Minutes

Introduction:

Welcome to the world of Data Analytics using Python! This course is designed to equip MBA students with the essential skills and knowledge needed to harness the power of data in today's business environment. In the digital age, data has become a critical asset, driving decisions and strategies across industries. Through this course, you will learn how to collect, process, analyze, and interpret data to make informed business decisions. Python, a versatile and widely-used programming language, will be our primary tool, offering a robust and efficient platform for data manipulation and analysis.

The course will cover various key concepts and techniques in data analytics, starting with an introduction to Python and its essential libraries, such as Pandas, NumPy, and Matplotlib. These libraries form the backbone of data manipulation and visualization in Python, enabling you to efficiently handle large datasets and create insightful visual representations. You will then delve into data preprocessing methods, crucial for cleaning and preparing raw data for meaningful analysis. As we progress, you will explore statistical analysistechniques, allowing you to uncover patterns and make predictions based on data. By the end of this course, you will have the practical skills to apply data analytics in real-world business scenarios, empowering you to make data-driven decisions and drive strategic initiatives within your organization.

In addition to the technical skills, this course will emphasize the practical application of data analytics in various business contexts. You will engage in hands-on projects and case studies that simulate real-world business problems, allowing you to apply your analytical skills to derive actionable insights. These projects will cover diverse areas such as marketing analytics, financial analysis, supply chain optimization, and customer segmentation, providing a holistic understanding of how data analytics can be leveraged across different functions. By working on these practical exercises, you will gain confidence in your ability to translate data into strategic business decisions, making you a valuable asset in any data-driven organization.

Aims and Objectives:

Aims: The aim of this course is to provide MBA students with a comprehensive understanding of data analytics and its application in the business world. Through the use of Python, students will develop the technical skills necessary to analyze complex data sets and extract meaningful insights. The course seeks to empower students to make data-driven decisions that can enhance business performance and drive strategic initiatives. Additionally, the course aims to foster a deep appreciation for the role of data in modern business and the potential it holds for innovation and competitive advantage.

Course objectives:

1. **Develop Proficiency in Python:** Gain a strong foundation in Python programming and its libraries such as Pandas, NumPy, and Matplotlib, which are essential for data analysis.
2. **Understand Data Preprocessing:** Learn techniques for cleaning, transforming, and preparing raw data for analysis to ensure accuracy and reliability of results.
3. **Master Data Visualization:** Acquire skills to create compelling visual representations of data to communicate insights effectively to stakeholders.
4. **Perform Statistical Analysis:** Develop the ability to apply statistical methods to analyze data, identify trends, and make predictions.
5. **Engage in Practical Applications:** Work on hands-on projects and case studies that simulate real-world business scenarios, applying data analytics to solve business problems.
6. **Enhance Decision-Making Skills:** Learn to interpret and use data-driven insights to make informed business decisions and develop strategic initiatives.
7. **Foster Critical Thinking:** Cultivate the ability to critically evaluate data sources, methods, and outcomes to ensure robust and ethical use of data in business contexts.

Learning Outcomes:

By the end of this course, students will be able to:

1. **Analyze Complex Data Sets:** Utilize Python and its libraries to manipulate, analyze, and visualize large and complex data sets, deriving meaningful insights that can inform business decisions.
2. **Apply Data Preprocessing Techniques:** Effectively clean, transform, and prepare raw data for analysis, ensuring high-quality and reliable datasets for accurate results.
3. **Implement Statistical and Machine Learning Methods:** Apply statistical analysis and machine learning algorithms to identify patterns, trends, and relationships within data, making data-driven predictions and recommendations.
4. **Communicate Data Insights:** Create compelling data visualizations and reports that clearly communicate analytical findings to both technical and non-technical stakeholders, enhancing decision-making processes.
5. **Solve Real-World Business Problems:** Apply data analytics skills to practical business scenarios through projects and case studies, demonstrating the ability to translate data insights into strategic actions that drive business success.

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Pedagogy:

The pedagogy will be a mix of lectures, experience sharing, real life case discussion, assignments and industry/research-based projects. In addition to the reading materials, additional readings and cases will be distributed in the class from time to time. Students are also expected to prepare and analyze all the cases as class participation is very important.

ASSESSMENT/EVALUATION:

Component	MaximumMarks	Duration(Hr)
Mid-term	25	1.5
End-term	60	3.0
InternalAssessment *(Quizzes/ClassTests/Assignments/ Class Participation/Presentation&Discussions)*	15	Continuous

Suggested Readings/websites:

1. "Python for Data Analysis" by Wes McKinney
   This book is a comprehensive guide to data manipulation with Pandas, NumPy, and IPython. It provides practical case studies and examples that will help you understand how to use Python for data analysis effectively.

2. "Data Science for Business" by Foster Provost and Tom Fawcett
   A fundamental book that explains the principles of data science, how to approach data-analytic thinking, and how to extract valuable insights from data to drive business decisions.

3. "Practical Statistics for Data Scientists" by Peter Bruce and Andrew Bruce
   This book covers essential statistical concepts needed for data science and business analytics, focusing on practical applications of these techniques using R and Python.

Lectures	Course Content	Book
1-4	**Unit-1 Introduction to Python** What is Python, its advantages and disadvantages, howto run python scripts, how to use variables, string and mathematical operators andfunctions.	IBM Study Guide
5-10	**Unit-2 Deep Dive into Python** In depth working of Python like inputting the data, working with Boolean and other statements.If and	IBM Study Guide

	elif statement in python, while loop in python, lists and for statement.	
11-15	**Unit-3 Python Libraries** Use of Pandas library for data analysis, Work with series and data frames, Work on grouping, aggregating and applying different functionson data, Merge and Join the data	IBM Study Guide
16-17	**Unit-4 Error Handling** How to deal with different type of errors that one canencounter while working with Python, deal with the exceptions	IBM Study Guide
18-20	**Unit-5 Expression and matching** Work with regular expression, Work with Pattern matching and Parse data	IBM Study Guide
21-23	**Unit-6 Regression** Introduction to Regression, Applications and regression analysis using use case	IBM Study Guide
24-27	**Unit-7 Other Regression related topics** Introduction to exploratory analysis, correlation matrix, visualization using matplotlib in Python and implementation of Linear regression	IBM Study Guide
28-30	**Unit-8 Introduction to Machine learning algorithms** Implementation of machine learning algorithm, work on Support Vector Machines and introduction to Random Forest	IBM Study Guide

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Gautam Buddha University
University School of Management
Greater Noida

TEACHING-LEARNING PLAN
Programme: MBA(Business Analytics and Data Science)

Course: Spread Sheet Modeling and Statistical Analysis (MBA-459) (Practical Paper)

Faculty:	Dr. Indu Uprety	**Year/Sem:**	2024-25/I
Department:	Deptt of Business Management	**Credit:**	02
Sessions: 30		**Each Session:** 60 Minutes	

Introduction:
Spreadsheets are key software for many businesses and organizations, helping them to keep track of numerical information and analyze it quickly and more easily than with paper records. Spreadsheets model financial, statistical and any other numerical data within systems of rows and columns. Each data item is contained within a single cell within these rows and columns. Cells can also contain formulas and references to other cells, so a spreadsheet can include calculations that are automatically processed when the values in the cells are edited. In this sense, spreadsheets continually update when new data is added.In today's business world, a manager who knows how to use spreadsheets for tabulation, optimization, and data analysis in support of the decision analysis will have greater advantage over those who lack these crucial skills. This technology enables organizations to be more knowledgeable about their own activities. This, in turn, allows managers to make decisions more quickly which can lead to organizations gaining competitive advantage.

Course Objectives and Scope:
This course aims to equip students with fundamental skills in Excel modeling and statistical analysis. The course will cover the basics of Excel, including data entry, formatting, andbasic functions, before advancing to more complex modeling techniques and statistical analysis. This course structure ensures a comprehensive understanding of both Excel modeling and statistical analysis, providing practical skills that can be applied in various professional contexts.

Course Outcomes:

On completion of this course, a learner will:
- understand the role of business analytics within an organization.
- understand how spreadsheets can be used to create data formats for modeling and analysis.
- develop fundamental skills in Excel modeling and statistical analysis.
- understand how Excel models can support research and investigations.

Pedagogy:

The pedagogy will be a mix of lectures, Software/Lab Sessions and implementing the models using relevant algorithms/programs. Students are also expected to prepare and analyze all the cases/problems using Excel based tools and techniques.

Session Plan: (*Each session consists of 60 minutes and will have practice sessions in Computer Lab using MS-Excel and Solver*)

Sr. No.	Session No.	Topics to be covered
1	1-3	**Getting Started with Excel** ○ Overview of Excel interface ○ Basic navigation and data entry ○ Understanding cell references (relative, absolute, mixed) **Excel Basics** ○ Formatting cells, rows, and columns ○ Using basic formulas and functions (SUM, AVERAGE, MIN, MAX) ○ Introduction to data types (text, numbers, dates)
2	4-7	**Data Management** ○ Sorting and filtering data ○ Using conditional formatting ○ Data validation techniques **Basic Data Analysis** ○ Descriptive statistics (mean, median, mode, standard deviation) ○ Creating and interpreting basic charts (bar, line, pie) ○ Introduction to PivotTables
3	8-11	**Advanced Formulas and Functions** ○ Using logical functions (IF, AND, OR) ○ Lookup and reference functions (VLOOKUP, HLOOKUP, MATCH, INDEX) **Text Functions and Data Cleaning** ○ Text functions (LEFT, RIGHT, MID, CONCATENATE, TEXT) ○ Data cleaning techniques (TRIM, CLEAN, SUBSTITUTE)
4	12-16	**Introduction to Excel Modeling** **Building Basic Models** ○ Understanding model structure ○ Creating simple financial models (e.g., budget, break-even analysis) ○ Sensitivity analysis using data tables **What-If Analysis Tools** ○ Using Goal Seek ○ Scenario Manager ○ Solver for optimization problems
5	17-20	**Regression Analysis** **Simple Linear Regression** ○ Understanding correlation and causation ○ Creating scatter plots and trendlines

		o Interpreting regression output (slope, intercept, R-squared)
		• **Multiple Regression Analysis**
		    o Adding multiple predictors
		    o Interpreting coefficients and significance levels
		    o Model evaluation and selection
		•

6	21-25	**Time Series Analysis**
		• **Introduction to Time Series Analysis**
		    o Understanding time series data
		    o Plotting time series and identifying patterns (trend, seasonality)
		• **Forecasting Techniques**
		    o Moving averages
		    o Exponential smoothing
		    o Using Excel's built-in forecasting tools

7	26-30	**Advanced Topics and Final Project**
		• **Advanced Statistical Techniques**
		    o ANOVA (Analysis of Variance)
		    o Chi-square tests
		    o Introduction to logistic regression
		• **Final Project and Review**
		    o Students present their final projects
		    o Review of key concepts
		    o Q&A session and course wrap-up

Suggested Resources:

Software: Microsoft Excel

Text Book:
1. "Excel Data Analysis For Dummies" by Paul McFedries
2. Spreadsheet Modeling for Business Decisions, John F. Cros, Kendall/Hunt Pub. Co. Edition: 2nd- 09.

Reference Books:
1. Business Data Analysis using Excel, David Whigham, Oxford.
2. Data Analysis and Business Modeling, Wayne L. Winston, PHI.
3. Spreadsheet Modeling and Decision Analysis, Cliff Ragsdale, Cengage Learning; 6th edition.
4. The Art of Modeling with Spreadsheets, Stephen G. Powell, Kenneth R. Baker, McGraw Hill.
5. Developing Spreadsheet-Based Decision Support Systems, Michelle M.H. Şeref, Ravindra K. Ahuja, and Wayne L. Winston, Dynamic Ideas, Belmont, Massachusetts.

Evaluation Scheme: (Practical Paper)

Assignments / Class participation,
Machine Test and Project Presentations etc.   : 50%
End-Sem Exam (Lab Exam)   : 50%

Teaching-Learning Plan

Semester: 1st	Academic Session: 2024-2025
Program: MBA (Business Analytics and Data Science)	Batch: 2024-2026
Course Code: MBA-461	Credits: Three
Course Name: Marketing Management	Email ID: naveen@gbu.ac.in
Faculty: Dr. Naveen Kumar	Session: 45 (60 Minutes Each)

COURSE OBJECTIVES:

- All business activities should aim at recognizing and satisfying customer wants and needs effectively. A marketing program starts with idea generation for a product and ends only when customers' wants have been completely satisfied. It might run well beyond the sale of the product, to ensure customer satisfaction and encourage repeat business. Marketing has become an inherent part of our lives and permeates every aspect of our day-to-day existence. Activities such as watching television, listening to the radio, reading the newspaper, buying grocery items – they are all dependent on marketing. Marketing focuses on satisfying human and social needs and wants, and helps companies transform private and social needs into profitable business opportunities. Marketing Management helps students understand the marketing management process and the nature of strategic planning in a marketing organization. It discusses different ways in which marketing programs can be developed and put into action.
- The focus of the course in on building up a managerial perceptual frame work for decisions related to Marketing Functions. The objective of the course is to make students familiar with the basic elements of Marketing analysis and planning and include the recent concepts and trends in marketing.

COURSE OUTCOME:

- On completion of the course of study, students should be able to:
- Proficient to understand and appreciate the concept of marketing in theory and practice.
- To evaluate the environment of marketing and develop a feasible marketing plan(process)
- To understand and apply the STP of marketing (Segmentation, targeting, Positioning)
- To understand and appreciate the concept of marketing strategy formulation and implementation.
- Develop skills in product and pricing strategy.
- Familiarize with designing and managing Integrated Marketing Communications and enhance problem solving and decision-making abilities in these areas.
- Devising strategies for entry into the global market.
- Providing a platform for presenting and defending their own case recommendations and critically examining and discussing others recommendations too.

TEACHING SCHEDULE:

S. No.	Topic	Classes Required (No.)	Remarks, if any
1.	**Introduction to Marketing** Nature, Scope and Importance, Definition and Evolution of Marketing, Core Marketing concepts, Marketing as a Function, Marketing Management, Marketing orientation or concepts, Marketing Process, Developing the Marketing Mix, The role of Marketing Mix in Marketing Planning and Marketing Strategy	1-5	
2.	**Understanding the Marketing Environment** Scanning the Environment, Meaning and Concepts, Microenvironment, Macro Environment, Responding to the Environment	6-9	
3.	Case Study	10	
4.	**Market Segmentation, Targeting and Positioning** What is Market Segmentation, Need for segmentation, Benefits of segmentation, Bases of segmentation, Segmenting consumer markets and Business Markets, Target Marketing, Positioning	11-14	
5.	**Buyer Behavior(Consumer Behavior)** What is Buyer Behavior, Meaning and Importance, Buyer Behavior Models, Buying characteristics influencing Buyer Behavior, Buying Motives, Buying Decision Making Process, types of Buyer Behavior, Stages in the Buying Decision Process, Buying Decision of organizational Buyer, Factor influencing organization Buyers	15-19	
6.	Case Study	20	
7.	**Product Decision** Concepts of Products, Levels of Products, Classification of Products, Concept of Product Life cycle, Product Decision, Product Mix Decisions, Brand Concepts,	21-25	
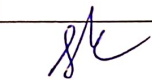
	Product Differentiation,		
8.	**Pricing Decision and Strategies** Importance of Pricing, Objectives of Pricing, Factor Influencing Pricing Decisions, Pricing Strategies, Steps in Pricing Procedure, , Special Pricing Strategies	26-30	
9.	**Distribution Decisions** Channels of Distribution, Role and Importance of channels, Functions of Channels, Channel Levels, Types of Intermediaries and Number, Selection of Channel for Consumer and Business Markets, Retailing, wholesaling-Types and service, Multichannel Marketing systems	31-35	
10.	**Marketing Communications** Components of Promotion Mix, Integrated Marketing Communications (IMC), Promotion Mix Strategies-Push and Pull, Factors Determining Promotion Mix, Developing Effective Advertising Programmes, trade Promotions, Public Relations, Popular Advertising Campaigns	36-41	
11.	**New Horizons in Marketing** The Future Belongs to Holistic Marketing, The 4 As Framework and Customer Focus, Brand-building Implications for the Present and the Future, Experiential Marketing, Emotional Marketing	42-44	
12.	Presentation and Discussion	45	

SUGGESTED READINGS

Topic No. as per above	Text Book/Hand Book (Including page no.)	Reference Book (Including page no.)	Others (Journals, Website etc.)
1.	KK Ch. 1	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	

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2.	KK Ch. 2	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
3.	Case study	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
4.	KK Ch. 3	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
5.	KK Ch. 4	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
6.	Case Study	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
7.	KK Ch. 7	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
8.	KK Ch. 16	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
9.	KK Ch. 12	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
10.	KK Ch. 13	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	
11.	KK Ch. 23	(KK) Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.	

Text book Note: (KK)   Karunakaran K, Marketing Management, Current Edition, Himalaya Publication.

Reference Books:

1. Kotler P, Keller, Koshy and Jha : Marketing Management, 13th Edition, Pearson Education.
2. Ramaswamy &Namakumari, Marketing Management, Planning, Implementation & control, McMilan, India, Third Edition.
3. Michael, Bruce & William, Marketing Concept and cases, McGraw-Hill, New Delhi, Thirteenth Edition.
4. Sherlekar S, "Marketing Management", Himalaya Publishing House, Mumbai.
5. Maurice & Mondell &larry Rosenberg - Marketing: Prentice Hall of India Ltd. New Delhi.
6. Mohammad Amanatuallh: Principles of Modern Marketing. Kalyani Publications New Delhi.
7. William J, Stanton and Charles Futrell, Fundamentals of Marketing, Tata McGraw Hill, New York.

ASSESSMENT/EVALUATION

Components	Maximum Marks	Duration (hr.)
Mid-term	25	01:30
End-term	60	03
Internal Assessment	15	-
Total	100	

Note: The distribution of marks (Section-wise) will be rescheduled accordingly by the Examination Section

Gautam Buddha University
School of Management
Greater Noida

2 year MBA (Business Analytics and Data Science)
Course: MBA:463 Management Principles and Practices

Instructor:	Dr. Varsha Dixit	**Year/Sem:**	2024-25 I
Email:	varsha@gbu.ac.in	**Phone:**	2346158
Department:	Business Management	**Credit:**	3
Sessions:	45	**Each Session:**	60 Minutes

Aims and Objectives: The course is designed to give a basic understanding of the role and functions of a manager and to explain the principles, concepts, and techniques used by managers in carrying out their work. A central concept of the course is that there is a general framework for understanding management that applies to managers in all organizations--large or small, public or private, product-oriented or service-oriented.

Topics covered in this course include values and ethics, communicating, planning, decision making, organizing, leading, controlling, and strategies. The course emphasizes the skills needed to apply management principles and concepts to real-life situations; students will analyze management issues and problems and how to formulate realistic, practical plans to resolve them. These practical skills are developed through case studies in the course assignments, and through applying course concepts to business situation and approaches.

Pedagogy: Entire course will be taught through lectures, relevant cases, and role plays.

Learning Outcome: At the end of this course students should have an understanding of the following:

- What is that process that drives the organization towards its performance?
- What is that specific organ of an organization that has the responsibility for delivering the results consistently?
- Who has the authority to plan, organize, lead, and control different organizational activities so that the organization attains it goals?
- What is that discipline, that body of organized knowledge, which deals with getting things done for, with and through people?
- Latest trends of basic management

Evaluation Scheme:

Sessionals	(assignments, quiz, presentations, class test)	: 15 Marks
Mid sem		: 25 Marks
End-Sem		: 60 Marks
Total		: 100 marks

Text Book

Stephen P. Robbins , David A. Decenzo, Sanghmitra Bhattacharya and Madhushree Nanda, ' Fundamentals of Management' Pearson education, 2009

Suggested Readings:

Krietner," Management Theory and Applications", Cengage Learning, India, 2009

Bhat, A & Kumar, A. Management- Principles, Processes, and Practices, Oxford University Press, 2008

Heinz , Koontz and O'Donnell ,' Essentials of Management' Tata Mc Graw Hill, New Delhi, 2009

Session Plan: (*Each session of 60 minutes*)

Session No.	Contents
1-6	**Introduction to Management** • Organizations & the need for Management • The Management Process • Types of Managers • Management Levels & Skills
7-12	**The Evolution of Management Theory** • Early thinking about Management • The Evolution of Management Theory • The Scientific Management School • Classical Organizational Theory School • The Behavioural School • The Management Science School • Recent Developments in Management Theory
13-16	**Planning** • Nature and purpose • Process • Principles • Types • Advantages and limitations • Case study
17-20	**Organizing** • Formal and informal organization • Organization structure & types • Line and staff organization • Departmentation

	• Case study
21-24	**Staffing** • Job design • HR Planning • Recruitment and selection • Training and development • Performance mgt • Career planning and mgt
25-28	**Directing** • Foundations of individual and group behavior • Motivation and its theories • Leadership types and theories • Communication process and barriers
29-32	**Controlling** • System and process of controlling • Budgetary and non budgetary control techniques • Use of IT in mgt control
33-37	• Discussion of latest management concepts and trends
38-40	**Decision Making** • The Nature of Decision Making • The Rational Model of Decision Making • The Rational Model in Perspective
41-45	Presentations

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Gautam Buddha University
School of Management
Greater Noida
Programme: MBA (Business Ananlytics and Data Science)
Course: Professional Development Lab (PDL)

Instructor: Dr. Lovy Sarikwal	**Year/Sem:** 2024/ First Sem.
Email: lsarikwal@gbu.ac.in	**Phone:** 6155
Department: Business Management	**course code –** MB-465,credits..2
Sessions: 60	**Each Session:** 60 + 60 Minutes

Introduction:

Professional development refers to skills and knowledge attained for both personal development and career advancement. Professional development encompasses all types of facilitated learning opportunities. There are a variety of approaches to professional development, including consultation, coaching, communities of practice, lesson study, mentoring, reflective supervision and technical assistance. *Professional Development Lab (PDL)* comprises of relevant exercises with a practical orientation, keeping in mind to imbibe and inculcate Personal & Professional skills to enable the students to compete with the corporate culture.

Objectives and Learning Outcomes:

- A man is known by his personality. It is the totality of a person and not merely the looks, but character, behavioural traits and attitude towards life. This Professional Development Lab (PDL) will act as manual for young students who are ready to plug into the highly competitive world. A practical, direct-action, personality enhancement guideline.
- PDL focuses on the presentation, communication skills group discussion & mock interviews.
- Non verbal communication or body language is the most powerful of all the languages. It is the language one's body speaks. The unique language can convey feelings and reactions, need & attitude wherever we go. This module helps to master this language through practice & hence develop personality of the candidates

Seminar/Pedagogy:

Entire course will be taught through lectures, relevant cases, management games, Role plays, Exercise and video clippings.

Evaluation Scheme:

Each module consists of 20 marks

Total : 100 marks

Session Plan (*Each session of 60 +60 minutes*)

Session Plan

Session	Module	Contents
1-5	**Module 1** **The journey of self discovery** Introducing Psychometric tests	• Foundation of individual behaviour • Evaluate your self (SWOT) • "Story telling of corporate leaders" • Role Model....Learnings to imbibe in self
6-10	**Module 2** General awareness and current affairs & Presentation Skills Introspection and self awareness	• **Discussion on current topics and genral awareness** • **Management Games**
11-15	**Module 3** **GD**	Group Discussion • Conducting GD, protocols of GD, one to one evaluation Presentation Skills • One to one presentation &evaluation • Non Verbal Communication • Body Language /Kinesics • Mannerism and Etiquette • Conceptual input through power point presentation and video clippings
16-20	**Module 4** **Resume writing/meetings**	• Basics of preparing a professional Resume • Protocols of holding/conducting/chairing meetings.
21-30	**Module 5** **Mock Interviews**	Mock Interviews • Introduction of interview types, conducting mock interviews of individual candidates

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10/8/24

Gautam Buddha University School of Management, Greater Noida

Programme: MBA (Business Analytics and Data Science) [2024-26]
Course: Introduction to Business Analytics Code MBA 467

Semester	I	AcademicSession:	2024-25
Programme	MBA (Business Analytics and Data Science)	Batch:	2024-26
Department	Dept. of Business Management	Credits:	02
Instructor		Email:	
Sessions	Thirty	EachSession:	60 Minutes

INTRODUCTION:

This course is designed to provide business insights using analytical tools. Business analytics holds significant importance for students pursuing careers in business, finance, marketing, operations, and other related fields. This course will help students in providing enhanced employability, data-driven decision Making and practical application in industry. As businesses continue to rely on data for strategic decisions, the demand for professionals skilled in business analytics will only grow, making it a valuable area of study for students.

COURSE OUTLINE:

1. In this course, the students would be all concepts and terminologies related to business analytics and its application in related fields.

2. It also provides practical applications of different business analytics tools.

3. Upon completion of the course, the student will be able to apply their knowledge in data-driven decision-making processes.

AIMS AND OBJECTIVES:

The objective of this course is :

1. To introduce students to the capabilities and applications of business analytics.

2. To equip them with essential skills, enhances their employability, prepares them for future career challenges, and fosters a data-driven approach to decision-making.

3. To understand different business analytics tools and

4. To implement different business model in data-driven decision-making process.

PEDAGOGY:

The pedagogy will be a mix of lectures/exercises, practical sessions on business analytical software, assignments and industry/research-based projects. In addition to the reading materials, additional readings and exercise will be shared in the class from time to time. Students are also encouraged to prepare and analyze all the exercises.

LEARNING OUTCOME:

At the end of the course, it is expected that the students will be able:

1. Apply data visualization and validation techniques for effective data presentation and management.

2. Apply data analysis tools to solve management problems with data perspectives.

3. Apply predictive analysis tools to solve organizational problems using a systematic and analytical decision-making approach.

ASSESSMENT/EVALUATION:

Component	MaximumMarks	Duration(Hr)
Mid-term	25	1 ½
End-term	60	3
InternalAssessment (Quizzes/ClassTests/Assignments/ Class Participation/Presentation&Discussions)	15	

Text Books:

Suggested Readings: (Latest Editions)
1. Evans, J.R. Business Analytics. Pearson
2. RN Prasad and Seema Acharya. Fundamentals of Business Analytics, Wiley, India.
3. Purba Halady Rao. Business Analytics: An Application Focus, PHI.
4. David Roi Hardoon and Galit Shmueli. Getting Started with Business Analytics: Insightful Decision-Making, CRC Press, Taylor & Francis Group.

References Books (Latest Editions)

5. Gert H.N. Laursen and Jesper Thorlund. Business Analytics for Managers: Taking Business Intelligence Beyond Reporting, Wiley.
6. Mize, Edward. Data Analytics: The Ultimate Beginner's Guide to Data Analytics, Createspace Independent Publishing

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SESSION PLAN: (EACH SESSION OF 60 MINUTES)

Units	Topic(s)	Sessions
I	**Introduction to Business Analytics:** Concept and Scope, Importance of data in Business, Decision Models-Concept and Types, Analyst's role in the Business Analytics Model. Practical exposure to Discrete and Continuous Metrics, Nominal, Ordinal, Interval and Ratio Data, Exercises on understanding different types of decision models.	4
II	**Types of Analytics:** Descriptive: Central Tendency, Mean, Median, Mode, Standard Deviation, variance. **Predictive Modelling and Analysis:** Logic driven modelling, strategies for building predictive models, data-driven modelling, Supervised learning, regression-simple, multiple and logistic regression **Prescriptive**-Graph Analysis, Simulation, Optimization. **Building good regression models:** Performing regression analysis, checking the regression model, testing regression assumptions, choosing best regression models.	6
III	**Data Preparation:** Treatment of Missing Values, Identification and management of Outliers & erroneous data. Practical exposure to identification of outliers through Normal Distribution and Box Plots, Hands-on practice on Mahalanobis' Distance and Cook's D, spreadsheet modeling for business decisions (at least four exercises).	5
IV	**Exploring Data and Data Visualization:** Exploring data using Pivot Tables, Pivot Charts, Look-up functions, Data Validation and whatif analysis functions in spreadsheets for data visualization. Introduction to Power BI. Hands-on exercises on using Look-up functions, data validation and whatif analysis in spreadsheets, building Power BI dashboard.	6
V	**Data Warehousing:** Need for a data warehouse. ETL processes, Data Quality: Cause and Effect of Poor Data Quality, Alternative Ways of Storing Data, Master data management.	4
VI	**Data Reduction Techniques:** Principal Component Analysis, Clustering Analysis: k-Nearest Neighbors. Performing Principal component analysis and cluster analysis, reading results and interpreting results for problem solving and decision making	5
		30
	Total	

Gautam Buddha University School of Management
Greater Noida
Master in Business Administration (Executive Programme)
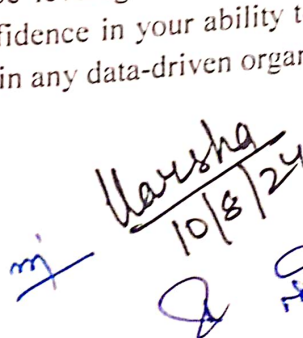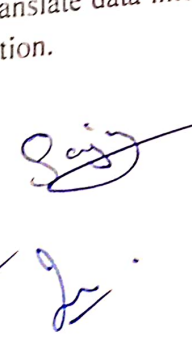### Course: MBA-469 (Data Analytics with Python Lab)

Semester	:I	Academic Session: 2024-25	
Programme	: MBA	Batch:2024-26	
CourseCode	:MBA469	Credits: 02	
CourseName:	Data Analytics using Python Lab	Phone: 9910340640	
Instructor	:Mr. Akshay Taneja	Email:	
Sessions	:30	EachSession:60 Minutes	

Introduction:

Welcome to the world of Data Analytics using Python! This course is designed to equip MBA students with the essential skills and knowledge needed to harness the power of data in today's business environment. In the digital age, data has become a critical asset, driving decisions and strategies across industries. Through this course, you will learn how to collect, process, analyze, and interpret data to make informed business decisions. Python, a versatile and widely-used programming language, will be our primary tool, offering a robust and efficient platform for data manipulation and analysis.

The course will cover various key concepts and techniques in data analytics, starting with an introduction to Python and its essential libraries, such as Pandas, NumPy, and Matplotlib. These libraries form the backbone of data manipulation and visualization in Python, enabling you to efficiently handle large datasets and create insightful visual representations. You will then delve into data preprocessing methods, crucial for cleaning and preparing raw data for meaningful analysis. As we progress, you will explore statistical analysistechniques, allowing you to uncover patterns and make predictions based on data. By the end of this course, you will have the practical skills to apply data analytics in real-world business scenarios, empowering you to make data-driven decisions and drive strategic initiatives within your organization.

In addition to the technical skills, this course will emphasize the practical application of data analytics in various business contexts. You will engage in hands-on projects and case studies that simulate real-world business problems, allowing you to apply your analytical skills to derive actionable insights. These projects will cover diverse areas such as marketing analytics, financial analysis, supply chain optimization, and customer segmentation, providing a holistic understanding of how data analytics can be leveraged across different functions. By working on these practical exercises, you will gain confidence in your ability to translate data into strategic business decisions, making you a valuable asset in any data-driven organization.

Lectures	Lab Work
1-4	Howto run python scripts, use variables, string and mathematical operators andfunctions.
5-10	Working with Boolean and other statements.If and elif statement in python, while loop in python, lists and for statement.
11-15	Working with Pandas library for data analysis, series and data frames, grouping, aggregating and applying different functionson data
16-17	Handling with different type of errors that one canencounter while working with Python, deal with the exceptions
18-20	Working with Pattern matching and Parse data
21-23	Implementation and Analysis of Regression in Python
24-27	Analyzing correlation, visualization using matplotlib in Python and implementation of Linear regression
28-30	Implementation of machine learning algorithm

Gautam Buddha University
School of Management
Greater Noida
MBA (Business Analytics and Data Science) Programme

Course: Data Analytics using R (Practical)

Code: MBA-452	
Department: School of Management	**Year/Sem:** 2024-2025/II
Sessions: 30	**Credits** : 02
	Each Session: 1 2 0 Minutes

Course Objectives
1. Understanding Data Analysis
2. To learn R as a Programming Language.
3. Able to do visualization with R
4. Implementing R for statistical analysis
5. Implementing R for prescriptive analysis

Course Outcomes
At the end of the course the students should be able to:
1. How to analyze the data
2. Able to use R for Decision making
3. Able ro do any visualization with R
4. Ability to apply statistical techniques using R
5. Act like a data analyst

Pedagogy:

This pedagogy will make use of analytical and computer programs using R and SPSS Modeler having applications mostly in business areas. The sessions will be conducted in Computer lab where students are expected to implement the programs in order to develop programming and problem-solving skills.

Evaluation Scheme: (Practical Paper)

Assignments / Class participation, Machine Test and Presentations	: 50%
End-Sem Exam (Lab Exam)	: 50%

Session Plan:

Unit	Session (hrs)	Topics to for Covered
Unit-I Introduction to data analysis:	1-5	Overview of Data Analytics, Need of Data Analytics, Nature of Data, Classification of Data, Structured, Semi- Structured, unstructured, Characteristics of Data, Application of Data Analytics.
Unit-II R Programming Basics:	6-11	Overview of R programming, Environment setup with R Studio, R Commands, Variables and Data Types, Control Structure, Array, Matrix, Vectors, Factors, Functions, R packages.
Unit-III Data Visualization Using R	12-18	Reading and getting data into R (External Data) using CSV files, Web Data, JSON files, Databases, Excel files. Working with R Charts and Graphs: Histograms, Box plots, Bar Charts, Line Graphs, Scatter plots, Pie Charts,
Unit-IV Statistics with R	19-24	Random forest, Decision Tree, Normal and Binomial distribution, Time Series Analysis Linear and Multiple Regression, Logistic Regression, Survival Analysis.
Unit-V Prescriptive Analytics	25-30	Creating Data for Analytics through designed experiment, Creating Data for Analytics through active learning, Creating Data for Analytics through reinforcement learning.

Text Books:
An Introduction to R,Notes on R, A Programming Environment for data analysis and Graphics, W.N. Venables, D.M.Smith and the R Development core Team Version 3.0.1 (2013-05-16) URL:https://cran.r-project.org/doc/manuals/r-release/R-intro.pdf

Reference Books:
1. Jared P Lander, R for everyone: advanced analytics and graphics, Pearson Education.
2. Dunlop, Dorothy D,and Aajit C.Tamhane. Statistics and data analysis: form elementary to intermediate, Prentice Hall.
3. G Casella and R.L Berger, Statistics Inference, Thomson Learning 2002
4. P Dalgaard introductory Statics with R, Springer.
5. Michael Berthold David j. Hand Intelligent Data analysis, Springer.
6. Montgomery, Douglas C. and George C. Runger, Applied statistics and probability for engineers.John Wiley & Sons.
7. Joeph F hair, William C Black etal, ''Multivariate Data Analysis'' Pearson Education.
8. Mark Gardener, ''Beginning R-the statistical programming Language'' John Wiley & Sons.
9. W.N.Venables, D.M Smith and the R Core Team, "An Introduction to R''.

Note: Latest edition of the books to be followed.

Gautam Buddha University
School of Management
Greater Noida
MBA (Business Analytics and Data Science) Programme
Course: Business Intelligence and Analytics (MBA-462)

Instructor:	Mr. Akshay Taneja		
Department:	School of Management	Session/Sem:	2024-2025/II
Sessions:	30	Credits:	02
		Each Session:	60 Minutes

Course Description:

Descriptive Analytics is a foundational course designed to provide students with a deep understanding of how to summarize, visualize, and interpret historical data to inform business decision-making. The course covers techniques to analyze past performance and trends through various data visualization tools, statistical measures, and data aggregation methods. Students will explore key concepts such as data cleaning, trend analysis, and basic statistical techniques, helping them build a clear picture of what has happened within a dataset.

The course focuses on practical applications of descriptive analytics in real-world scenarios, teaching students how to generate actionable insights from data. Topics will include the use of charts, graphs, dashboards, and reports, as well as how to identify patterns and anomalies in data. Participants will also gain hands-on experience with tools that are essential for analyzing historical data, such as IBM Cognos Analytics, a powerful platform for visualizing, reporting, and analyzing business data.

IBM Cognos Analytics is an integral part of this course, as it provides robust capabilities for descriptive analytics. It is a comprehensive business intelligence (BI) tool designed to help users create, manage, and share reports and dashboards. IBM Cognos allows for seamless data visualization, which enables users to transform raw data into insightful charts, graphs, and interactive dashboards. The platform's intuitive interface makes it easy to explore historical trends, summarize key metrics, and identify opportunities for optimization.

Course Objectives:

- Acquire a deep understanding of analytics and business intelligence principles.
- Develop proficiency in using IBM Cognos Analytics for data analysis and reporting tasks.
- Master SQL query writing and summarization techniques for efficient data retrieval and analysis.
- Gain insights into the significance of data-driven decision-making across diverse industries.
- Learn to create advanced reports, dashboards, and visualizations to convey insights effectively.
- Explore the application of predictive analytics in transforming organizational strategies and processes.
- Understand the role of analytics in enhancing business performance, managing assets, and combating fraud.

Learning Outcomes:

After completing the course, the students should be able to:

1. Understand fundamental analytics principles.

2. Utilize IBM Cognos Analytics proficiently for data analysis and reporting.

3. Master SQL query writing for effective data manipulation.

4. Apply data-driven decision-making across industries.

5. Create advanced reports, dashboards, and visualizations.

6. Implement predictive analytics techniques for forecasting and optimization.

7. Apply business intelligence strategies to enhance organizational performance.

Pedagogy: The pedagogy will be a mix of lectures, hands on learning, real life case discussions, assignments and industry/research-based projects. In addition to the reading materials, additional readings and cases will be distributed in the class from time to time. Students are also expected to prepare and analyze all the cases as class participation is very important.

Evaluation Scheme:

➤ Quizzes/ Class Tests/Presentations		15%
➤ Mid-Semester Exam		25%
➤ Term- Semester Exam		60%

Suggested Readings:

Text Book:

1. Liautaud, Bernard, and Mark Hammond. e-Business intelligence: turning information into knowledge into profit. McGraw-Hill, Inc., 2000.

Reference Books:

1. P Anandarajan, Murugan, Asokan Anandarajan, and Cadambi A. Srinivasan, eds. Business intelligence techniques: a perspective from accounting and finance. Springer Science & Business Media, 2012.
2. Michalewicz, Zbigniew, et al. Adaptive business intelligence. Springer Berlin Heidelberg,2006.

Session Plan: *(Each session consists of 60 minutes)*

Session No.	Topics to be covered
1-6	**Introduction to Analytics and Business Analytics** Introduction to Analytics and Business Analytics Foundations of Analytics, Historical evolution of analytics, Contemporary significance of analytics, Future trends in analytics, Business Analytics Fundamentals, Definition and importance of business analytics, Types of analytics and their applications, Role of predictive analytics in decision-making, Analytics Trends and Predictive Enterprises, Analysis of past, present, and future analytics trends, Transition towards predictive enterprise models, Case studies showcasing successful analytics implementations
7-14	**Business Intelligence and Analytics** Explaining what is analytics, defining various types of analytics, Demonstrating how to apply analytics, Describing business intelligence, Demonstrating how to apply business intelligence, Learning how to access content, use reports, and create dashboards, Learning how personalize the IBM Cognos Analytics portal, Group, format, and sort list reports, Describing the various options for aggregating data ,Creating a multi-fact query ,Creating a report with repeated data, Creating filters to narrow the focus of reports ,Examining detail filters and summary filters ,Determining when to apply filters on aggregate data, Formatting and sort crosstab reports , Creating complex crosstab reports using drag and drop functionality, creating crosstab reports using unrelated data items, creating charts containing peer and nested columns, presenting data using different chart type options, adding context to charts, Creating and reuse custom chart palettes
15-21	**IBM Cognos Analytics** Author Reports Advanced & Active Reports: create reports based on query relationships, create advanced dynamic reports, Design effective prompts, create additional advanced reports, Examine the report specification, distribute reports through bursting, Enhance user interaction with HTML.
22-26	**Advanced Query Modeling and Report Layout Design with SQL Customization** Building query models and connect them to the report layout Editing an SQL statement to author custom queries, Adding filters and prompts to a report using the query model, Creating reports by merging query results, Creating reports by joining queries, Combining data containers based on relationships from different queries, Filtering reports on session parameter values, Navigating a briefing book using a table of contents, Creating dynamic headers and titles that reflect report data, Navigating to specific locations in reports, Creating a customer invoice report, Controlling report displays using prompts, Specifying conditional formatting values using prompts, Specifying conditional rendering of objects based on prompt selection, Creating sorted and filtered reports based on prompt selection, Creating a report that displays summarized data before detailed data, Highlighting alternate rows in a list report ,Creating a report using an external data file
27-30	**IBM Cognos Active Reports** Introduction to IBM Cognos Active Reports, Use Active Report connections, Active Report charts, visualizations and decks. Project: Design and Develop an Interactive Active Report Dashboard for Sales Analysis, Implementing Dynamic Data Visualization in Active Reports for Financial Performance Analysis

Gautam Buddha University
School of Management
Greater Noida

MBA (Business Analytics and Data Science) Programme

Course: Database Management System	**Code: MBA-470**
Session/Sem: 2024-25/II	Credits: 02
Department: Business Management	Sessions: 30
Batch: 2024-25	**Each Session:** 60 Minutes

COURSE OVERVIEW:

This course introduces the core principles and techniques required in the design and implementation of database systems. This introductory application-oriented course covers the relational database systems RDBMS - the predominant system for business, scientific and engineering applications at present. It includes Entity-Relational model, Normalization, Relational model, Relational algebra, and data access queries as well as an introduction to SQL. It also covers essential DBMS concepts such as: Transaction Processing, Concurrency Control and Recovery. It also provides students with theoretical knowledge and practical skills in the use of databases and database management systems in information technology applications.

COURSE OBJECTIVES:

1. To Teach the basic database concepts, applications, data models, schemas and instances.
2. To familiarize Entity Relationship model for a database.
3. To Demonstrate the use of constraints and relational algebra operations.
4. To Describe the basics of SQL and construct queries using SQL.
5. To Emphasize the importance of normalization in databases.
6. To Demonstrate the basic concepts of transaction processing and concurrency control.
7. To familiarize the concepts of database storage structures and identify the access techniques.

COURSE OUTCOMES:

At the end of the course the students are able to:

1. Use the basic concepts of Database Systems in Database design
2. Apply SQL queries to interact with Database
3. Design a Database using ER Modelling
4. Apply normalization on database design to eliminate anomalies
5. Analyze database transactions and can control them by applying ACID properties.

Pedagogy: The pedagogy will be a mix of lectures, hands on learning, real life case discussions, assignments and industry/research-based projects. In addition to the reading materials, additional readings and cases will be distributed in the class from time to time. Students are also expected to prepare and analyze all the cases as class participation is very important.

Evaluation Scheme:

➤ Quizzes/ Class Tests/Presentations etc.	15%
➤ Mid-Semester Exam	25%
➤ Term- Semester Exam	60%

Session Plan:

UNIT – I   (Sessions: 1-6)

INTRODUCTION: Introduction and applications of DBMS, Purpose of data base, Data, Independence, Database System architecture- Levels, Mappings, Database, users and DBA **DATABASE DESIGN:** Database Design Process, ER Diagrams - Entities, Attributes, Relationships, Constraints,keys, extended ERfeatures,Generalization,Specialization, Aggregation, Conceptual design with the E-Rmodel.

UNIT – II   (Sessions: 7-11)

THE RELATIONAL MODEL: Introduction to the relational model, Integrity constraints over relations, Enforcing integrity constraints, Querying relational data, Logical database design: E-R to relational, Introduction to views, Destroying/altering tables and views.
RELATIONAL ALGEBRA AND CALCULUS: Preliminaries, relational algebra operators, relational calculus - Tuple and domain relational calculus, expressive power of algebra and calculus.

UNIT – III   (Sessions: 12-18)

SQL: Basics of SQL, DDL, DML, DCL, structure – creation, alteration, defining constraints – Primary key, foreign key, unique, not null, check, IN operator, Functions - aggregate functions, Use of group by, having, Built-in functions – numeric, date, string functions, set operations, sub-queries, correlated sub-queries, order by, join and its types, Exist, Any, All , view and its types, transaction control commands – Commit, Rollback, Save point, cursors, stored procedures, Triggers.

UNIT – IV   (Sessions: 19-22)

SCHEMA REFINEMENT AND NORMAL FORMS: Introduction to schema refinement, functional dependencies, reasoning about FDs. Normal forms: 1NF, 2NF, 3NF, BCNF, properties of decompositions, normalization, schema refinement in database design, case studies.

UNIT – V   (Sessions: 23-30)

TRANSACTIONS MANAGEMENT: Transaction concept, transaction state, implementation of atomicity and durability, concurrent executions, Serializability, recoverability, implementation of isolation, transaction definition in SQL, testing for Serializability.

CONCURRENCY CONTROL AND RECOVERY SYSTEM: Concurrency control, lock based protocols, time-stamp based protocols, validation based protocols, multiple granularity. Recovery system - failure classification, storage structure, recovery and atomicity, log- based recovery, shadow paging, buffer management, failure with loss of non-volatile storage, advanced recovery techniques, remote backup systems.

OVERVIEW OF STORAGE AND INDEXING: Tree structured indexing - intuition for tree indexes, indexed sequential access method (ISAM), B+ Trees - a dynamic tree structure.

TEXT BOOKS:

1. Raghurama Krishnan, Johannes Gehrke , Database Management Systems, Tata McGraw Hill, New Delhi, India.
2. Elmasri Navate, Fundamentals of Database Systems, Pearson Education, India.

REFERENCE BOOKS:

1. Abraham Silberschatz, Henry F. Korth, S. Sudarshan (2005), Database System Concepts, McGraw-Hill, New Delhi, India.
2. Peter Rob, Carlos Coronel, Database Systems Design, Implementation and Management.

Note: Latest edition of books to be followed.

Gautam Buddha University
School of Management
Greater Noida
MBA (Business Analytics and Data Science) Programme

Course: Business Intelligence and Analytics Lab

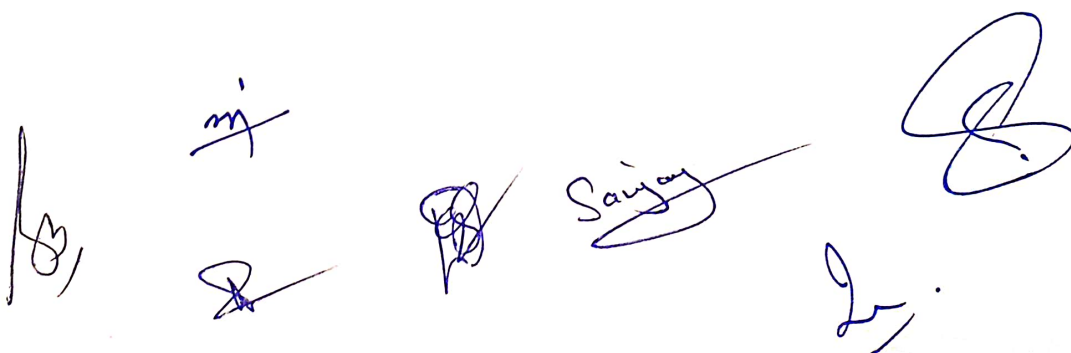|		
Code:	MBA-472	**Year/Sem:** 2024-2025/II
Department:	School of Management	**Credits:** 02
Sessions:	30	**Each Session:** 1 2 0 Minutes

Course Description:

The Descriptive Analytics Lab is a hands-on course designed to provide students with practical experience in applying descriptive analytics techniques to real-world datasets. This lab course emphasizes the use of statistical tools, data visualization techniques, and reporting methods to explore and summarize historical data. Students will work with various datasets to uncover patterns, trends, and insights that inform business decision-making.

In this lab, students will engage in activities such as data cleaning, preparation, and transformation, and apply statistical and visualization methods to analyze past performance. They will learn how to construct meaningful reports and dashboards, summarize data, and create visualizations such as bar charts, pie charts, histograms, line graphs, and dashboards. By using popular analytics tools like IBM Cognos Analytics, students will develop a strong understanding of the practical application of descriptive analytics.

Course Outcome:

- Ability to navigate and perform basic operations within IBM Cognos Analytics, including account creation and navigation.
- Competence in creating various reports, such as list-type reports from external datasets, with emphasis on formatting to enhance readability and visual appeal.
- Application of advanced features like crosstab reports, dynamic/static headers and footers, custom column addition, and drill-through reports to create comprehensive and insightful reports.
- Proficient generation of visualizations and reports using a variety of chart types to analyze data effectively and derive meaningful insights.
- Proficiency in developing active reports with controls, creating stories and dashboards, and modifying report behavior to enhance interactivity and user experience.

Pedagogy:

This pedagogy will make use of analytical and computer programs using Python and other tools having applications mostly in business areas. The sessions will be conducted in Computer lab where students are expected to implement the programs in order to develop programming and problem-solving skills.

Evaluation Scheme: (Practical Paper)

Assignments / Class participation,
Machine Test and Presentations   : 50%
End-Sem Exam (Lab Exam)   : 50%

List of Experiments:

1. Account creation
2. Basic operation of IBM Cognos
3. Create list type report from external data sets
4. Create list for showing data, create list type report from external data sets
5. Apply formatting in list and other reports.
6. Create crosstab report by using internal datasets and all types of filters
7. Apply filters on various types of reports.
8. Create visualization, reports using various types of charts
9. Apply various types of prompts on report, create dynamic and static header, footer in report
10. Create page header and footer add custom column in report.
11. Create drill through report
12. Build query models and then connect them to the report layout
13. Filter data using the query model
14. Create a report comparing quantity sold in different order years
15. Create a story from basic to advance
16. Create a dashboard from basic to advance
17. Create a simple active report using static and data-driven controls and change filtering and selection behavior in a report.

Gautam Buddha University
School of Management
Greater Noida
Master in Business Administration
(Business Analytics and Data Science)

Course: Data Base Management System Lab (Practical)

Code:	MBA-474	**Year/Sem:**	2024-2025/II
Department:	School of Management	**Credit:**	02
Sessions:	30	**Each Session:**	120 Minutes

Laboratory Overview

This course introduces the core principles sand techniques required in the design and implementation of database systems.

This introductory application-oriented course covers the relational database systems RDBMS -the predominant system for business scientific and engineering applications at present. It includes Entity-Relational model, Normalization, Relational model, Relational algebra, and data access queries as well as an introduction to SQL. It also covers essential DBMS concepts such as: Transaction Processing, Concurrency Control and Recovery. It also provides students with theoretical knowledge and practical skills in the use of databases and database management systems in information technology applications.

Course Objectives:

1. To explain basic data base concepts, applications, data models, schema sand instances.
2. To demonstrate the use of constraints and relation a algebra operations.
3. **Describe** the basics of SQL and construct queries using SQL.
4. To emphases size the importance of normalization in data bases.
5. To facilitate students in Data base design
6. To familiarize issues of on currency control and transaction management.

Course Outcome:

At the end of the course the student shareable to:

1. Apply the basic concepts of Data base Systems and Applications.
2. UsethebasicsofSQLandconstructqueriesusingSQLindatabasecreationandinteraction.
3. Design a commercial relational database system (Oracle, MySQL) by writing SQL using the system.
4. Analyze and Select storage and recovery techniques of data base system.

Pedagogy:

This pedagogy will make use of analytical and computer programs using Python and SPSS Modeler having applications mostly in business areas. The sessions will be conducted in Computer lab where students are expected to implement the programs in order to develop programming and problem-solving skills.

Evaluation Scheme: (Practical Paper)

Assignments / Class participation,
Machine Test and Presentations   : 50%
End-Sem Exam (Lab Exam)   : 50%

List of Experiments:

Experiment-1
Student should decide encase study and for mutate the problem statement.

Experiment-2
Conceptual Designing using ER Diagrams (identifying entities, attributes, keys and relationships between entities, cardinalities, generalization, specialization etc.)
Note: A Student is required to submit a document by drawing ER Diagram to the Lab teacher.

Experiment-3
Converting ER Model to Relational Model (Represent entities and relationships in Tabular form, represent attributes as columns, identifying keys)
Note: Students are required to submit a document showing the database tables created from ER Model.

Experiment-4
Normalization-
To remove the redundancies and anomalies in the above relational tables, Normalize up to Third Normal Form

Experiment-5
Creation of Tables using SQL- Overview of using SQL tool, Data types in SQL, Creating Tables (along with Primary and Foreign keys), Altering Tables and Dropping Tables

Experiment-6
Practicing DML commands-Insert, Select, Update, Delete

Experiment-7
Practicing Queries using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSECT, CONSTRAINTS, etc.

Experiment-8
Practicing Sub queries (Nested, Correlated) and Joins (Inner, Outer and Equip).

Experiment-9
Practice Queries using COUNT, SUM, AVG, MAX, MIN, GROUP BY, HAVING, VIEWS Creation and Dropping.

Experiment-10
Practicing on Triggers - creation of trigger, Insertion using trigger, Deletion using trigger, Updating using trigger

Experiment-11
Procedures- Creation of Stored Procedures, Execution of Procedure, and Modification of Procedure.

Experiment-12
Cursors- Declaring Cursor, Opening Cursor, Fetching the data, closing the cursor.

Experiment-13
Design and implement a database schema for company data base, banking data base, library information system, payroll processing system, student information system.