ALAGAPPA UNIVERSITY

(Accredited with A+ Grade by NAAC (CGPA: 3.64) in the Third Cycle,
Graded as Category-I University and granted autonomy by MHRD-UGC)

DIRECTORATE OF COLLABORATIVE PROGRAMMES

MBA in Business Analytics

Regulations and Syllabus

[For those who join the Course in July 2023 and after]

CHOICE BASED CREDIT SYSTEM

GENERAL INSTRUCTIONS AND REGULATIONS

MBA in Business Analytics conducted by Alagappa University, Karaikudi, Tamil Naduthrough its Collaborative Institutions

Applicable to all the candidates admitted from the academic year **2023-24** onwards.

1. **Eligibility:**
   Candidate for admission to **MBA in Business Analytics** shall be required to have passed in any Bachelor Degree with 50% marks from recognized University/Institution.

2. **For the Degree:**
   The candidates shall have subsequently undergone the prescribed programme of study in an institute for not less than two academic years comprising 4 semesters, passed the examinations prescribed and fulfill such conditions as have been prescribed thereof.

3. **Admission:**
   Admission is based on the marks in the qualifying examination prescribed thereof.

4. **Duration of the course:**
   The course shall extend over a period of two years under semester pattern accounting to four semesters.

7. **Attendance:**
   Students must have earned 75% of attendance in each course for appearing for the examination.

   Students who have earned 74.99% to 70% of attendance have to apply for condonation in the prescribed form with the prescribed fee.

   Students who have earned 69.99% to 60% of attendance have to apply for condonation on Medical grounds in the prescribed form with the prescribed fee along with the medical certificate / relevant documents.

   Students who have below 60% of attendance are not eligible to appear for the examination. They shall re-do the semester(s) after completion of the programme.

8. **Examination:**
   Candidate must complete course duration to appear for the university examination. Examination will be conducted with concurrence of Controller of Examinations as per the Alagappa University regulations. **University may sendthe representatives as the observer during examinations.** UniversityExamination will be held at the end of the each semester for duration of 3 hours for each subject. Certificate will be issued as per the AU regulations. **Hall ticketwill be issued to the students at the end of every semester after submitting "No Dues" certificate to the exam cell, under the aegis of Controller of Examinations of the AU.**

9. **Miscellaneous**
   a. Every student should possess the prescribed text book for all the subjects, through-out the semester for their theory/lab classes.

   b. Every student would be issued an Identity card by the institute/university to identify his/her admission to the course.

c. Every student shall access the library and internet (wi-fi) facilities provided for the self-development and career-development.

d. Every student who successfully completes the course within the stipulated time period would be awarded the degree by the University.

10. Fee structure

Course fee shall be as prescribed by the University and 50% of the course fee should be disbursed to University. Special fees and other fees shall be as prescribed by the Institution and the fees structure must intimated to the University. Course fees should be only by Demand draft / NEFT and AU has right to revise the fees accordingly.

Semester Pattern

Course Fee payment deadline
Odd semester Fee must be paid before 30th October of the academic year
Even semester Fee must be paid before 30th April of the academic year

11. Other Regulations:

Besides the above, the common regulation of the University shall also be applicable to this programme.

COURSE OUTCOME: MBA - Business Analytics

The course outcomes of an MBA in Business Analytics program aim to achieve:

1. **Analytical Skills Development:**
   - Gain proficiency in statistical analysis, data mining, and predictive modeling.
   - Develop the ability to interpret and analyze complex business data.
2. **Decision-Making Competence:**
   - Acquire skills to make data-driven decisions and recommendations for business strategies.
   - Understand the application of analytics in strategic planning and problem-solving.
3. **Business Acumen:**
   - Enhance understanding of business processes and functions.
   - Integrate analytical insights into overall business strategy and operations.
4. **Technological Proficiency:**
   - Familiarity with tools and technologies used in data analytics, such as SQL, R, Python, and data visualization tools.
   - Ability to leverage big data technologies and platforms.
5. **Communication Skills:**
   - Develop the ability to communicate complex analytical findings to non-technical stakeholders.
   - Enhance written and verbal communication skills for effective reporting and presentations.
6. **Industry-Relevant Knowledge:**
   - Gain domain-specific knowledge in various industries such as finance, marketing, healthcare, or supply chain.
   - Understand the challenges and opportunities in different sectors for effective application of analytics.
7. **Ethical and Legal Considerations:**
   - Understand the ethical and legal aspects of handling and using data.
   - Comply with data protection and privacy regulations.

8. **Team Collaboration:**
    - Develop teamwork and collaboration skills, especially in multidisciplinary teams.
    - Work effectively with professionals from diverse backgrounds.
9. **Project Management:**
    - Gain skills in managing analytics projects from initiation to completion.
    - Understand the project lifecycle and apply project management methodologies.
10. **Continuous Learning:**
    - Foster a mindset of continuous learning to keep up with evolving analytics tools and techniques.
    - Stay updated on industry trends and best practices.
11. **Entrepreneurial Thinking:**
    - Encourage an entrepreneurial mindset for identifying innovative opportunities using analytics.
    - Explore possibilities for creating value within and beyond traditional business models.

M.B.A - Business Analytics

Course Code	Subject	T/P	Credits	Hours/ Week	Int. Max	Ext. Max	Total
SEMESTER I							
30111	Management Concepts and Practices	T	4	4	25	75	100
30112	Accounting for Business Analysts	T	4	4	25	75	100
30113	Spreadsheet Modeling	T	4	4	25	75	100
30114	Statistics for Business	T	4	4	25	75	100
30115	Economic Analysis for Business Decisions	T	4	4	25	75	100
30116	Research Methodology	T	4	4	25	75	100
30117	Written Analysis and Communication	P	3	3	25	75	100
	Library/GD	-		3			
	Total		**27**	**30**	**175**	**525**	**700**
SEMESTER II							
30121	Marketing Management	T	4	4	25	75	100
30122	Human Resource Management	T	4	4	25	75	100
30123	Financial Management	T	4	4	25	75	100
30124	Project Management and Budgeting	T	4	4	25	75	100
30125	Fundamentals of Digital Marketing	T	4	4	25	75	100
30126	Fundamentals of Business Analytics	T	4	4	25	75	100
30127	Consumer Behavior	T	3	4	25	75	100
	Library/GD	-		2			
	Total		**27**	**30**	**175**	**525**	**700**
SEMESTER III							
30131	Data warehousing & DBMS	T	4	4	25	75	100
30132	Python For Data Analytics	T	4	4	25	75	100
30133	Machine learning	T	4	4	25	75	100
30134	Business Law and Ethics	T	4	4	25	75	100
30135	Data Mining for Business Analytics-(LAB)	P	4	6	25	75	100
30136	Internship and Report (Internal)	I	4	8	25	75	100
	Total		**24**	**30**	**150**	**450**	**600**
SEMESTER IV							
30141	Data Visualization	T	4	4	25	75	100
30142	Predictive Modeling using SAS	T	4	4	25	75	100
30143	Deep Learning	T	4	4	25	75	100
30144	Digital Strategy Planning & Execution	T	4	4	25	75	100
30145	Big Data Analytics - (LAB)	P	4	6	25	75	100
30146	Project Work and Viva-Voce	PR	4	8	25	75	100
	Total		**24**	**30**	**150**	**450**	**600**
	Grand Total		**102**	**120**	**650**	**1950**	**2600**

I Semester

Semester I					
		Core course - I	**T/P**	**Credits**	**H/W**
Course Code:	30111	**MANAGEMENT CONCEPTS AND PRACTICES**	**T**	**4**	**4**
Objectives	To enable the students to understand the principles of management thought and applying the same in practice.				
Unit - I	**Introduction to Management** ● Introduction and Nature of Management ● Definition & Meaning-By P. F. Drucker, Koontz O‟ Donnel, S. George ● Management as an Art, Science and Profession ● Distinction between Administration and Management ● Importance & Functions of Management.				
Unit - II	**Evolution of Management** ● Evolution of Management- Thought ● Pre Scientific Management era ● Scientific Management & Contribution of F. W. Taylor ● Process Management & contribution of Henri Fayol ● HR movement - Hawthorne experiments ● Contributions of Behavioral scientists- Abraham Maslow, Peter Drucker, Douglas Mc. Gregor				
Unit - III	**Planning and Decision Making** ● Nature & Definition of Planning- Koontz o‟Donnel, Hart, Alfred &Beaty ● Importance and limitations ● Planning process ● Types of Plans- on the basis of use, functions, time (meaning only) ● Meaning of Decision making ● Steps in decision making ● Types of decisions- Programmed-Non-programmed; Strategic-tactical, Individual-Group, Policy-Operation, Organizational-Personal				
Unit - IV	**Organizing & Departmentation** ● Meaning & Definition- Koontz O‟Donnell & McFarland ● Organizing - Nature, Purpose & Principles ● Types of Organization (Formal & Informal) ● Types of Authority relationships- Line, Functional, Line& staff, Committees, ● Meaning and types of Departmentation ● Centralization and De-centralization (Meaning Only)				
Unit - V	**Elements of Directing, Co-ordination and Control** ● Meaning & Importance of Directing ● Leadership: Meaning & Styles ● Motivation: importance & Theories (Maslow, Herzberg. Mcgregor) ● Communication- Meaning, Objectives & Types of communication ● Meaning, Principles and techniques of Co- ordination Meaning, Need & steps in Controlling				

Reference Books:

Harold Koontz, Cyril O'Donnell, *Management: A Book of Readings*, Third Edition, McGraw-Hill, 1972.

Dr P. N. Reddy, Prof H R Appannaiah, P C Tripathi, *Essentials of Management*, Eleventh Edition, Himalaya, 2004.

L. M. Prasad, *Principles and Practice of Management*. 7th Edition, Sultan Chand & Sons, 2007.

R. Srinivasan and S. A. Chunawalla, *Management: Principles and Practice*, Second Edition, Himalaya, 1983.

P. C. Tripathi and P. N. Reddy, *Principles of Management*, Fourth Edition, Tata McGraw Hill, 2008.
Related online content (MOOC, Swayam, NPTEL Website etc.) https://www.edx.org/ https://www.mooc.org/ https://onlinecourses.nptel.ac.in/

Course outcomes	
CO-1	To apply management concepts and theories to analyze and solve problems in various organizational contexts.
CO-2	To develop effective communication skills necessary for managerial roles, including written, verbal, and non-verbal communication.
CO-3	To recognize different leadership styles and theories and understand their implications for motivating and leading teams.
CO-4	To acquire decision-making skills and techniques necessary for managerial roles, including analyzing information, evaluating alternatives, and making sound decisions.
CO-5	To demonstrate self-management skills, including time management, organization, and personal accountability, necessary for success in managerial roles.

Semester I					
		Core course - I	**T/P**	**Credits**	**H/W**
Course Code:	30112	**ACCOUNTING FOR BUSINESS ANALYSTS**	**T**	**4**	**4**

Objectives	Accountants play a key role in the formulation and implementation of business decisions, both strategic and tactical, through their uniquely analytical approach to the assessment of the financial implications of business plans. Accounting for Management focuses on the crucial role which financial information plays in decisions made by management teams, and in the monitoring and planning of a business organisation's objectives. The course seeks to cover accounting studies to a more refined level, similar to professional qualification standard along with retaining theoretical analysis.
Unit - I	**Conceptual Framework** Double-entry book-keeping system, journal, ledger, posting, debits, credits, trial balance, adjusting entries, final accounts for non-corporates (manufacturing trading, PandL, B/S), company final accounts, computerised accounting.
Unit - II	**Financial Statement Analysis and Interpretation** Financial statement analysis and interpretation, ratio analysis, fund flow analysis. Cash flow analysis.
Unit - III	**Budgets and Budgetary Control** Concepts of budget and its advantages, functional, master and cash budget, flexible and zero based budgeting, responsibility accounting, performance budgeting.
Unit - IV	**Marginal Costing and Profit Planning** Absorption costing and marginal costing, direct costing, contribution, profit planning, Cost-volume-profit Analysis (CVP analysis), Break-even Analysis, Break-even charts, advantages and limitations of marginal costing, application of marginal costing technique, decisions involving alternative choices, determination of sales mix, make or buy decision, exploring new markets, discontinuance of a product line. Standard costing as a tool for control, variance analysis.
Unit - V	**Depreciation Accounting and Inventory Valuation** Concept of depreciation, methods of depreciation, objectives of inventory valuation, methods of inventory valuation.

Reference books:

Khan, M. Y. and P. K. Jain (2013). *Management Accounting - Text, Problems and Cases.* New Delhi: McGraw Hill Education.

Maheshwari, S. K., S. N. Maheshwari and Sharad K. Maheshwari. (2012). *Accounting for Management*. New Delhi: Vikas Publishing House.

Gupta, Ambarish. (2012). *Financial Accounting for Management: An Analytical Perspective*. New Delhi: Pearson Education.

Banerjee, Ashok. (2009). *Financial Accounting: A Managerial Emphasis*. New Delhi: Excel Books.

Horngren, Charles T., George Foster and Srikant Datar. (2007). *Cost Accounting: A Managerial Emphasis*. New Delhi: Prentice Hall

Alexander, David and Anne Britton. (1996). *Financial Reporting*. Boston: International Thomson Business Press.

Related online content (MOOC, Swayam, NPTEL Website etc.)

edx.org/search?q=fund+flow&subject=Business+%26+Management

https://onlinecourses.swayam2.ac.in/imb24_mg08/preview?

Course outcomes

CO-1	To apply management concepts and theories to analyze and solve problems in various organizational contexts.

CO-2	Develop solid understanding of basic accounting principles, concepts, and terminology, enabling them to interpret financial information accurately.
CO-3	Be proficient in conducting cost analysis and understanding the costs associated with various business activities, enabling them to make informed decisions regarding resource allocation and cost management.
CO-4	To interpret financial data and ratios to evaluate key financial metrics such as profitability, liquidity, solvency, and efficiency.
CO-5	Will gain practical experience in using accounting tools and software for financial analysis and reporting, enhancing their technical skills in financial

Semester I					
		Core course - III	**T/P**	**Credits**	**H/W**
Course Code:	30113	**SPREAD SHEET MODELLING**	**T**	**4**	**4**

Objectives	This course will cover all aspects of creating spreadsheet, performing calculations, formatting, some very widely used formulas like SUMIF, LOOKUPS, and also getting Excel to make decisions using the „IF‟ function, “WHAT IF ANALYSIS” and conditional formatting. It will enable the students to create, build and customise graphs, develop advanced solutions on the worksheet and to assemble the proper Excel tools. Students will gain an insight into data tables and using excel advanced look up features to automate worksheets and analysis tools to forecast figures based on a range of scenarios and use consolidation to bring together information.The case study based training design is unique as it blends the features of the tool and usage scenarios.
Unit - I	**Starting up with MS Excel** Basics Of MS Excel: The Ribbon, The levels of Command organization Excel Options, Customizing the Quick Access Tool Bar, The Excel Screen, Worksheets and Workbooks, Saving a workbook. Manipulating Rows And Columns: Inserting rows and columns within a worksheet, Modifying column widths using 'drag and drop', Automatically resizing the column width to fit contents.
Unit - II	**Manipulating Worksheets** Switching between worksheets, Copying or moving worksheets between workbooks, Grouping Worksheets, Protecting Worksheets and Workbooks. Working With Data-Entering Data: Entering numbers and text into cells, Default text and number alignment, AutoFill. Selecting data, Copying, moving and deleting data, Formatting data: Built in and custom formats**,**Currency symbol, Date Percentages, Alignment of content in cell range, Cell orientation.
Unit - III	**Implementing Mathematical, Trigonometry, Statistical Functions Using Referencing** Arithmetic Functions, Absolute/Relative Cell Referencing, Mixed **References**, Formula Auditing Tools, Formula Error Checking, Tracing Precedents/Dependents, Goto, Naming individual or range cells, Deleting and amending named ranges, Using named cells/ranges in formulae, Using SUMPRODUCT, SUMIF and SUMIFS, COUNTIF and COUNTIFS, AVERAGEIF and AVERAGEIFS Functions, Using FLOOR/ CEILING/ MROUND/ MOD/ QUOTIENT Functions.
Unit - IV	**Graphs and Validation Techniques:** Different kinds of Graphs, Column, Pie, Bar, Area, Scatter, Drop Down Lists, Error Alerts, Conditional Formatting. **Date, Text, Logical Functions:** Date Functions: DAYS360, TODAY, NOW, NETWORKDAYS, WORKDAY, Logical Functions: IF, AND, OR and NESTED IF, TEXT Functions: MID, SEARCH, LEFT, RIGHT FUNCTIONS, TRIM, CLEAN, UPPER, LOWER, DOLLAR FUNCTIONS, SUBSITUTE. **Lookup Functions**: Lookup Functions: BASIC VLOOKUP and HLOOKUP, IFERROR VLOOKUP, MULTIPLE COLUMN VLOOKUP, INDEX and MATCH Functions, OFFSET/ INDIRECT functions.

Unit - V	**Data Analysis using Pivot Table, Filters and What If Analysis:** Data Analysis using Pivot Tables: Using the Pivot Table Wizard, Changing the pivot table layout, Formatting, Grouping items, Inserting calculated fields, Pivot Table Options, Display and hide data in fields, Lay out reports directly on worksheet, Pivot Chart, Using Slicer in pivot Tables, Applying and Using AutoFilter, Creating a Custom AutoFilter, Sorting On More Than One Column, Using Advanced Filter, Using Formulas In Criteria. **Advance Tools:** What If Analysis. Scenario Manager, Goal Seek, Solver. **Laboratory Session:** 2 hours per week to work on computer assignments and other hands-on activities required to develop skill sets and tools kits necessary for employability.

Reference Books

Walkenbach, John. (2010). *Excel 2010 Bible*. New Delhi: Wiley India Pvt Ltd.

MacDonald, Mathew. (2010). *Excel 2010: The Missing Manual.* Sebastopol: O'reilly.

Ragsdale, Cliff. T. (2008). *Spreadsheet Modelling and Decision Analysis.* New York: Thomson south – western publications.

Monahan, George E. (2000).M*anagement Decision Making : Spread Sheet, Modelling, Analysis.* London*:* Cambridge University.

Related online content (MOOC, Swayam, NPTEL Website etc.)

https://onlinecourses.swayam2.ac.in/imb24_mg56/preview

https://www.edx.org/search?q=excel&tab=course

Course outcomes

CO-1	To build, manage, and analyze complex models within a spreadsheet environment, including financial models, forecasting models, and decision-making models.
CO-2	Ability to analyze and interpret data using advanced tools and techniques available in spreadsheet software, such as pivot tables, data tables, and what-if analysis.
CO-3	Will learn how to effectively document their spreadsheet models and findings, as well as create clear and concise reports for stakeholders.
CO-4	Understand the importance of continuous learning and adaptability in the rapidly evolving field of spreadsheet modeling, including staying updated on new features and best practice
CO-5	To optimize spreadsheet performance, improve efficiency, and minimize errors through the use of shortcuts, macros, and advanced features.
CO-1	To build, manage, and analyze complex models within a spreadsheet environment, including financial models, forecasting models, and decision-making models.

Semester I					
		Core course - IV	**T/P**	**Credits**	**H/W**
Course Code:	30114	**STATISTICS FOR BUSINESS**	**T**	**4**	**4**
Objectives	This course teaches the core quantitative principles. In particular, the course teaches how to perform quantitative analysis. The course also teaches the critical thinking principle. The course teaches how to use data, combined with logic, to reach valid solutions to challenging problems. Also, the course teaches students how to think critically about ambiguous situations. Finally, the idea that underlies statistics is subtle and powerful. Hence, by teaching this idea, the course advances students‟ intellectual depth.				
Unit - I	**Descriptive Statistics** Introduction, summarizing Data, EDA, Cross tabulation, measures of location, measures of variability, measures of distribution shape, measures of association, applications with Minitab and Excel.				
Unit - II	**Probability Distributions:** Introduction, Bayes‟ Theorem, Discrete Probability Distributions, Continuous Probability Distributions, Binomial Distribution, Poisson Distribution, Approximation of Binominal Distribution to Normal Distribution. **Sampling Distributions**: Sampling and Sampling Distributions, Central Limit Theorem, Concept of Standard Error, Confidence Intervals, Applications with Minitab and Excel.				
Unit - III	**Hypothesis Testing** Hypothesis Testing and Decision Making, Statistical Inferences about means and proportions and variances, Test of Goodness of Fit and Independence, Applications with Minitab and Excel.				
Unit - IV	**Financial Mathematics** Time Value of Money, Simple and Compound Interest, Discounting and Compounding, Present Value and Future Value of single sum and annuity, Loan payments and Amortisation, Applications with Excel.				
Unit - V	**Correlation and Regression** Analyses of Relationship, Ordinary Least Square Regression, Standard error of estimate, Adjusted R square and goodness of fit.				

Reference books:

Anderson, David R., Thomas A. Williams and Dennis J. Sweeney. (2012). *Statistics for Business and Economics*. New Delhi: South Western.

Levin, Richard I. and David S. Rubin (1994). *Statistics for Management.* New Delhi: Prentice Hall.

Waller, Derek. (2008). *Statistics for Business*. London: BH Publications.

Lee, Cheng. et al. (2013). *Statistics for Business and Financial Economics*. New York: Heidelberg Dordrecht.

Related online content (MOOC, Swayam, NPTEL Website etc.)

https://www.edx.org/learn/statistics/stanford-university-statistical-learning?index=product&queryID=46981e46e3acbdd68ea0f98ea6636aaf&position=4&linked_from=autocomplete&c=autocomplete

https://onlinecourses.swayam2.ac.in/cec24_mg10/preview

Course outcomes

CO-1	To demonstrate a foundational understanding of statistical concepts, including descriptive and inferential statistics, probability theory, and statistical distributions.
CO-2	Create an ability to interpret statistical findings and draw meaningful conclusions relevant to business decision-making.
CO-3	Enhance proficiency in using statistical software packages, such as Excel, R, or SPSS, to analyze business data and perform statistical computations.

CO-4	To apply statistical methods to solve quantitative business problems, such as forecasting demand, analyzing market trends, and evaluating financial performance.
CO-5	To collect, organize, and analyze business data using appropriate statistical techniques and software tools

Semester I					
		Core course - V	T/P	Credits	H/W
Course Code:	30115	**ECONOMIC ANALYSIS FOR BUSINESS DECISIONS**	**T**	**4**	**4**

Objectives	The course gives an understanding of consumer‟s economic activities. It describes the concept of utility function and the Relationship between consumers Income and spending. The course also helps in understanding the law of demand, law of supply. The course gives a basic understanding of production function, and the cost involved in decision making. The course also talks about the macroeconomic variables involved in business decision.
Unit - I	**Basic Concepts of Economics** Economic problems, Flow of economic activities, understanding consumer‟s economic behaviour (Utility, Satisfaction, indifference behaviour), Relationship between consumers Income and spending, managerial economics- a way of thinking about business.
Unit - II	**Managing Demand and Supply** Law of demand, Understanding the determinants of demand for basic goods, Household durables, Luxuries, Exceptions, Constructing Demand equation, Demand elasticity. Law of Supply, supply determinants, supply equation, concept of Equilibrium.
Unit - III	**Production Costs and Business Decision** Production function, production decisions under various time periods, scale of production and managerial decision. Types of costs and its significance in decision making, Cost related decisions under various time periods.
Unit - IV	**Market Structure** Firm under competitive conditions as perfect and imperfect, market characteristics, price and output determination.
Unit - V	**Macro Economics in Business Decision** Government and market, National Income computation, Business cycle, inflation, Macroeconomic Policies.

Reference books

Mcguigan, James R. (2010). *Managerial Economics: Applications, Strategy and Tactics*. Mason: Cengage Learning.

Dean, Joel. (2008). *Managerial Economics.* New Delhi: PHI Learning Pvt Ltd.

Spencer, Milton H. (1973). *Managerial Economics.* Toronto: Irwin.

Shim Jae K. (2008). *Economic Analysis for Business and Strategic Decisions*. Singapore: Global Professional Publishing.

Related online content (MOOC, Swayam, NPTEL Website etc.)

https://www.edx.org/search?q=macro+economics

https://onlinecourses.swayam2.ac.in/cec24_hs21/preview

Course outcomes

CO-1	To understand the fundamental economic concepts and theories, including microeconomic and macroeconomic principles.
CO-2	An ability to apply economic models and frameworks to analyze business situations.
CO-3	Apply cost-benefit analysis for business decisions, including evaluating investment opportunities, pricing strategies, and resource allocation decisions.
CO-4	To acquire skills in economic forecasting techniques in order to anticipate and plan for future economic trends impacting business decisions.
CO-5	To analyze the economic implications of government policies, regulations, and external factors on business operations and strategy

Semester I					
		Core course - VI	**T/P**	**Credits**	**H/W**
Course Code:	30116	**RESEARCH METHODOLOGY**	**T**	**4**	**4**
Objectives	This subject will make the students familiar with the concepts of Research Methods starting from the variable types, types of research, scale of measurement to actual application with SPSS. The subject will equip the students with the skills of running appropriate SPSS commands and with that of decoding SPSS output for hypothesis testing and for Correlation and Regression Analysis.				
Unit - I	Introduction to SPSS: SPSS windows, Creation and saving of SPSS files, Variable view, Data view, Split and select command.				
Unit - II	Research Types: Exploratory and Experimental Research, Qualitative and Quantitative Research, Selection of Scale, Comparative and Non Comparative Scaling Techniques, Likert Scale, Mathematically Derived Scales, Choosing a Scaling Technique, Randomness. Run test for randomness. Questionnaire Design Process, Quality of a good questionnaire, type of interviewing method, individual question content, choosing question structure, choosing question wording, Closed and Open question, determining the order of question.				
Unit - III	Descriptive Statistics: Univariate descriptive analysis: Types of scales, Nominal, Ordinal, Interval and Ratio Scales. Categorical and Continuous Data. Bar Charts, Pie Charts, Box Plots, Stem and Leaf Diagram, Histogram, Mean Plot. Normalcy tests: Shapiro-Wilk and Kolmogorov Smirnov Test of Normality. Normality assessment through Histogram, Probability Plot, Q-Q Plot. Outlier‟s assessment. SPSS application.				
Unit - IV	Hypothesis Testing I: Central Limit Theorem, Types I and Type II Error, Level of Significance and Confidence Interval. Null and Alternate Hypotheses, Parametric and Non-parametric tsets. One Sample T-test, Paired Sample T-test, Independent Sample T test. SPSS application. Hypothesis Testing II: One way ANOVA, Chi-square test, Related Sample Wilcoxon Signed Rank Test, Mann-Whitney Test, Kruskal-Wallis and Friedman ANOVA test. SPSS application.				
Unit - V	Correlation and Simple Linear Regression Analysis: Relationship through scatter plots, Coefficient of correlation, Assumptions of Linear Regression, Standard Error of estimate, Adjusted R Square, Goodness of fit, Residual Analysis. Durbin-Watson statistics and Multicollinearity.				

Reference books

Bajpai, N. (2009). Business Statistics. New Delhi: Pearson.
Nargundkar, R. (2003). Marketing Research. New Delhi: Tata McGrawHill.
Malhotra, N.(2008). Marketing Research. New Delhi: Pearson.
Kothari, C. R. (2004). Research Methodology Methods and Techniques. New Delhi: New age International Publishers.
Chaudhary, C. M. (1991). Research Methodology. Jaipur: RBSA Publishers.

Related online content (MOOC, Swayam, NPTEL Website etc.)

https://onlinecourses.swayam2.ac.in/nou24_cm06/preview
https://www.edx.org/search?q=research

Course outcomes	
CO-1	Ability to conduct comprehensive literature reviews, critically analyze existing research in their field of study, and identify gaps or areas for further investigation
CO-2	To design research studies appropriate to their research questions or hypotheses,
CO-3	To demonstrate proficiency in collecting and analyzing data using various qualitative and/or quantitative research methods, as well as appropriate statistical techniques.
CO-4	To articulate research questions, outlining methodologies, and justifying the significance of their proposed research.
CO-5	To maintain integrity and ethics by avoiding plagiarism, maintaining data integrity, and upholding ethical standards in reporting research findings.

Semester I					
		Core course - VII	T/P	Credits	H/W
Course Code:	30117	**WRITTEN ANALYSIS AND COMMUNICATION**	**P**	**3**	**3**

Objectives	To teach students about the importance of business communications –verbal and non-verbal. To help them understand and practice the different methods of communication with clarity, crispness & effectiveness.
Unit - I	**Basics of Communication** Definitions of Communication, Human Communication, Communication Situation, Elements of Communication, The Communication Process, Business Communication, Importance of Business Communication, Communication Channels
Unit - II	**Barriers to Effective Communication** Barriers to Effective Communication: Physical, Physiological and Psychological Barriers, Overcoming Communication Barriers, Hearing v/s Listening, How to Shift from "Hearing" to "Listening"?, A Listener or Not?, Characteristics of Good and Poor Listeners, Causes of Poor Listening, Listening as a Business Tool, Listening for Fact v/s Listening for Overall Comprehension, Kinds of Listening, Approaches to Listening, Barriers to Effective Listening
Unit - III	**Written Communication for Business Scenarios** Business Correspondence, Types of Letters, Concept of Business Correspondence, Importance of Business Correspondence, Qualities of a Business Letter, Parts of a Business Letter, 7 Cs of Business Correspondence, Business Correspondence- The Myth, Business correspondence through emails
Unit - IV	**Letters, Reports and Memos for Different Situations** Pleasant Letters and Unpleasant Letters, Understanding the Audience, Factors that Help in Understanding the Audience, Organizing the Message, Writing Pleasant Letters, Writing Unpleasant Letters, Persuasive Letters, Understanding the Product, Customer and Purpose, Organizing the Message, Different Types of Persuasive Letters, Memos, Reports, Elements of a Report, Writing a Report, Using Graphics to Manage Data, Types of Visual Aids, Selection of Visual Aids
Unit - V	**Oral Communication and Non-Verbal Communication** Effective Oral Communication, Interviewing, Negotiation, Communication in Groups, Non-verbal Communication, Characteristics of Nonverbal Communication, Conventional and Nonconventional Nonverbal Communication, Dress, Interaction of Verbal and Nonverbal Communication

Reference books

Business Communication. ICMR Publications

Gibson, J W and Hodgetts R M. Business Communication. Harper and Row, 1990.

Bovee C L and Thill J V. Business Communication Today. McGraw Hill, 2008

Ron Hoff. A Fearless Guide to Making Great Presentations. Andrews and McMeel, 1998

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https://onlinecourses.swayam2.ac.in/cec24_cm04/preview

Course outcomes	
CO-1	To tailor their writing to different audiences, considering factors such as tone, style, and level of technicality.
CO-2	Ability to analyze information critically, evaluate arguments, and synthesize ideas from multiple sources to form their own conclusions.
CO-3	To demonstrate proficiency in written communication, including clarity, coherence, organization, and proper grammar syntax.
CO-4	To maintain professionalism in writing by including proper citation of sources, adherence to ethical standards and respect for diverse perspectives
CO-5	Confidence to adapt and approach to different formats and genres, such as reports, proposals, memos, and academic essays.

II Semester

Semester II					
		Core course	T/P	Credits	H/W
Course Code:	30121	MARKETING MANAGEMENT	T	4	4
Objectives	To teach the basics of marketing at the strategic & execution levels. Also to introduce the basic framework of branding. To teach the students about the all-pervasive nature of markets and their transformation across decades; to expose the rational, sensory & emotional triggers in consumer buying & selling. To introduce the basics of marketing communications and the principles of branding.				
Unit - I	**An Overview of Marketing Management** Introduction to Marketing Management, Marketing Management – An Overview, Introduction, What is Marketing?, Understanding the Marketplace and Consumer Needs, Designing a Customer Driven Marketing Strategy, Construct an Integrated Marketing Program, Building Customer Relationships, Capturing Value from Customers, The Changing Landscape of Marketing, Consumer Behaviour and Business Buyer Behaviour, Consumer Behaviour: Definition, Factors Affecting Consumer Behaviour, Harley-Davidson Consumers: A Case Study, The Buyer Decision Process, Business Buying Process, Factors affecting Business Buying Decisions, Business Buyer Behaviour.				
Unit - II	**Market Segmentation and Market Research** Marketing Strategy, Market Segmentation and Product Positioning, Market Segmentation, Market Targeting, Target Market Strategies, Product Positioning and Differentiation, Choosing a Differentiation and Positioning Strategy, Changing the Product Positioning, Consumer Needs, Wants, and Consumer Insights, Benefits Sought By Consumers, The Impact of Emotional Benefits, Examples of Consumer Insights, Consumer Insight, Possible Sources of Insights, Using Insights – An Example, Finding and Developing an Insight – A Case Study, The Role of an Insight in Product Development and Marketing, Market Research, Definition, Market Research and Marketing Research, Types of Market Research, Market Research: Examples, The Marketing Research Process, International Marketing Research, Market Research for Small Businesses.				
Unit - III	**Products, Services and Pricing Decisions** Product and Price, Products and Services, Products, Services, and Experiences, Levels of Product and Services, Product and Service Classifications, Consumer Products, Industrial Products, Product and Service Decisions, Product and Service Attributes, Branding, Packaging, Labelling, Product Support Services; Product Line Decisions, Product Mix Decisions; Services Marketing--The Nature and Characteristics of a Service, Branding Strategy, Building Strong Brands, Brand Equity, Building Strong Brands, Brand Positioning, Brand Name Selection, Brand Sponsorship, New Product Development and Product Life Cycle (PLC), New-Product Development Strategy, Product Life-Cycle Strategies, Introduction Stage, Growth Stage, Maturity Stage, Decline Stage, Pricing, Factors to Consider When Setting Prices, Customer Perceptions of Value, Company and Product Costs, Other Internal and External Considerations Affecting Price Decisions, Public Policy and Pricing, Anti-Competitive Agreements, Abuse of Dominance, Unfair Trade Practices.				
Unit - IV	**Marketing Communications for the Domestic and Global Markets** Promotion and Place Mix, Marketing Communications, Verbal Identity of a Brand, Visual Identity of a Brand, Integrated Marketing Communications (IMC), Designing an Effective Message, Setting the Total Promotion Budget, Promotion Mix Strategies – Push and Pull Strategy, The Nature of Each Promotion Tool, Evaluation of Advertising Effectiveness, Public Relations, Advertising and Public Relations, Personal Selling and Sales Promotion, Personal Selling, Managing the Sales Force, Sales Forecasting, Steps in				

	Personal Selling, Add-On Sales Ideas, Advantages and Disadvantages of Personal Selling, Cultural Barriers in Marketing Communication.
Unit - V	**Marketing Channels and Global Trends** The Distribution Channel, Type of Marketing Channel, Channel Motivation, Importance of Channel of Distribution, Multiple Channels Distribution, Retail, Levels of Service, Corporate Retailing, The New Retail Environment, Direct Marketing, Benefits of Direct Marketing, Direct Marketing Channels, Public and Ethical Issues in Direct Marketing, The Moving Goal Post, The Moving Goalpost, Consumer Purchase Decision Making Process, Factors Affecting the Consumer Behaviour, Emerging Consumer Trends in the global business front and Corresponding Competition Strategies.

Reference Books

Kotler, Keller, Koshy & Jha. *Marketing Management: A South Asian Perspective*, 13th Edition, Pearson Education, 2012.

Rosalind Masterson &David Pickton. *Marketing: An Introduction,* 2nd Edition, Sage Publications, 2010.

Tapan Panda, *Marketing Management: Text and Cases Indian Context*, 2nd Edition, Excel Books India, 2009.

Ramaswamy V. S. & Namakumari S, *Marketing Management Global Perspective Indian Context*, 4th Edition, Macmillan India Limited, 2010.

William J. Etzel Stanton (Michael J. Walker, Bruc Ce J.), Michael J. Etzel, Bruce J. Walker, *Fundamentals of Marketing*, 9th Edition, Mcgraw-Hill Publishing Company, 1991.

Arun Kumar & Dr. Meenakshi N, *Marketing Management*, 2nd Edition, Vikas Publishing House, 2011.

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https://www.edx.org/learn/marketing-management/indian-institute-of-management-bangalore-marketing-management?index=product&queryID=3e4738fcd368c8ef573f92fc3fa797a6&position=3&linked_from=autocomplete&c=autocomplete

Course outcomes

CO-1	To apply marketing concepts, theories, and techniques to real-world case studies, projects, and simulations, allowing them to develop practical marketing skills and problem-solving abilities.
CO-2	To understand the product development process, manage product portfolios, and develop strategies for branding, positioning, and differentiation in competitive markets.
CO-3	Ability to conduct market research and analysis to identify market trends, opportunities, and threats, as well as understand consumer preferences, needs, and behavior.
CO-4	To develop pricing strategies based on cost analysis, competitive analysis, and customer value perceptions to maximize profitability and market share.
CO-5	To understand the importance of building and maintaining customer relationships, implementing CRM systems, and developing strategies for customer acquisition, retention, and loyalty.

Semester II					
		Core course	T/P	Credits	H/W
Course Code:	30122	**HUMAN RESOURCE MANAGEMENT**	**T**	**4**	**4**
Objectives	➢ To teach the students about people as essential resources in any organisation and how best to motivate them for optimum performance. ➢ To help the students understand the crucial role of people in any business; to explore different aspects of building this vital capability across the entire spectrum.				
Unit - I	**Human Resource Management – Scope and Functions** Perspectives in Human Resource Management, Human Resource Management – An Introduction, People – The Competitive Advantage, Role of HRM, HRM Functions, Organization of HR Department, HRM Policies and Principles, HR Skills, HRM Models, Evolution of HRM in India and e-HRM, HRM Models, HRM in India and Its Evolution, e-HRM, Globalization and Contemporary Challenges in HRM, HRM in Mergers and Acquisitions, Globalization and HRM, Contemporary Challenges in HRM, HRM in High Performing Organizations, New Organizational Forms, Changing Demographics of Workforce, Changed Employee Expectations, HR Professional as a Change Agent.				
Unit - II	**Recruitment Process** HR Planning, Recruitment and Selection, HR Planning, Importance of HRP, Factors Affecting HRP, HR Planning Process, HRP and the Government, Requisites for Successful HRP, Barriers to HRP, Job Analysis, Job Analysis and Competitive Advantage, Process of Job Analysis, Purposes of Job Analysis, Job Analysis and Total Quality Management (TQM), Job Analysis and Strategic HRM, Potential Problems with Job Analysis, Recruitment and Selection, Purpose and Importance of Recruitment, Factors Governing Recruitment, Recruitment Process, Philosophies of Recruiting, Alternatives to Recruitment, Selection as a Source of Competitive Advantage, Organization for Selection, Selection Process, Barriers to Effective Selection.				
Unit - III	**Training and Development** Training and Development, Induction and Orientation, Purpose of Orientation, Orientation Programme, Requisites of an Effective Program, Placement – After Orientation, Evaluation of an Orientation Programme, Possible Errors in Orientation, Methods of Training, Nature of Training and Development, Inputs in Training and Development, Training Inputs across Employees, Training and Development as a Source of Competitive Advantage, The Training Process, Barriers to Effective Training, Management Development and Career Development, Management Development Programmes (MDPs), On-the-Job MDPs, Off-the-Job MDPs, Career Development, Career Development Initiatives, Career Development Roles, Performance Management, Performance Appraisal – An Overview, Objectives of Performance Appraisal, Performance Appraisal and Competitive Advantage, Appraisal Process, Problems of Traditional Appraisal and Rating, Potential Appraisals, Legal Factors and Job Evaluation, Potential Appraisals, Legal Issues Associated with Performance Appraisal, Job Evaluation, Pitfalls of Job Evaluation, Alternatives to Job Evaluation.				
Unit - IV	**Employee Compensation and Benefits** Compensation Planning, Wages, Salary, and Perquisites, Remuneration Components in an Organization, Theories of Remuneration, Reinforcement and Expectancy Theories, Equity Theory, Agency Theory, Why an Ideal Remuneration System is Important?, Factors Influencing Employee Remuneration, External Factors, Internal Factors, Remuneration Plans and Business Strategy, Devising a Remuneration Plan, Challenges of Remuneration, Concept of Wages, Remuneration Special Groups, Incentives and Bonus, Importance of Incentives, Disadvantages of Incentives, Prerequisites of an				

	Effective Incentive System, Scope of Incentive Schemes, Types of Incentive Schemes, Incomes Varying in Proportion to Output, Earnings Varying Proportionately Less than Output, Earnings Varying Proportionately More than Output , Earnings Differing at Different Levels of Output , Group Incentive Schemes, Incentives Schemes for Indirect Workers, Incentive Schemes in Indian Industries, Installing an Incentive Scheme Fringe Benefits, Why Employee Benefits and Services?, Types of Employee Benefits and Services, Principles of Fringes, Significant Benefits and Services, Administration of Benefits and Services, The Future of Fringe Benefits, HR laws in the global.
Unit - V	**Managing Human Resources in International Business** The Internationalization of Business, How Inter-country differences affect HRM, Improving International Assignments through Selection, Training and Maintaining International Employees, International Labour Relations, Safety Abroad, major considerations in formulating a compensation plan for overseas employees, Repatriation: Problems and Solutions, Handling cultural differences.

Reference Books

Seema Sanghi, *Human Resource Management*, 1st Edition, Macmillan India Limited, 2012.

Cynthia D. Fisher, Lyle F. Schoenfeldt, James B. Shaw, *Human Resource Management*, Dreamtech Press, 2008.

Biswajeet Pattanayak, *Human Resource Management*, 3rd Edition, PHI Learning Pvt. Ltd., 2005.

Snell, Bohlander, & Vohra, *Human Resource Management: A South Asian Perspective*, Cengage Learning, 1st Edition, 2010.

Lawrence Kleiman, *Human Resource Management: Managerial Tool for Competitive Advantage*, 5th Edition, Cengage Learning, 1999.

RS Dwivedi, *A Textbook of Human Resource Management,* 1st Edition, Vikas Publishing House, 2009.

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https://www.edx.org/executive-education/university-of-cape-town-human-resource-hr-management?index=product&queryID=b1bc1b08c31dce6320b2f1aee02573c9&position=2&linked_from=autocomplete&c=autocomplete

https://onlinecourses.nptel.ac.in/

Course outcomes

CO-1	An understanding of the principles, theories, and concepts of human resource management, including the strategic role of HRM in organizations and its impact on organizational performance.
CO-2	To develop skills in talent acquisition and recruitment, including sourcing candidates, conducting interviews, evaluating applicants, and making hiring decisions to attract and retain qualified employees.
CO-3	Able to design, implement, and evaluate training and development programs to enhance employee skills, knowledge, and performance and support organizational goals.
CO-4	Enable to create compensation systems, including salary structures, incentive plans, and employee benefits, and understands how to design and administer competitive compensation packages.
CO-5	Ability to conduct workforce planning, identify future staffing needs, assess talent requirements, and implement succession planning strategies to ensure organizational continuity and leadership development.

Semester II					
		Core course	T/P	Credits	H/W
Course Code:	30123	FINANCIAL MANAGEMENT	T	4	4
Objectives	At the end of this subject, student will: ➢ Familiarise with fundamental concepts of Financial Management like Objectives of Financial Management, Time Value of Money, Cost of Capital, Valuations and Capital Budgeting, Capital Structures and Dividend Policies. All these concepts will be explained with the help of case studies and live data.				
Unit - I	**Introduction to Financial Management** ● Definition, meaning and role of Financial Management, Goals of Business finance, Profit Maximization vs. Wealth Maximization, Profit Maximization – Approvals and Objections, Wealth Maximization, Growth Maximization, Agency problems. ● Time Value of Money: Time line, Cash Flow Sign Convention, Calculation of Annuities, Inflation Adjusted Interest Rates, Present Value, Net Present Value, Excel Application.				
Unit - II	**Cost of Capital** ● Cost of Debt: Irredeemable and Redeemable Debenture, Preference Shares, Common Stock; Cost of Equity: Dividend Yield Method, Dividend Yield Plus Growth Rate Method, Earning Yield Method, Realised Yield Method. Calculating Weighted Average Cost Of Capital: the adjusted-beta CAPM, APM, the Bond Yield plus Risk Premium Approach. ● Cost of Retaining Earnings, Weighted Average Cost of Capital– Meaning, Limitations and Considerations in Calculating WACC, Adjusting WACC for Risk. ● Sources of Long Term Finance, Capital Asset Pricing Model or CAPM.				
Unit - III	**Valuations & Capital Budgeting** ● Valuation of Securities - Stocks and Bonds: Concept of Value, Features of a Bond, Bonds Values and Yields, The Expectation Theory, Valuation of Preference Shares, Valuation of Ordinary Shares. ● Meaning, Nature, Significance and Procedure of Capital Budgeting, Investment Evaluation Criteria, Discounted Cash Flow Criteria (NPV, IRR, PI), Non-discounted Cash Flow Criteria (PB, discounted PB, ARR).				
Unit - IV	**Capital Structure Theories & Dividend Decisions** ● Capital Structure: Meaning, Designing and Factors influencing Capital Structure and Optimal Capital Structure. ● Leverages: Financial Leverage, Operating Leverage, Combined Leverage, Approaches of Financial Management. ● Capital Structure theories: Net Income Approach, Net Operating Income Approach, Modigliani Millar Approach, Modern Approach to Corporate Finance in an Improvement on the Traditional Approach, Pecking Order Theory. ● Dividend Decisions, Relevance V/s Irrelevance of Dividends (Relevant Theory: Walter‟s Model, Gordon‟s Model; Irrelevant Theory: MM‟s Approach, Traditional Approach).				
Unit - V	**Working Capital Management and Finance** ● Cash Management: Motives for Holding Cash, Objectives and Facts of Cash Management. ● Receivables Management: Study of Credit Policy. ● Inventory Management: Definition and Nature of Inventories, Reasons for Holding Inventories, Inventory Management Techniques: HML Analysis, VED Analysis, SDE Analysis, EOQ Analysis. ● Working Capital Finance: Concept, Meaning, Definition, Importance, types and Determinants, Operating Cycle Concept, Working Capital Finance: Factors influencing WCM Estimation, Problems on estimation.				

Reference Books

Khan & Jain. *Financial Management*, 7th edition. TMH, 2014.
I M Pandey. *Financial Management*, 10th edition. Vikas Publications, 2013.
Van Horne and Wachowitz. *Fundamentals of Financial Management* 13th ed. Phi Learning, 2009.
James C. Van Horne, Sanjay Dhamija. *Financial Management and Policy*, 12th Edition. Pearson Education, 2011.
Prasanna Chandra. *Financial Management,* 5th edition. Tata McGraw Hill, 2010.
Brigham and Erhardt. *Corporate Finance* (with Thomson One - Business School Edition), 5th edition, South Western Educational Publishing, 2013.
Ross, Wetfield & Jaffer. *Corporate Finance,* 8th edition, McGraw-Hill/Irwin, 2008.

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https://onlinecourses.nptel.ac.in/

Course outcomes

CO-1	Ability to analyze financial statements (income statement, balance sheet, and cash flow statement) to assess the financial health and performance of a company,
CO-2	To evaluate investment opportunities using various techniques and make informed investment decisions based on these evaluations.
CO-3	To comprehend the process of capital budgeting and make appropriate capital investment decisions considering factors such as risk, return, and timing of cash flows.
CO-4	To assess the relationship between risk and return and understand how risk affects investment decisions, portfolio management, and capital structure choices.
CO-5	To understand the implications of globalization on financial management, including international finance, foreign exchange markets, and multinational financial management.

Semester II					
		Core course	**T/P**	**Credits**	**H/W**
Course Code:	30124	**PROJECT MANAGEMENT AND BUDGETING**	**T**	**4**	**4**
Objectives	➢ To teach the students the basics of project planning, budgeting, execution & course-correction. ➢ To explain to the students the importance of flawless execution which requires intense & detailed planning & resourcing; also the principles of project management				
Unit - I	**Introduction to Project Management** Introduction and Fundamentals of Project Management, Introducing Project Management, Project – What is it and its Characteristics, Project Management - Definitions, Terms, The Project Management Process, Defining the Scope, Understanding the Project Manager's Role, Project Management as a Critical Career Skill, History of Project Management and the Project Environment, A Brief History of Project Management.				
Unit - II	**Project Environment** The Project Environment, Project Lifecycle, Project Managers are Leaders, Organization Structure - The Basic Model, Modifications to the Basic Model, The Organizational Culture and Change, Organization as a System, Surviving the Organizational Structure, Project Stakeholders, Stakeholders – Who are they? Roles of the Stakeholders, How the Project Manager should lead the stakeholders. Public Private Partnership (PPP).				
Unit - III	**Project Planning** Initiation and Planning, Initiation, Project Kick-off and Communication, The kick-off meeting, the Project Charter creation, Assigning roles to the team, developing responsibility matrix, Developing the Communication Plan, Project Scope and Priorities, Defining the Scope, Vision Document, Statement of Work, Establishing Project Priorities, The Documents that need to be created, Project Scope and its Management - Work Breakdown Structure and Verification of the Scope, Work Breakdown Structure: Definition, Understanding and Creation. Verifying the Project Scope and Protecting the Scope from Change, Planning, The Project Planning Process, The Planning Stage: Introduction to Planning, The Process and the Activities, Creating a Schedule and Time Management Plan, Creating a Resource Plan, Creating a Financial Plan, Creating a Quality Plan, Creating a Risk Plan, Creating a Acceptance Plan, Creating a Communication Plan, Creating a Procurement Plan, Phase Review. Build Operate and Transfer (BOT), BOLT, BOO.				
Unit - IV	**Project Execution** Executing the Project, Project Work – Execution, Introduction to the process of execution, Directing the project work, Assuring Quality, Completing Procurements, Building a High Performance Project Team, Project Team is developed, not acquired – The Project Team Dynamics, Framework for Building a Team. Managing Project Team - How to Manage it? Motivation and Leadership, Collaborative Problem Solving, Knowing the Stakes and Managing them, Stakeholder Management – Managing the Expectations, Information Distribution.				
Unit - V	**Scheduling the Project in a Global Business Environment** Monitoring and Closing the Project in a global business environment, Monitoring and Controlling the Project Work, Monitoring and Controlling the Project Work, Monitoring and Controlling Project Work – The Process: Integrating Change Control and Administering Procurements, Monitoring and Controlling the Scope, Schedule and Cost , Monitoring and Controlling Scope, Schedule and Cost – Overview, Controlling Scope, Controlling Schedule and Controlling Cost, Closing the Project – An Overview,				

	Verifying the Scope of the Project Deliverables, Project Closure – The Tasks, Closing the Procurements and Providing the Finishing Touch, Managing a project across geographical borders Case studies.

Reference Books

Robert L Kimmons, James H Loweree. *Project Management: A Reference For Professionals: Cost Engineering*, CRC Press, 2000.

A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Fifth Edition, Project Management Institute, 2013.

Sanford I. Heisler. *The Wiley Project Engineer's Desk Reference: Project Engineering, Operations, And Management*, Wiley-interscience, 1994.

James P Lewis. *Fundamentals of Project Management*, Heritage Publishers, 2003

Harvard Business Press, *Managing Projects Large and Small: The Fundamental Skills to Deliver on budget and on Time,* 2003.

Kimberley Wiefling. *Scrappy Project Management: The 12 Predictable and Avoidable Pitfalls Every Project Faces*, Scrappy About, 2003.

Quentin W. Fleming, Joel M. Koppelman. *Earned Value: Project Management*, Project Management Institute, 2005.

Kevin R. Callahan, Gary S. Stetz, Lynne M. Brooks. *Project Management Accounting: Budgeting, Tracking, And Reporting Costs And Profitability*, John Wiley & Sons, 2007.

Semester II				
	Core course	**T/P**	**Credits**	**H/W**
Course Code: 30125	**FUNDAMENTALS OF DIGITAL MARKETING**	**T**	**4**	**4**

Objectives	Media is evolving and brand communication must keep pace. This will cover the innovations in this area. Given the power of media to influence beliefs, knowledge and attitudes, for brands and businesses, this is a vital link; it will also explore the latest trends in media & content; user generated content and its impact on media monetisation and the entire media business model.
Unit - I	**Introduction to Digital Branding** Benefits of Digital Display, Target Audience, Challenges of Digital Display, Campaign Objectives, Business Value, Campaign Budget, Running Effective Ads, Creative Formats, Ad Formats, Targeting, Ad Features, Tracking your Campaign, Ad Display Frequency, Optimizing the Campaign, Campaign Planning, Laws & Guidelines
Unit - II	**Content Marketing** What is Content Marketing?, Identifying Prospects, Writing Messages and Creating Content, Getting the Message into the Media, Content Essentials, Content Strategy, Idea Creation, Content Creation, Social Media Promotion, Traffic Generation, Content Auditing,
Unit - III	**Consumer Generated Content** Definition and Insights on Consumer Generated Content, Do-It-Yourself (DIY) Advertising, Product Development, and Opportunities for Co-creation, and Four Building Blocks of Co-creation.
Unit - IV	**Gamification** Gamification and the Fun Theory, Gamification and Major Brands, Five Elements of Gamification in a Branding Strategy, advergaming, Gamevertising, Principles of Gamification.
Unit - V	**The Future of Media** Scenario Planning, Interpreting Scenario, Dynamic Content Creation, Strategic Framework of the Future of Media, the Consumer/Creator Archetype, Revenue and Ad Aggregation, Distribution: Channels, Devices, and Mobility, Globalization and Localization, Intellectual Property and Media; Shifting Advertising Channels - Growth in Digital Advertising, Social Networks, Blogging Platforms, Drivers of Value, The Forces Shaping Media--Increasing Media Consumption, Fragmentation, Participation, Personalization, New Revenue Models, Generational Change, Increasing Bandwidth; Future of Media Lifecycle Cases.

Reference Books:

Marion McGovern, Dennis Russell& Dennis Russell, (2001) A New Brand Of Expertise: How Independent Consultants, Free Agents, And Interim Managers Are Transforming The World Of Work – Butterworth Heinemann Special Priced Titles.

BrenMonteiro, Marketing Manual: Focus On Branded Content, With Other Marketing Aspects-6 Degrees Books.

Killer Web Content: (2006) Make The Sale, Deliver The Service, Build The Brand – Gerry McGovern,1/e, A & C Black.

Get Content Get Customers: Turn Prospects into Buyers with Content Marketing McGraw-Hill.

Joe Pulizzi, (2006) Guerrilla Advertising: Unconventional Brand Communication - Gavin Lucas and Michael Dorrian, Laurence King Publishers,2006

Semester II					
		Core course	T/P	Credits	H/W
Course Code:	30126	**FUNDAMENTALS OF BUSINESS ANALYTICS**	**T**	**4**	**4**
Objectives	The course familiarizes the students with all concepts of business intelligence including what problems the technology of Data Warehouse (DW) /Business Intelligence (BI) /Advanced Analytics (AA) solve for businesses and when an organisation is ready for DW/BI/AA.				
Unit - I	**IT and Business Analytics** Business View of Information Technology Applications, Business Enterprise Organization, Its Functions, and Core Business Processes, Baldrige Business Excellence Framework (Optional Reading) , 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.				
Unit - II	**Digital Data, OLTP and OLAP** Types of Digital Data, Getting to Know Structured Data, Getting to Know Unstructured Data, Getting to Know Semi-Structured Data, Difference Between Semi-Structured and Structured Data. Introduction to OLTP and OLAP, OLTP (On-Line Transaction Processing), OLAP (On-Line Analytical Processing), Different OLAP Architectures, OLTP and OLAP, Data Models for OLTP and OLAP, Role of OLAP Tools in the BI Architecture, Should OLAP be Performed Directly on Operational Databases?, A Peek into the OLAP Operations on Multidimensional Data, Leveraging ERP Data Using Analytics.				
Unit - III	**Business Intelligence** Getting Started with Business Intelligence, Using Analytical Information for Decision Support, Information Sources Before Dawn of BI?, Business Intelligence (BI) Defined, Evolution of BI and Role of DSS, EIS, MIS, and Digital Dashboards, Need for BI at Virtually all Levels, BI for Past, Present, and Future, The BI Value Chain, Introduction to Business Analytics.BI Definitions and Concepts, BI Component Framework, Who is BI for?, BI Users, Business Intelligence Applications, BI roles and Responsibilities, popular BI tools.				
Unit - IV	**Data Integration and Modeling** Basics of Data Integration, Need for Data Warehouse, Definition of Data Warehouse, What is a Data Man?, What is Then an ODS?, Ralph Kimball's Approach vs. Who Inmon's Approach, Goals of a Data Warehouse, What Constitutes a Data Warehouse?, What is Data Integration?, Data Integration Technologies, Data Quality, Data Profiling. Multidimensional Data Modeling, Types of Data Model, Data Modeling Techniques, Fact Table, Dimension Table, Typical Dimensional Models, Dimensional Modeling Life Cycle.				
Unit - V	**Performance Management and Enterprise Reporting** Understanding Measures and Performance Measurement System Terminology, Navigating a Business Enterprise, Role of Metrics, and Metrics Supply Chain "Fact based Decision Making" and KPIS , KPI Usage in Companies, Where Do Business Metrics and KPIS Come From, Connecting the Dots: Measures to Business Decisions. Basics of Enterprise Reporting, Reporting Perspectives Common to All Levels of Enterprise, Report Standardization and Presentation Practices, Enterprise Reporting Characteristics in OLAP World, Balanced Scorecard, Dashboards, How Do You Create Dashboards?, Scorecards vs. Dashboards, The Buzz Behind Analysis.				

Reference books

Prasad, R. N., and Acharya, Seema. (2011). *Fundamentals of Business Analytics*, 1st Edition. New Delhi: Wiley India.

Shmueli, Galit, Patel, Nitin R. and Bruce, Peter C. (2011). *Data Mining for Business Intelligence*. New Delhi: Wiley-India.

Kimball, Ralph and Ross, Margy. (2011). *Practical Tools for Data Warehousing and Business Intelligence*, 2nd Edition. New Delhi: Wiley-India.

Biere, Mike. (2003*). Business Intelligence for the Enterprise*, First Edition. IBM Press.

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Course outcomes

CO-1	To develop proficiency in basic statistical analysis techniques relevant to business analytics, including hypothesis testing, correlation analysis, and variance analysis.
CO-2	Ability to apply descriptive analytics techniques to summarize and interpret historical data, including measures of central tendency, dispersion, and graphical representations.
CO-3	To develop a comprehensive understanding of the fundamentals of business analytics, including its role, importance, and applications in modern business environments.
CO-4	To create effective data visualizations and dashboards to communicate analytical findings and insights to stakeholders using tools
CO-5	To apply business analytics concepts and techniques to real-world business problems and demonstrate their ability to derive actionable insights and recommendations.

Semester II					
		Core course	T/P	Credits	H/W
Course Code:	30127	**CONSUMER BEHAVIOUR**	**T**	**3**	**4**
Objectives	Understanding Consumer Behaviour- Meaning and Concept of Consumer and Customer, Consumer Learning, Different Models in Consumer Behaviour, Consumer Decision making process-Concept of Consumer Decision; Levels of Consumer Decision Making; Consumer Decision Making Model, Changing Indian Consumer Behaviour-Drivers of Change; Changing Consumer Trends; Rural Consumer Behaviour; New Consumption Patterns, Organizational Buying Behaviour				
Unit - I	**Overview of Consumer Behaviour** Understanding Consumer Behaviour- Meaning and Concept of Consumer and Customer, Consumer Learning, Different Models in Consumer Behaviour, Consumer Decision making process-Concept of Consumer Decision; Levels of Consumer Decision Making; Consumer Decision Making Model, Changing Indian Consumer Behaviour-Drivers of Change; Changing Consumer Trends; Rural Consumer Behaviour; New Consumption Patterns, Organizational Buying Behaviour.				
Unit - II	**Factors Influencing Consumer Buying Decision** Influence of Culture on Consumer Behaviour-Concept of Culture; The measurement of Culture; Indian Core Values; Cultural aspects of emerging markets, Values, Lifestyles, and Psychographics- Impact of Values, Lifestyles and Psychographics on buying behaviour; Demographics, Lifestyles and Psychographics; Values and Value Systems, Group Influence on Consumption- Role of reference groups; Effect of reference groups on consumer decision making; Celebrity endorsements.				
Unit - III	**Customer Loyalty Comprehension** Meaning and definition of customer loyalty, Significance of Customer Loyalty, Customer Loyalty Ladder, Loyalty Principles, Benefits of Customer Loyalty, Customer Loyalty and its relationship with customer satisfaction, Customer retention and Brand Loyalty, Factors affecting customer loyalty formation, Rai Srivastava model of customer loyalty formation, Drivers of Customer Loyalty.				
Unit - IV	**Customer Loyalty Outcomes** Characteristic Features of Behavioural Loyalty, Attitudinal Loyalty and Cognitive Loyalty, Role of Customer Loyalty outcomes in business decisions, Significance of Customer Loyalty for Marketers, Relationship Influencers of Customer Loyalty including factors mediating customer loyalty relationship with other relationship influencers, Customer Affinity, Customer Engagement.				
Unit - V	**Customer Loyalty Measurement and Application** Measuring Customer Loyalty, Customer Loyalty measurement models and scales, Influence of Service Quality on Customer Loyalty, Customer Loyalty in Retail Industry, Customer Loyalty in Banking and Insurance Industry, Customer Loyalty Application in Aviation Industry.				

Reference Books

Hawkins, Best, Coney: Consumer Behaviour Building Marketing Strategy, Tata McGraw Hill.
H.Peer Mohammed: Customer Relationship Management, Vikas.
Panwar, J.S. Beyond Consumer Marketing, Sage Response Books, New Delhi.
Mukesh Chaturvedi and Abhinav Chaturvedi: Customer Relationship Management An Indian Perspective. Excel Books.
Deon – Buyer Behaviour, Oxford University Press.

Related online content (MOOC, Swayam, NPTEL Website etc.) https://www.edx.org/learn/marketing/indian-institute-of-management-bangalore-consumer-behaviour?index=product&queryID=65f2d0dab8f03280c6621ee0399ee8e4&position=6&linked_from=autocomplete&c=autocomplete https://onlinecourses.nptel.ac.in/	
Course outcomes	
CO-1	Ability to describe and analyze the various stages of the consumer decision-making process.
CO-2	An understanding of key consumer behavior theories and models and will be apply them to real-world consumer scenarios.
CO-3	To analyze the impact of psychological factors on consumer behavior and understand how marketers can leverage these factors in marketing strategies.
CO-4	Proficiency in designing and conducting consumer research studies using both qualitative and quantitative research methods,
CO-5	Ability to use consumer behavior insights to develop effective marketing strategies, including product design, pricing strategies, promotional campaigns, and distribution channels.

III Semester

MBA (BUSINESS ANALYTICS) III-Semester					
Core 1	**Course code:** 30131	**Data Warehousing and DBMS**	**T**	**Credits:4**	**Hours:4 / week**
Pre-requisite	**Basic Knowledge of Data Warehousing and DBMS**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. To learn the fundamentals of databases, including data modeling and relational database management systems (RDBMS) 2. To understand the purpose and architecture of data warehouses.				

UNIT-1 INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS

Introduction to databases, the relational model- database design- normalization process, parallel and distributed databases, object oriented databases: concept, web technology and DBMS, transaction management.

UNIT-2 INTRODUCTION TO DATA WAREHOUSING

Data warehousing concepts, Databases versus Data Warehousing,-Business need for data warehousing, architecture of Data Warehouse, building a Data Warehouse, properties of data in Data Warehouse, importance of Meta Data, Data Marts, critical success factors of Data Warehouse, trends in Data Warehousing.

UNIT-3 DATA PREPARATION FOR DATA WAREHOUSING

Mapping Data Warehouse with Business, dimensional modeling, Data Extraction -Transformation and Loading Tools (ETL), importance of data quality in Data Warehousing.

UNIT-4 DATA WAREHOUSE AND ANALYSIS

Categorizing users of Data Warehouse and their business requirement, reporting and query tools- On-Line Analytical Processing (OLAP) in Data Warehouse- role of Data Warehousing on web applications, introduction to Data Mining, Data Visualization.

UNIT-5 DATA WAREHOUSE IMPLEMENTATION AND MAINTENANCE

Introduction to Business Intelligence Applications- expanding Data Warehouse/ Business Intelligence System, deployment- growth and maintenance of Data Warehouse.

References

1. Ponniah, Paulraj. (2010). *Data Warehousing: Fundamentals for IT Professionals* (English). (2nd ed). Wiley.
2. Chopra, Rajiv. (2010). *Database Management System A Practical Approach For DBMS.* (1st ed). S.Chand Publishing.
3. Mundy, Joy. et al. (2008). *The Data Warehouse Lifecycle Toolkit*. Indianapolis: Wiley publishing Inc.
4. Ponniah, Paulraj. (2011). *Data Warehousing: Fundamentals for IT Professionals*. New Delhi: Wiley India Pvt Ltd.
5. Prabhu, C. S. R. (2008). *Data Warehousing: Concepts, Techniques, Products andApplications*. New Delhi: PHI Publications.
6. Inmon, W. H. (2005). *Buidling the Data Warehouse*. London: Wiley Publications.

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https://onlinecourses.nptel.ac.in/

Course outcomes	
CO-1	To gain the skills in designing and implementing databases.
CO-2	Ability to perform data integration tasks, including data extraction from heterogeneous sources, data transformation, and loading into a data warehouse
CO-3	To develop an understanding of techniques for optimizing the performance of database systems and data warehouse queries.
CO-4	To create entity-relationship diagrams (ERDs), normalize database schemas, and implement database structures using SQL or other database-specific languages.
CO-5	To create and manage relational databases, define database schemas, and perform data manipulation and querying using SQL.

MBA (BUSINESS ANALYTICS) III-Semester					
Core 2	**Course code:** 30132	**Python For Data Analytics**	**T**	**Credits:4**	**Hours:4 / week**
Pre-requisite	**Basic Knowledge of Python For Data Analytics**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. To understand the fundamentals of Python programming language, including variables, data types, control structures (loops and conditionals), functions, and error handling. 2. To perform basic statistical analysis using Python, including descriptive statistics, hypothesis testing, correlation analysis, and regression analysis.				

UNIT-1OVERVIEW OF PYTHON

History, Features, Working with Python, Installing Python, basic syntax, interactive shell, editing, saving, and running a script. The concept of data types; variables, assignments; immutable variables; numerical types; Arithmetic and Logical operators and Boolean expressions. Debugging, comments in the program; understanding error messages; Catching exceptions using try and except.

UNIT-2 DATA, EXPRESSIONS, STATEMENTS:

Python interpreter and interactive mode; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; modules and functions, function definition and use, flow of execution, parameters and arguments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points.

UNIT-3 CONTROL FLOW, FUNCTIONS: CONDITIONALS:

Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, GCD, exponentiation, sum an array of numbers, linear search, binary search.

UNIT-4 LISTS, TUPLES, DICTIONARIES

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning list-, list parameters; Tuples: tuple assignment, tuple as return value; DictionarieS- operations and methods; advanced list processing – list comprehension; Illustrative programs: selection sort, insertion sort, merge sort, histogram.

UNIT-5 FILES, MODULES, AND PACKAGES

Files and exception: text files- reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count, copy file-Introduction to NumPy, NumPy Array, Creating NumPy Array- Array Attributes, Array Methods- Array Indexing, Slicing Arrays, Array Operation, Iteration through Arrays- Pandas-Introduction to Pandas, Pandas Series, Creating Pandas Series, Accessing Series Elements-Filtering a Series, Arithmetic Operations, Series Ranking and Sorting, Checking Null Values-Concatenate a Series -Visualisation using Matplotlib-Plot Styles & Settings, Line Plot, Multiline Plot, Matplotlib Subplots,-Histogram, Boxplot, Pie Chart, Scatter Plot

References

1. Mark Lutz, “Learning Python Powerful Object Oriented Programming”, O’reilly Media 2018, 5th Edition
2. Timothy A. Budd, “Exploring Python”, Tata MCGraw Hill Education Private Limited 2011, 1st Edition
3. Allen Downey, Jeffrey Elkner, Chris Meyers, “How to think like a computer scientist: learning with Python”, 2012.

4. Sheetal Taneja & Naveen kumar, “Python Programming a Modular approach – A Modular approach with Graphics, Database, Mobile and Web applications”, Pearson, 2017.
5. Ch Satyanarayana M Radhika Mani, B N Jagadesh, “Python programming”, Universities Press 2018.

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https://www.edx.org/learn/python/lehigh-university-python-fundamentals-for-business-analytics?index=product&queryID=cf1b725c99ee1d700d9962cec2550aa2&position=2&results_level=first-level-results&term=tuples&objectID=course-6ecf17c1-263a-4f54-840e-9aae41d66897&campaign=Python+Fundamentals+for+Business+Analytics&source=edX&product_category=course&placement_url=https%3A%2F%2Fwww.edx.org%2Fsearch

Course outcomes

CO-1	To apply Python programming skills to real-world datasets, including importing data from various sources, analyzing data, and deriving actionable insights.
CO-2	Ability to manipulate and analyze data along with data cleaning, filtering, sorting, merging, grouping, and summarizing
CO-3	Ability to integrate Python with external tools and platforms commonly used in analytics, such as SQL databases, Excel, web APIs, and cloud services.
CO-4	To Develop critical thinking skills by identifying data analysis challenges, selecting appropriate Python techniques and effectively solving problems using analytical approaches
CO-5	Ability to communicate analytical findings effectively through written reports, presentations, and data visualizations, showcasing insights derived from Python-based analytics projects

MBA (BUSINESS ANALYTICS) III-Semester					
Core 3	**Course code:**30133	**Machine Learning**	**T**	**Credits:4**	**Hours:4 / week**
Pre-requisite	**Basic Knowledge of Machine Learning**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. To understand the basic principles and concepts of machine learning. 2. To have a deeper knowledge about various machine learning algorithms, models and ensemble methods 3. To get familiar with the mathematical foundations behind machine learning algorithms, including linear algebra, calculus, probability theory, and optimization techniques.				

UNIT-1 BAYESIAN DECISION THEORY AND NORMAL DISTRIBUTION:
Machine perception - feature extraction - classification, clustering, linear and logistic regression – Types of learning - Bayesian decision theory - classifiers, discriminant functions, and decision surfaces -univariate and multivariate normal densities - Bayesian belief networks.

UNIT-2 CLASSIFICATION ALGORITHMS
Perceptron and back propagation neural network - k-nearest neighbor rule. Support vector machine: multi-category generalizations – Regression Decision trees: classification and regression tree – random forest.

UNIT-3 COMPONENT ANALYSIS AND CLUSTERING ALGORITHMS:
Principal component analysis - Linear discriminant analysis - Independent component analysis. K-means clustering - fuzzy k-means clustering – Expectation-maximization algorithm-Gaussian mixture models –auto associative neural network.

UNIT-4 SUPERVISED AND UNSUPERVISED:
Convolution neural network (CNN) -Layers in CNN - CNN architectures. Recurrent Neural Network -Applications: Speech-to-text conversion-image classification time series prediction

UNIT-5 COMBINING MULTIPLE LEARNERS:
Generating diverse learners - model combination schemes - voting - error-correcting output codes - bagging - boosting - mixture of experts revisited - stacked generalization - fine-tuning an ensemble – cascading

References

1. Ethem Alpaydin, “Introduction to Machine Learning”, 3rd Edition, MIT Press, 2014.
2. C. M. Bishop, “Pattern Recognition and Machine Learning”, Springer, 2006.
3. Kevin P. Murphy, “Machine Learning: A Probabilistic Perspective”, MIT Press, 2012.
4. Navin Kumar Manaswi, “Deep Learning with Applications using Python”, A press, New York, 2018.

Related online content (MOOC, Swayam, NPTEL Website etc.)

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https://www.edx.org/learn/machine-learning/massachusetts-institute-of-technology-machine-learning-with-python-from-linear-models-to-deep-learning?index=product&queryID=c42c50294cf4cf8640a90cb5fbcc8bff&position=1&results_level=first-level-results&term=machine+learnin&objectID=course-4c70ad9b-9602-49af-bf00-83fa4bf47708&campaign=Machine+Learning+with+Python%3A+from+Linear+Models+to+Deep+Learning&source=edX&product_category=course&placement_url=https%3A%2F%2Fwww.edx.org%2Fsearch

Course outcomes	
CO-1	Ability to apply machine learning techniques to solve real-world problems in various domains like healthcare, finance, e-commerce, marketing etc.
CO-2	Will gain Knowledge of techniques for hyper parameter tuning and optimization to improve model performance.
CO-3	To implement machine learning algorithms and techniques using popular libraries and frameworks.
CO-4	Ability to evaluate and validate machine learning models using appropriate metrics and techniques, such as cross-validation, confusion matrices, ROC curves.
CO-5	To handle missing values, encode categorical variables, scale numerical features, and extract relevant features from raw data.

MBA (BUSINESS ANALYTICS) III-Semester					
Core 4	**Course code:** 30134	**Business Law And Ethics**	**T**	**Credits:4**	**Hours:4 / week**
Pre-requisite	**Basic Knowledge of Business Law And Ethics**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. Aims to equip students with the knowledge, skills, and ethical awareness necessary to navigate legal and ethical challenges in the business environment 2. To learn about the principles of contract law, remedies for breach, elements of a valid contract and the implications of various types of contracts. 3. To understand the legal framework governing business activities, including the sources of law, the court system, and the role of regulatory agencies.				

UNIT-1 LEGALITIES OF BUSINESS

Law of Contract- Scope of the contract law, Indian Contract Act, Elements of contract- Offer and acceptance, Lawful consideration, Capacity to contract, Free Consent, Lawful object, Discharge of contract: Free and genuine consent, Contract of Indemnity and Guarantee: Contract of Agency, Sale of Goods Act, 1930 Transfer of Title, Performance of the contract, Remedies for breach of contract.

UNIT-2 OTHER IMPORTANT BUSINESS LAWS

Law relating to negotiable instruments- Negotiable Instrument act , 1881, The consumer protection Act, 1986, Consumer problems and Legal Remedies, Banking services, Medical services, Law on patents, Law on trademarks, Law of Designs.

UNIT-3 BUSINESS ETHICS AND VALUES

Nature of Business Ethics and Values- Significance and types of values, Ethics and Religion, Culture and Ethics, Social culture and Individual Ethics, Factors Influencing Business Ethics, Ethics as strategy, Ethics of Great Philosophers – Albert. Z. Carr, Aristotle, Niccolo Machiavelli, Karl Marx, Suntzu- The art of war of Sun Tzu, Might-equals-right approach of Karl Marx

UNIT-4 ETHICAL DECISION MAKING

Ethical Decision Making- Difficulties in Ethical Decision Making, Power and Politics in organizations- Bases and sources of power, Coalitions, Managing Ethics: Ethics codes – Comparison of codes of Ethics, Codes of Conduct, codes of Practice, Ethics Programs-Kohlberg‟s Study and Business Ethics, Laws of Enforcing Ethical Conduct: Laws and Ethics-Justice –Theory of Natural Law, Law as a guide to Moral Choice, Role of the Government of India in Enforcing Ethical Behaviour.

UNIT-5 BUSINESS LAW AND ETHICS FOR GLOBAL BUSINESS

Ethics in HRM, Human Resources Laws in various countries, privacy Issues Ethics in Marketing Ethics in Finance Accounting and Investment Decision : Disclosure Norms, Insider Trading Norms, Disclosure in Financial Statements, Ethics in Production and Operations Management, Business laws for global businesses, Case studies.

References

1. Johnson, Larry & Phillips, Bob. (2003). Absolute Honesty: Building a Corporate Culture That Values Straight Talk and Rewards Integrity. AMACOM
2. Zak, Paul J. and Jensen, Michael C. (2008). Moral Markets: The Critical Role of Values In the Economy. Princeton University Press.
3. Freidman, Daniel. (2008). Morals and Markets: An Evolutionary Account of the Modern World. Palgrave Macmillan.
4. Gintis, Herbert et al. (2006). Moral Sentiments and Material Interests: The Foundations of Cooperation in Economic Life (Economic Learning and Social Evolution). MIT Press.
5. Kapoor. (2006). Elements of Mercantile Law. Sultn.
6. Majumdar, A. K. & Kapoor, G. K. (2010). Company Law. Taxmann Publications Pvt. Ltd.
7. Majumdar, A. K.. (2007). Company Law and Practice. Taxmann.
8. Nambyar, P. K. (2006). Principles of Indian Law of Contract. Bibliolife.

9. Bajaj, Amit. (2006). Law of Negotiable Instruments. Macmillan Publishers India.

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Course outcomes

CO-1	To understand the fundamental legal principles and key ethical theories that are relevant for business decision making.
CO-2	Awareness of the implications of non-compliance and unethical conduct for individuals and organizations.
CO-3	To apply legal and ethical concepts to analyze and evaluate business situations, identifying relevant legal issues, ethical dilemmas, and potential courses of action.
CO-4	To gain an understanding of regulatory compliance requirements in various industries,
CO-5	To analyze real-world case studies and scenarios involving legal and ethical issues in business, applying legal and ethical principles to identify issues, evaluate alternatives, and recommend solutions.

MBA (BUSINESS ANALYTICS) III-Semester					
Core 5	**Course code:**30135	**Data Mining For Business Analytics**	**P**	**Credits:4**	**Hours:6/ week**
Pre-requisite	**Basic Knowledge of Data Mining For Business Analytics**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. To Provide an overview of data mining concepts, techniques, and methodologies, emphasizing their application in business analytics. 2. To enable to preprocess data effectively by handling missing values, outliers, noise, and redundant features, ensuring data quality and suitability for analysis. 3. To evaluate and validate data mining models using appropriate performance metrics and validation strategies to ensure model robustness.				

UNIT-1INTRODUCTION TO DATA MINING

Data Mining for Business Intelligence-Data Mining Goes to Hollywood!-Data Mining Concepts and Definitions, Definitions, Characteristics- Benefits, How Data Mining Works, Data Mining Applications.

UNIT-2 DATA MINING PROCESS

Data Mining Process-Step 1: Business Understanding , Step 2: Data Understanding, Step 3: Data Preparation, Step 4: Modeling Building, Step 5: Testing and Evaluation, Step 6: Deployment- Other Data Mining Standardized Processes and Methodologies.

UNIT-3 DATA MINING METHODS

Data Mining Methods- Classification- Estimating the True Accuracy of Classification Models- Cluster Analysis for Data Mining.

UNIT-4 ARTIFICIAL NEURAL NETWORKS

Association Rule Mining- Artificial Neural Networks for Data Mining- Elements of ANN- Applications of ANN.

UNIT-5 DATA MINING SOFTWARE TOOLS

Data Mining Software Tools, Data Mining Myths and Blunders.

References

1. Turban, Sharda Efraim; Ramesh, Dursun Delen and King, David. (2011). *BusinessIntelligence: A Managerial Approach*, 2nd Edition. Publisher: Prentice Hall.
2. Han, Jiawei and Kamber, Micheline. (2012). *Data Mining: Concepts and Techniques*, 3rd edition. Morgan Kaufman Publishers.
3. Tang, P.N., Steinback, M. and Kumar, V. (2006). *Introduction to Data Mining*. Addison Wesley.
4. Myatt, Glenn and Johnson, Wayne. (2009). *Making Sense of Data II.* John Wiley& Sons.
5. Rajaraman, Anand. (2011). *Mining of Massive Datasets.* New York: Cambridge University.

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https://onlinecourses.nptel.ac.in/

Course outcomes	
CO-1	To perform exploratory data analysis techniques and gain insights into data distributions, patterns, and relationships using summary statistics, visualization tools, and correlation analysis.
CO-2	To apply supervised and unsupervised learning techniques in real life business scenarios
CO-3	Students will gain proficiency in web mining techniques for extracting information from web data sources, including web content mining, web structure mining, and web usage mining
CO-4	To apply data mining techniques to real-world business problems and case studies, demonstrating their ability to extract actionable insights, solve business challenges
CO-5	To build predictive models using techniques such as decision trees, logistic regression, neural networks, support vector machines (SVM), and ensemble methods.

MBA (Business Analytics) III-Semester				
Core 6	**Course code:**30136	**Internship and Report (Internal)**	**Credits:4**	**Hours:8**
Evaluation	❖ The performance of students under this course will be assessed by the Faculty Guide and the report submitted by the students will be evaluated by the Faculty Guide and the Head of the Department for 75 marks. ❖ A Viva-Voce will be conducted by a panel consisting of the HOD ,Faculty Guide and External Examiner jointly for 25 marks. ❖ If a student fails to complete the internship / or fails to submit the report in time, he / she has to redo the internship the ensuing semester or academic year as decided by the institution. ❖ If a student scores less than 40 % (i.e., less than 30 marks) in the Training Report Valuation, he / she has to redo in the ensuing semester as decided by the institution. ❖ If a student scores 40 % or above in the Internship Report, but scores less than 40 % (10 marks) in the Viva Voce, he / she has to reappear for the Viva Voce in the ensuing semester as decided by the institution.			

IV Semester

MBA (BUSINESS ANALYTICS) IV-Semester					
Core 1	**Course code:** 30141	**Data Visualization**	**T**	**Credits:4**	**Hours:4 / week**
Pre-requisite	**Basic Knowledge of Data Visualization**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. To introduce students to the principles and best practices of data visualization, including the importance of visual clarity, accuracy, and effectiveness in conveying information. 2. To understand different types of data representation techniques, including charts, graphs, maps, diagrams, and info graphics, and discuss their suitability for different types of data and analysis tasks. 3. To introduce interactive visualization techniques, such as zooming, filtering, and animation, to enable users to explore and interact with data dynamically.				

UNIT-1 INTRODUCTION

Context of data visualization – Definition, Methodology, Visualization Design objectives. Key Factors – Purpose, visualization function and tone, visualization design options – Data representation, Data Presentation, Seven stages of data visualization, widgets, and data

UNIT-2 VISUALIZING DATA METHODS

Mapping - Time series Connections and correlations – Scatter plot maps - Trees, Hierarchies and Recursion - Networks and Graphs, Info graphics

UNIT-3 VISUALIZING DATA PROCESS

Acquiring data, - Where to Find Data, Tools for Acquiring Data from the Internet, Locating Files for Use with Processing, Loading Text Data, Dealing with Files and Folders, Listing Files in a Folder, Asynchronous Image Downloads, Advanced Web Techniques, Using a Database, Dealing with a Large Number of Files. Parsing data - Levels of Effort, Tools for Gathering Clues, Text Is Best, Text Markup Languages, Regular Expressions (regexps), Grammars and BNF Notation, Compressed Data, Vectors and Geometry, Binary Data Formats, Advanced Detective Work.

UNIT-4 INTERACTIVE DATA VISUALIZATION

Drawing with data – Scales – Axes – Updates, Transition and Motion – Interactivity - Layouts –Geo mapping – Exporting, Framework

UNIT-5 DATA VISUALIZATION TOOLS

Tableau- Introduction to Tableau, Data Connection, Tableau Interface and Basic Chart Types, Working with Metadata, Visual Analytics- Tableau Part 2: Mapping, Calculations, Dashboard and Stories- Power BI: Introduction, Interface, Data Connections, Data Transformation, Advance Data Transformation.

References

Scott Murray, “Interactive data visualization for the web”, O‟Reilly Media, Inc., 2nd edition, 2017.

Ben Fry, “Visualizing Data”, O‟Reilly Media, Inc., 2007.

Matthew Ward, Georges Grinstein and Daniel Keim, “Interactive Data Visualization Foundations, Techniques, Applications”, 2010

Robert Spence, “Information visualization – Design for interaction”, Pearson Education, 2007.

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Course outcomes	
CO-1	Demonstrate an understanding of the fundamental principles and best practices of data visualization, including visual perception, effective design, and communication of insights.
CO-2	Ability to explore and analyze datasets visually, identifying patterns, trends, outliers, and relationships using appropriate visualization techniques
CO-3	To structure and present data-driven stories using visualizations, guiding the audience through a narrative that effectively communicates insights and supports decision-making
CO-4	To get equipped to create effective and engaging data visualizations that facilitate data exploration, analysis, communication, and decision-making in diverse fields and industries
CO-5	To create maps and other geospatial visualizations to analyze and communicate spatial patterns and trends.

MBA (BUSINESS ANALYTICS) IV-Semester					
Core 2	**Course code:**30142	**Predictive Modelling Using SAS**	**T**	**Credits:4**	**Hours:4 / week**
Pre-requisite	**Basic Knowledge of Predictive Modelling Using SAS**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. Provide an overview of predictive modeling concepts, techniques, and methodologies, emphasizing their application in data-driven decision-making 2. Familiarize participants with the SAS environment, including SAS programming language, SAS Enterprise Guide, and SAS Studio, as well as relevant SAS procedures and functions for predictive modeling tasks				

UNIT-1INTRODUCTION

Introduction to SAS Enterprise Miner- Accessing and Assaying Prepared Data: Creating a SAS Enterprise Miner project, library and diagram, defining a data source- Exploring a data source.

UNIT-2 INTRODUCTION TO PREDICTIVE MODELING WITH DECISION TREES

Cultivating decision trees- Optimizing the complexity of decision trees- Understanding additional diagnostic tools.

UNIT-3INTRODUCTION TO PREDICTIVE MODELING WITH NEURAL NETWORKS AND OTHER MODELING TOOLS

Introduction to neural network models- Input selection- Stopped training- Other modeling tools.

UNIT-4 MODEL ASSESSMENT

Model fit statistics, Statistical graphics- Adjusting for separate sampling, Profit matrices, Model Implementation: Internally scored dataset, Score code Units- Introduction to Pattern Discovery: Cluster analysis, Market basket analysis .

UNIT-5SPECIAL TOPICS

Ensemble models, Variable selection, Categorical input consolidation, Surrogate models.

References

1. Sarma, Kattamuri S. (2013). *Predictive Modeling with SAS Enterprise Miner: PracticalSolutions for Business Applications*, (2nd Ed.). Prentice Hall.
2. Haykin, Simon O. (2008). Neural Networks & Learning Machines, (3rd ed.)

Related online content (MOOC, Swayam, NPTEL Website etc.)

https://www.edx.org/learn/predictive-analytics/indian-institute-of-management-bangalore-predictive-analytics?index=product&queryID=5aad0c3aff991cf5b56056a3342faa9f&position=1&results_level=first-level-results&term=SAS&objectID=course-77bc8f62-8fbf-411f-9dc3-13069d00a506&campaign=Predictive+Analytics&source=edX&product_category=course&placement_url=https%3A%2F%2Fwww.edx.org%2Fsearch

https://swayam.gov.in/nc_details/NPTEL

Course outcomes	
CO-1	To gain proficiency in using SAS software for predictive modeling tasks, including data preparation, exploratory data analysis, model building, evaluation, and deployment.
CO-2	To be able to select appropriate predictive modeling techniques and algorithms using SAS, and evaluate model performance using appropriate metrics and procedures.
CO-3	Ability to interpret predictive models and extract actionable insights from model outputs, understanding the relationships between predictor variables and the target variable.
CO-4	To apply predictive modeling techniques using SAS to real-world datasets and business problems
CO-5	To clean, transform, and format raw data for predictive modeling, handle missing values, outliers, and data inconsistencies, and perform data imputation and feature engineering.

MBA (BUSINESS ANALYTICS) IV-Semester					
Core 3	**Course code:** 30143	**Deep Learning**	**T**	**Credits:4**	**Hours:4 / week**
Pre-requisite	**Basic Knowledge of Deep Learning**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. Introduce to various types of neural network architectures, including feed forward neural networks, convolutional neural networks (CNNs), recurrent neural networks (RNNs), and deep learning models for sequence modeling and generation. 2. To equip students with skills in preprocessing and feature engineering for deep learning tasks, including data normalization, dimensionality reduction, and data augmentation.				

UNIT-1HISTORY OF DEEP LEARNING

A Probabilistic Theory of Deep Learning- Back propagation and regularization, batch normalization- VC Dimension and Neural Nets-Deep Vs Shallow Networks, Convolutional Networks- Generative Adversarial Networks (GAN), Semi- supervised Learning.

UNIT-2 NEURAL NETWORK

What is a Neural Network? Parts of Neural Network, Input, Hidden and Output Node, What's happening inside Neural Network? Forward and Backward Propagation, Cost Function & Types of Cost Function, Project - Digit Recognition using Neural Networks

UNIT-3INTRODUCTION TO COMPUTER VISION

Convolutional Neural Network (CNN), What is CNN? CNN Architecture, Intro to OpenCV, What is Computer Vision? Object Detection, Intro to Transfer Learning, Applications, Project - Image Classification using CNN

UNIT-4 INTRODUCTION TO TEXT ANALYTICS & NLP

What is NLP? Typical NLP Tasks, Sentence Segmentation &Tokenisation, Stemming, Named Entity Recognition (NER), Stop Words Removal (English), Applications of NLP, Introduction to the NLTK Library, Processing Raw Text, Bag-of-Words (BoW), TF-IDF, Recurrent Neural Network, what is RNN? RNN Architecture, Project - Textual Document Classification using RNN

UNIT-5APPLICATIONS OF DEEP LEARNING

Images segmentation – Object Detection – Automatic Image Captioning – Image generation with Generative adversarial networks – Video to Text with LSTM models – Attention models for Computer Vision - Named Entity Recognition – Opinion Mining using Recurrent Neural Networks – Parsing and Sentiment Analysis using Recursive Neural Networks – Sentence Classification using Convolutional Neural Networks – Dialogue Generation with LSTMs.

References

1. CosmaRohillaShalizi, “Advanced Data Analysis from an Elementary Point of View”, 2015.
2. Deng & Yu, “Deep Learning: Methods and Applications”, Now Publishers, 2013.
3. Ian Goodfellow, YoshuaBengio, Aaron Courville, “Deep Learning”, MIT Press, 2016.
4. Michael Nielsen, “Neural Networks and Deep Learning”, Determination Press, 2015.

Related online content (MOOC, Swayam, NPTEL Website etc.)

https://www.edx.org/learn/engineering/purdue-university-introduction-to-deep-learning-2?index=product&queryID=976ec29189a737b45fc9d6b9e0b303d6&position=3&results_level=first-level-results&term=DEEP+LEARNING&objectID=course-3418eea6-3281-402a-90b2-253253f24a51&campaign=Introduction+to+Deep+Learning&source=edX&product_category=course&placement_url=https%3A%2F%2Fwww.edx.org%2Fsearch

https://swayam.gov.in/nc_details/NPTEL	
Course outcomes	
CO-1	To have a solid understanding of the fundamental concepts and principles of deep learning, including neural network architectures, activation functions, optimization algorithms, and regularization techniques.
CO-2	To be proficient in using deep learning frameworks to implement and train deep neural networks for various tasks.
CO-3	To design and implement different types of neural network architectures and deep learning models for sequence modeling and generation.
CO-4	To enable optimization algorithms and techniques for training deep neural networks and advanced optimization.
CO-5	Allow to explore applications of deep learning in various domains such as computer vision, speech recognition, recommendation systems, and healthcare, and understand the potential and limitations of deep learning in these domains.

MBA (BUSINESS ANALYTICS) IV-Semester					
Core 4	**Course code: 30144**	**Digital Strategy Planning & Execution**	**T**	**Credits**	**Hours / week**
Pre-requisite	**Basic Knowledge of Digital Strategy Planning & Execution**		**4**		**4**
Course Objectives	1. To provide a comprehensive understanding of the digital ecosystem, including various platforms, technologies, and trends shaping the digital landscape. 2. To measure the performance of digital strategies and campaigns using relevant metrics and analytics tools, and how to interpret data to assess effectiveness and inform future strategy iterations.				

UNIT-1 FOUNDATIONS OF DIGITAL STRATEGY

Introduction to Digital Strategy-Definition and importance of digital strategy-Evolution of digital strategy in business-Strategic Management Concepts-Basics of strategic planning-Integrating digital strategy into overall business strategy-Digital Landscape Analysis-Market research in the digital age-Analyzing industry trends and competitive landscapes

UNIT-2 DIGITAL STRATEGY FORMULATION

SWOT Analysis in the Digital Context-Applying SWOT analysis to digital environments-Identifying strengths, weaknesses, opportunities, and threats in digital channels-Customer Journey Mapping-Understanding and mapping the customer journey online-Touchpoints and interactions in the digital customer experience-Target Audience Segmentation-Identifying and targeting specific audience segments online-Personalization and customization in digital marketing

UNIT-3 DIGITAL MARKETING CHANNELS

Integrated Digital Marketing Channels-Overview of major digital marketing channels (SEO, SEM, Social Media, Email)-Multichannel and omni-channel strategies-Content Strategy and Marketing-Creating and curating content for digital channels-Content marketing best practices-Social Media Strategy-Developing a social media strategy for brand building-Social media listening and engagement

UNIT-4 DIGITAL ANALYTICS AND MEASUREMENT

Key Performance Indicators (KPIs) in Digital Strategy-Identifying and measuring relevant KPIs-Metrics for assessing digital strategy effectiveness-Data-Driven Decision Making-Utilizing analytics tools for informed decision-making-A/B testing and optimization

UNIT-5- IMPLEMENTATION AND EXECUTION

Budgeting and Resource Allocation-Allocating resources for digital marketing initiatives-Budgeting for paid advertising and campaigns-Project Management in Digital Campaigns-Planning and executing digital campaigns-Agile project management principles in digital strategy-Risk
Management in Digital Strategy-Identifying and mitigating risks in digital initiatives-Crisis management in the digital realm

References

1. "Digital Marketing Strategy: An Integrated Approach to Online Marketing" by Simon Kingsnorth
2. "Digital Marketing Strategy: Text and Cases" by Glen L. Urban and E. Laird Landon Jr.
3. "Digital Marketing Excellence: Planning, Optimizing and Integrating Online Marketing" by Dave Chaffey and PR Smith
4. "The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns" by Ian Dodson
5. "Digital Marketing: Strategy, Implementation and Practice" by Dave Chaffey and Fiona Ellis-Chadwick
6. "Epic Content Marketing: How to Tell a Different Story, Break through the Clutter, and Win More Customers by Marketing Less" by Joe Pulizzi

Related online content (MOOC, Swayam, NPTEL Website etc.)

https://onlinecourses.nptel.ac.in/

https://www.edx.org/learn/business-strategy/babson-college-digital-strategy-and-action?index=product&queryID=b767c7524daa32417bfcb909e91e1731&position=4&linked_from=autocomplete&c=autocomplete

Course outcomes

CO-1	Gain proficiency in identifying target audiences and segments for digitalinitiatives.
CO-2	To conduct market research and identify opportunities and threats in the digital marketplace.
CO-3	Understand the importance of SMART (Specific, Measurable, Achievable, Relevant, Time-bound) goals in digital strategy planning
CO-4	To use web analytics tools, campaign tracking tools, and other measurement techniques to evaluate the effectiveness of digital initiatives.
CO-5	To understand the role of digital strategy in achieving organizational goals and objectives in the digital age.

MBA (BUSINESS ANALYTICS) IV-Semester					
Core 5	**Course code:**30145	**Big Data Analytics-Lab**	**P**	**Credits:4**	**Hours:6 / week**
Pre-requisite	**Basic Knowledge of Big Data Analytics**		**Syllabus Revised**		**2023-2024**
Course Objectives	1. To acquire, preprocess, and integrate data from various sources, including structured, semi-structured, and unstructured data, into a unified format suitable for analysis 2. To understand real-time analytics techniques for processing and analyzing streaming data. 3. To gain insights and findings derived from big data analytics through clear and compelling visualizations, reports, and presentations.				

UNIT-1INTRODUCTION

Big Data Overview- Definition with Real Time Examples- How BigData is generated with Real Time Generation- Use of BigData- Future of BigData!-the challenges for processing big data, technologies supporting big data,

UNIT-2 HADOOP

Why Hadoop?- What is Hadoop?- Hadoop vs RDBMS, Hadoop vs BigData- Brief history of Hadoop- Problems with traditional large-scale systems-Requirements for a new approach- Anatomy of a Hadoop cluster

UNIT-3HADOOP DISTRIBUTED FILE SYSTEM (HDFS)

Concepts & Architecture, Data Flow (File Read , File Write), Fault Tolerance- Shell Commands, Java Base API, Data Flow Archives, Coherency, Data Integrity- Role of Secondary Name Node

UNIT-4 MAP REDUCE

Theory-Data Flow (Map – Shuffle - Reduce)-MapRed vs MapReduce APIs- Programming [Mapper, Reducer, Combiner, Partitioner]

UNIT-5HIVE, PIG AND HBASE

Architecture, Installation, Configuration, Hive vs RDBMS, Tables, DDL & DML, Partitioning & Bucketing, Hive Web Interface, Why Pig, Use case of Pig, Pig Components-Data Model, Pig Latin-RDBMS Vs NoSQL, HBase Introduction, HBase Components Scanner, Filter Hbase POC, Introduction to MongoDB.

References

1. Tan, Pang-Ning, Steinbach, Michael and Kumar, Vipin. (2005). *Introduction to Data Mining*. Addison-Wesley.
2. Lin, Jimmy and Dyer, Chris. (2010). *Data-Intensive Text Processing with MapReduce.* Morgan & Claypool Publishers.
3. Rajaraman, Anand and Ullman, Jeff. (2008). *Mining of Massive Datasets*. New York: Cambridge Press.
4. Han, Jiawei and Kamber, Micheline. (2000). *Data Mining: Concepts and Techniques*. The Morgan Kaufmann Series in Data Management Systems, Jim Gray, Series Editor Morgan Kaufmann Publishers.

Related online content (MOOC, Swayam, NPTEL Website etc.) https://www.edx.org/learn/big-data/university-of-adelaide-big-data-analytics?index=product&queryID=f44ae510f11d7972a18caea3c0fe9095&position=2&results_level=first-level-results&term=big+data+analysis&objectID=course-b8eac1f6-1911-4a4a-aec3-39ed9945422f&campaign=Big+Data+Analytics&source=edX&product_category=course&placement_url=https%3A%2F%2Fwww.edx.org%2Fsearch https://www.edx.org/learn/big-data/ibm-big-data-hadoop-and-spark-basics?index=product&queryID=c900252ddd2f8a9c612f8a7997de75ae&position=1&results_level=first-level-results&term=Hadoop&objectID=course-8bccbfd0-e361-4223-8153-2f7532be1aff&campaign=Big+Data%2C+Hadoop%2C+and+Spark+Basics&source=edX&product_category=course&placement_url=https%3A%2F%2Fwww.edx.org%2Fsearch	
Course outcomes	
CO-1	To explore and visualize large-scale datasets using appropriate tools and techniques to identify patterns, trends, and insights that support decision-making..
CO-2	To understand techniques for scalable data processing to handle large volumes of data efficiently
CO-3	To perform real-time analytics on streaming data using technologies, enabling timely decision-making and response to changing data.
CO-4	To develop skills in effectively communicating insights and findings from big data analytics to diverse stakeholders through clear and compelling visualizations, reports, and presentations.
CO-5	To apply statistical and machine learning techniques to analyze big data, including descriptive statistics, regression analysis, classification, clustering, and anomaly detection

MBA (Business Analytics) IV-Semester				
Core 6	**Course code:**30146	**Project Report and Viva Voce**	**Credits:4**	**Hours:8**
Evaluation	❖ The performance of students under this course will be assessed by the Faculty Guide and the report submitted by the students will be evaluated by the Faculty Guide and the Head of the Department for 75 marks. ❖ A Viva-Voce will be conducted by a panel consisting of the HOD ,Faculty Guide and External Examiner jointly for 25 marks. ❖ If a student fails to complete the project or fails to submit the report in time, he / she has to redo the internship the ensuing semester or academic year as decided by the institution. ❖ If a student scores less than 40 % (i.e., less than 30 marks) in the Project Report Valuation, he / she has to redo in the ensuing semester as decided by the institution. ❖ If a student scores 40 % or above in the Project Report, but scores less than 40 % (10 marks) in the Viva Voce, he / she has to reappear for the Viva Voce in the ensuing semester as decided by the institution.			

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PG Programme

19.1 Passing minimum

- A candidate shall be declared to have passed each course if he/she secures not less than 40% marks in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 50% in the aggregate, taking Continuous Assessment and End Semester Examinations marks together.
- The candidates not obtain 40% in the Internal Assessment are permitted to improve their Internal Assessment marks in the subsequent semesters (2 chances will be given) by writing the CIA tests and by submitting assignments.
- Candidates, who have secured the pass marks in the End-Semester Examination and in the CIA but failed to secure the aggregate minimum pass mark (E.S.E + C I.A), are permitted to improve their Internal Assessment mark in the following semester and/or in University examinations.
- A candidate shall be declared to have passed the Project/Dissertation/Internship if he/she gets not less than 40% in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 50% in the aggregate in each of the Project/Dissertation/Internship Report and Viva-Voce.
- A candidate who gets less than 50% in the Project/Dissertation/Internship Report must resubmit the thesis. Such candidates need to take again the Viva-Voce on the resubmitted Project report.

19.2 Grading

The following table gives the marks, Grade points, Letter Grades, and classifications meant to indicate the overall academic performance of the candidate.

Conversion of Marks to Grade Points and Letter Grade (Performance in Paper/ Course)

RANGE OF MARKS	GRADE POINTS	LETTER GRADE	DESCRIPTION
90 - 100	**9.0 – 10.0**	**O**	**Outstanding**
80 - 89	**8.0 – 8.9**	**D+**	**Excellent**
75 - 79	**7.5 – 7.9**	**D**	**Distinction**
70 - 74	**7.0 – 7.4**	**A+**	**Very Good**
60 - 69	**6.0 – 6.9**	**A**	**Good**
50 - 59	**5.0 – 5.9**	**B**	**Average**
00 - 49	**0.0**	**U**	**Re-appear**

ABSENT	**0.0**	**AAA**	**ABSENT**

a) Successful candidates passing the examinations and earning a GPA between 9.0 and 10.0 and marks from 90 – 100 shall be declared to have Outstanding (O).

b) Successful candidates passing the examinations and earning a GPA between 8.0 and 8.9 and marks from 80 - 89 shall be declared to have Excellent (D+).

c) Successful candidates passing the examinations and earning a GPA between 7.5 – 7.9 and marks from 75 - 79 shall be declared to have Distinction (D).

d) Successful candidates passing the examinations and earning a GPA between 7.0 – 7.4 and marks from 70 - 74 shall be declared to have Very Good (A+).

e) Successful candidates passing the examinations and earning a GPA between 6.0 – 6.9 and marks from 60 - 69 shall be declared to have Good (A).

f) Successful candidates passing the examinations and earning a GPA between 5.0 – 5.9 and marks from 50 - 59 shall be declared to have an Average (B).

g) Candidates earning a GPA between 0.0 and marks from 00 - 49 shall be declared to have Re-appear (U).

h) Absence from an examination shall not be taken as an attempt.

From the second semester onwards the total performance in a semester and continuous performance starting from the first semester are indicated respectively as Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA). These two are calculated by the following formulate

GRADE POINT AVERAGE (GPA) = $\Sigma_i C_i \ G_i / \Sigma_i C_i$

GPA = Sum of the multiplication of Grade Points by the credits of the courses
Sum of the credits of the courses in a Semester

19.3 Classification of the final result

CGPA	Grade	Classification of Final Result
9.5 – 10.0	**O+**	First Class – Exemplary*
9.0 and above but below 9.5	**O**	

8.5 and above but below 9.0 8.0 and above but below 8.5 7.5 and above but below 8.0	**D++** **D+** **D**	First Class with Distinction*
7.0 and above but below 7.5 6.5 and above but below 7.0 6.0 and above but below 6.5	**A++** **A+** **A**	First Class
5.5 and above but below 6.0 5.0 and above but below 5.5	**B+** **B**	Second Class
0.0 and above but below 5.0	**U**	Re-appear

The final result of the candidate shall be based only on the CGPA earned by the candidate.

a) Successful candidates passing the examinations and earning a CGPA between 9.5 and 10.0 shall be given Letter Grade (O+), and those who earned a CGPA between 9.0 and 9.4 shall be given Letter Grade (O) and declared to have First Class – Exemplary*.

b) Successful candidates passing the examinations and earning a CGPA between 7.5 and 7.9 shall be given Letter Grade (D), those who earned a CGPA between 8.0 and 8.4 shall be given Letter Grade (D+), those who earned a CGPA between 8.5 and 8.9 shall be given Letter Grade (D++) and declared to have First Class with Distinction*.

c) Successful candidates passing the examinations and earning a CGPA between 6.0 and 6.4 shall be given Letter Grade (A), those who earned a CGPA between 6.5 and 6.9 shall be given Letter Grade (A+), those who earned a CGPA between 7.0 and 7.4 shall be given Letter Grade (A++) and declared to have First Class.

d) Successful candidates passing the examinations and earning a CGPA between 5.0 and 5.4 shall be given a Letter Grade (B), and those who earned a CGPA between 5.5 and 5.9 shall be given a Letter Grade (B+) and declared to have passed in Second Class.

i) Candidates who earned a CGPA between 0.0 and 4.9 shall be given Letter Grade (U) and declared to have Re-appear.

e) Absence from an examination shall not be taken as an attempt.

CUMULATIVE GRADE POINT AVERAGE (CGPA) = $\Sigma_n \Sigma_i C_{ni} \; G_{ni} / \Sigma_n \Sigma_i C_{ni}$

CGPA = Sum of the multiplication of Grade Points by the credits of the entire Programme

Sum of the credits of the courses for the entire Programme

Sum of Grade Points X credits of the entire Programme

Where '**Ci**' is the Credit earned for Course i in any semester; '**Gi**' is the Grade Point obtained by the student for Course i and 'n' refers to the semester in which such courses were credited.

CGPA (Cumulative Grade Point Average) = Average Grade Point of all the Courses passed starting from the first semester to the current semester.

Note: * The candidates who have passed in the first appearance and within the prescribed Semesters of the PG Programme are alone eligible for this classification.