

MANGALORE UNIVERSITY

B.COM BUSINESS DATA ANALYTICS

3 Years (SEP-2024)

(In Accordance with the Common Regulation of Mangalore University)

PROGRAM: **B.COM (BUSINESS DATA ANALYTICS)**

1. Preamble:

Business Analytics are the skills, technologies, and practices for continuous iterative exploration and investigation of past business performance. This helps the concerned to gain insight and drive business planning through proper decision. Using data analytics is a very effective way to have influence in an organization. Business analytics focuses on developing new insights and understanding of business performance based on data and statistical methods, which facilitate the decision-making process. It is also a powerful tool into day's market place. Across industries, organizations generate vast amount of data which, in turn, has heightened the need for professionals who are data literate and know how to interpret and analyze that information.

According to a recent study by MicroStrategy, around 60% of companies worldwide are using data to boost process and cost efficiency, drive strategy and change, and monitor and improve financial performance. Over the next three years and beyond, 71 percent of global enterprises predict the reinvestments in analytics will accelerate stupendously. In the light of this trend, gaining an in-depth understanding of business analytics can be a way to advance one's career and make better decisions in the workplace. The benefits of business analytics include more informed decision-making, greater revenue, and improved operational efficiency. Over and above, analytics can be used to fine-tune business operations. Taking a data-driven approach business can come with tremendous upside, but many companies report that the numbers of skilled employees in analytics roles are in short supply. LinkedIn lists business analysis as one of the skills companies need most in 2019, and the Bureau of Labor Statistics projects operations research analyst job to grow by 27 percent through 2026, it will shoot up to 70%. As such there is a plethora of career opportunities for the skilled human resources having formal education in Data Analytics. Business analytics course is intended to empower professionals employed in the areas of Finance, Marketing, Economics, Statistics, Computer Science, Mathematics, IT, Research, Commodity markets and soon.

There are various methods of business analysis: and they are descriptive, diagnostic, predictive, and prescriptive. Data Analytics is an emerging trend and moves rapidly, but it lacks qualified professionals, hence greater demand for them. In a bid to bridge the gap between demand and supply of professional in data science, many programs are in the pipeline at various levels and one such program is B.COM in Business Data Analytics.

The B.COM program for a duration of 4 Years help aspirants to learn the concepts and methods of business analytics, model to solve decision problems in different settings, identify appropriate courses of action for a given managerial situation, viable solutions to decision making problems, aptitude for business improvement, collaborative learning, techniques of database design, administration and implementation data collection capabilities and decision- support systems, relationship between price and cost business intelligence capabilities, construct data models and proto types to gain stakeholder support or achieve business objectives, organize big data sets into a structures, articulate assumptions, analyses, and interpretations of data in an oral format, RDBMS and SQL queries and software system to manage finance, human resources operations, R Programming, data ware housing and mining etc.

The program is an embodiment of UG and PG with multidisciplinary holistic education. The National Education Policy (2019) has stressed that the apt skills are imperative need to cope with challenges of 21st Century and resolved to develop specialized knowledge with disciplinary rigor. It is to bring equity, efficiency and academic excellence in the higher education system of the country. This includes innovation, improvement in course-curricula, and paradigm shift in learning, teaching pedagogy, evaluation and education system. Learner-centric, flexibility and mobility with the fragrance of professionalism and contemporary skills empower them to operate efficiently in their sphere. The rigorous activities in the specialized field will help creating qualified professionals in Business data Analytics. The program with Business Data Analytics and regulations of the program are in conformity with notification of Mangalore University and common curriculum notified by Karnataka State Higher Education Council. The program is revolving around discipline courses, discipline specific courses, skill enhancement courses, vocational courses; courses under open elective, and the courses to enrich value based and skill based to inculcate community development for sustainability. B.COM Business Data Analytics program offer extraordinary job opportunities in diverse sectors.

2. Program:

B.COM Business Data Analytics

2(a) Program objectives

The objectives of B.COM Business Data Analytics are:

- To recognize, understand and apply the language, theory and models of the field of business analytics
- To foster an ability to critically analyze, synthesize and solve complex unstructured business problems
- To encourage an aptitude for business improvement, innovation and entrepreneurial action
- To share experience to enhance the benefits of collaborative learning
- To instill a sense of ethical decision-making and a commitment to the long-run welfare of both organizations and the communities they serve

- To gain insight and drive business planning through proper decision.
- To use data analytics very effectively thereby to influence in an organization.
- To focus on developing new insights and understanding of business performance based on data and statistical methods.
- To derive meaning from data, thereby to make informed business decisions

2(b) Program Outcomes (PO):

After studying the program, the Graduates will be attributed to;

- Critically apply the concepts and methods of business analytics
- Identify, model and solve decision problems in different settings
- Interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity
- Create viable solutions to decision making problems
- Get acquainted with Financial Securities Analytics
- Plan the implementation of a BI system.

2(c) Program Specific Outcomes (PSO):

After completion of the program, the Graduates will be attributed to;

- **PSO1:** Equip with the tools necessary to effectively meet the challenges of human resources in ever-changing business climate.
- **PSO2:** Maintain interpersonal skills and develop leadership qualities to work in and with teams in organizations.
- **PSO3:** Draw the fundamental elements of relational database management systems
- **PSO4:** Apply the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
- **PSO5:** Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
- **PSO6:** Differentiate supervised machine learning from unsupervised machine learning
- **PSO7:** Apply regression, classification and clustering techniques of Machine learning.
- **PSO8:** Discover basics of deep Learning, specialized field of machine learning, artificial intelligence (AI)
- **PSO9:** Implement the concept of virtualization for the development of Cloud Computing
- **PSO10:** Explore some important cloud computing driven commercial systems.
- **PSO11:** Create and edit visualizations with R
- **PSO12:** Demonstrate the use of mathematical software and solve simple mathematical problems

3. Definitions:

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|---------------------------|-----------------------------------|
| a. Titleoftheprogram | :B.COMDataAnalytics |
| b. Nature: | :Skill/Vocationalbased(NEP-2020) |
| c. PeriodofStudy | :4years |
| d. Scheme | :Semester– (8 semesters) |
| e. CreditSystem | :Credit basedaspertheUGC/NEP-2020 |
| f. DomainSubject | :BusinessDataAnalytics(BDA) |
| g. ModeofTeachingLearning | :FacetoFaceandOnline Mode |
| h. Admission Cycle | :Juneand January |
| i. Schemeof Instruction | :English |

B.Com (Business Data Analytics)(Final)

Semester I								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Language–I	Lang	4	80	20	100	3
2		Language–II	Lang	4	80	20	100	3
3	B Com 1.1	Quantitative Techniques – I	Core	5	80	20	100	5
4	B Com 1.2	Principles and Practice of Management	Core	5	80	20	100	5
5	BCom 1.3	Financial Accounting – I	Core	5	80	20	100	5
6.	B.Com 1.4	Individual and Team Management / Fundamentals of Business Analytics	Optional	4	80	20	100	3
7		Constitutional Values	Compulsory	3	40	10	50	2
Sub–Total				30				26

Semester II								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Language–I	Lang	4	80	20	100	3
2		Language–II	Lang	4	80	20	100	3
3	BCom 2.1	Quantitative Techniques – II	Core	5	80	20	100	5
4	BCom 2.2	Foundation of Commerce – IIA (Insurance, Banking & Finance)	Core	5	80	20	100	5
5	BCom 2.3	Financial Accounting – II	Core	5	80	20	100	5
6.	BCom 2.4	Data base Management System and SQL	Optional	4	80	20	100	3
		Environmental studies	Compulsory	3	40	10	50	2
Sub–Total				30				26

B Com 1.1:QUANTITATIVE TECHNIQUES-I

5 Hours per week

60 Hours

COURSE OUTCOMES:

After completing the course, the student will be able to

1. Study concerning metrics of dispersion, mean, median, and mode.
2. Connect a formal quantitative approach to problem solving and decision-making.
3. Utilize the idea of index numbers to comprehend current market conditions
4. Compute the ratios, proportions, discounts, and percentages that are utilized in business.

COURSE CONTENTS:

Module	Particulars	No of hrs
Module 1	Introduction and Basic Concepts Introduction to Statistics: Meaning and Definitions (Singular and Plural), Types of Data and Variables, Measures of Central Tendency-Arithmetic Mean-Properties (Combined Mean Included), Median and Mode.	12
Module 2	Descriptive Statistics of Univariate Distribution Measures of dispersion, Absolute and Relative Measures, Types- Range, Quartile deviation, Mean deviation, Standard Deviation. Coefficient of Variation and Variance	12
Module 3	Index Numbers Meaning and Uses of Index Numbers, Steps in the Construction of Index Numbers, Construction of Index Numbers: Simple and Weighted Average of Price Relatives, Weighted Aggregative Method: Laspeyres's, Paasche's, and Fisher's Index Numbers Tests of consistency of index number, time reversal, and factor reversal. Consumer Price Index Number: Aggregative Expenditure Method and Family Budget Method.	12
Module 4	Number System and Indices Introduction- Natural Numbers, Whole Numbers, Integers- Prime numbers -Rational and Irrational Numbers (simple Problems on sum of Natural numbers.....)Real Number- HCF and LCM calculations. Indices and Laws of Indices: Problems	12
Module 5	Commercial Arithmetic Concept of Percentages- problems on Profit/Loss,, Simple	

	Interest, Compound Interest, Nominal and Effective Rate of Interest, Cash Discount and Trade Discount.	12
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Skill Development Activities

1. Visit the college office and collect data regarding student strength, results, etc. and analyze the same using statistical techniques.
2. Visit any Commercial Bank in your area and collect the information about types of loans and the rates of interest on loans
3. Use consumer price data to create and interpret index values in order to analyze inflation and economic trends.
4. Any other Activities which are relevant to the course

Books for Reference:

1. Business Statistics- S.C. Gupta
2. Business Mathematics- D.C. Sanchete & V.K. Kapoor, Sulthan Chand and sons
3. Business Statistics- S.P. Gupta, S.E. Gupta, B.N. Gupta
4. Business Mathematics-Madappa and Sridhara Rao, Shubhash Publications
5. Business Mathematics, S. N Doraira, United Publication
6. Financial Mathematics, A Lenin Jyothi, Himalaya Publications, Mumbai
7. Business Statistics & Mathematics, Vittal
8. Business Mathematics – S.P Gupta
9. Business Mathematics – Dr. Amarnath Dikshit & Dr. Jinendra Kumar Jain, Himalaya Publications
10. Business Mathematics – Kashyap Trivedi, Chirag Trivedi, Pearson Publications
11. Comprehensive Statistical Methods – P.N. Arora, Sumeet Arora & S. Arora, Chand Publications

B Com 1.2 : Principles and Practice of Management

CourseCredits	No.ofHours perweek	TotalNo. ofTeaching Hours
5 Credits	5 Hrs	60Hrs.
Pedagogy: Classroomslecture,Casestudies,Groupdiscussion,Seminar,technologyenabledlearning and field work etc.		
CourseOutcomes: Oncompletionofthecourse,thelearnerwillbeableto: • Meetthechallengesofmodernmanagementin21stcentury • PerformasManagerforcompanytoensureeffectiveutilizationofscarceresources • Applyvarious theoriesofmanagementinthe functioningofanorganization • Makeouttheimportanceofplanningandexercisecontrolproperly • Outlinetheplanningandcontrollingprocesses. • Identifydifferenttypesofplansandcontrolsystemsemployedbyorganizations. • Convincetheindividualandorganizationaleffectsassociatedwithgoalsettingand planning. • Organizethestaffing properlytokeepthemcontentedandatsametimetoenhance productivity • Contribute to increased employee goal commitment, motivation, and performance in the organization		
Syllabus		
UnitI Natureandprocessofmanagement-meaninganddefinitionof management - managementprocess-Managementasascience,anartoraprofession- differencebetweenadministrationand management - significance of management; Managerialfunctions-briefexplanationofvariousmanagementfunctions-managerialskills- role of managers.		10Hours
UnitII Managementthought: Classical Theory- Scientific Management - elements-principles criticisms; Administrative Management- principles of modern management; Contributions of Henry Fayol, Maslow,Hurge Burge, F W Tailor, CK Praha lad, Malcolm glad Well, Michael Porter, Rathana Tataand Peter F.Drucker.		10 Hours
UnitIII Planning- meaning, definition, features, benefits and limitations of planning- process of planning - how to make planning effective- types of plans-types/ kinds/ forms of planning;MBO-processimportance-makingMBOeffective;DecisionMaking-meaning- process- Typesofdecisions.		8 Hours
UnitIV Organization-meaning-definition-features-principlesoforganization-process-Types oforganization-line-functional-line&staff-matrix(inbrief)-project(inbrief)-committees (inbrief)-Organizationchart-meanings&content-Organizationmanual-meanings &content-Authority &power-(concepts only)-Delegation of authority-principles – Centralization &Decentralization-Span of management		10 Hours

UnitV	8 Hours
Staffing – meaning & significance - Process of staffing (in brief); Leadership – meaning, qualities–Styles of leadership. Motivation–meaning–importance and objectives, Morale and Productivity–Communication–importance and objectives, Barriers in effective communication; Types of communication	
UnitVI	10Hours
Coordination and Control–Coordination–Meaning–Need–Principles–Control–Meaning–Process – Control Methods or techniques; Management Audit concept - SWOT, KAIZEN, TQM, MIS, ISO, Change Management, Knowledge Management (Meaning only). Emerging Trends in management	
Skill Developments Activities: • The manager is able to see an entire concept, analyze and diagnose a problem, and find creative solutions. • The human or the interpersonal skills enable the manager to make use of human potential in the company and motivate the employees for better results. • Planning is the process of formulating a set of actions or one or more strategies to pursue and achieve certain goals or objectives with the available resources. • Clearly established communication channels in an organization allow the manager to collaborate with the team, prevent conflicts, and resolve issues as they arise. • Manager to possess great decision-making skills, as it often dictates his/her success in achieving organizational objectives. • Manager to have good delegation abilities to achieve optimal results and accomplish the required productivity results. • Motivation helps bring forth the desired behavior or response from the employee's or certain stakeholders. • Management position demands specific competency for achieving measurable results and succession the job. • Fun activity can easily be customized and used in leadership development, building teams, building brands, corporate culture, you can probably find out even to adapt training • A pilot officer of Air India needs technical skill, beside conceptual skill	
References: 1. Harold Koontz & Heinz Weihrich, Principles of management- Essential of Management, Tata McGraw Hill, 10th edition (2015) 2. K.S. Adiga, Principles of Management–Shubha Prakashana 3. L.M. Prasad, Principles and Practice of Management, Sultan Chand & Sons, 6th Edition, (2013) 4. T.N. Chhabra, Principles and Practice of Management, Dhanpat Rai & Co Publication, (2018) 5. V.S.P. Rao Principles and Practice of Management, Konark Publishers, 1996 6. V.S.P. Rao V Hari Krishna, Management: Text and Cases-Excel Publications (2005)	

B Com 1.3: Financial Accounting - I

5 Hours per week

60 Hours

COURSE OUTCOMES:

After completing the course, the student will be able to

1. Understand the need of maintaining proper books of records of financial nature for an organisation.
2. Prepare financial statements of a sole trader to assess the financial position and results.
3. Understand the meaning and financial records of a non-trading concerns.

COURSE CONTENTS:

Module	Particulars	No of Hrs
Module 1	Introduction to Accounting: Meaning of Accounting – Basic Terms in Accounting – Entity, Business Transaction, Capital, Drawings, Assets, Liability, Debtor, Creditor, Stock, Purchases and Sales. Accounting Concepts – Meaning – Types (Business Entity, Money Measurement, Going Concern, Accounting Period, Cost, Dual Aspect, Revenue Recognition, Matching, Accrual, Objective Evidence) Accounting Conventions – Conservatism, Consistency, Full Disclosure and Materiality. Basis of Accounting – Cash & Accrual, Systems of Accounting – Single & Double Entry. Rules of Debit & Credit as per American Approach - Accounting Equation Accounting Cycle – Journal, Ledger & Trial Balance	12
Module 2	Depreciation Accounting: Meaning of depreciation and amortisation, Causes, Factors determining economic life of the asset – Methods of charging depreciation Accounting treatment for charging depreciation under Straight Line Method & Written Down Value Method - Change in Method of Depreciation	12
Module 3	Final Accounts of Sole Trading Concerns: Preparation of Trading & Profit & Loss Account and Balance Sheet of a Sole Trader. Adjustments – Closing Stock, Outstanding & Prepaid Expenses, Accrued Incomes & Incomes Received in Advance, Bad Debts & Provisions for Doubtful Debts, Provision for discount on Debtors, Depreciation, Interest on Capital & Drawings, Manager's Commission, Goods Sent on Sale or Return basis, Treatment of deferred revenue expenditure.	12
Module 4	Final Accounts of Not for Profit Organisations: Meaning & Characteristics of Non- Profit Organisations Meaning of Capital & Revenue Income & Expenditure – Deferred Revenue Expenditure	12

	Meaning of Receipts & Payment Account, Income & Expenditure Account and Balance Sheet. Differences between Income & Expenditure Account and Receipt and Payments Account. Preparation of Income & Expenditure and Balance Sheet when Receipts & Payment Account is given with adjustments for existing and new organisations.	
Module 5	Bank Reconciliation Statement: Meaning & Reasons for difference between Cash book and Pass book Balance Problems on preparation of BRS (problems when cash book and pass extract is given to be included)	12

Skill Development:

1. Visit minimum three Sole Trading Concern and examine its accounting practices.
2. Identify a non-trading concern and assist them in preparing its financial statements.
3. Apply depreciation methods to real life scenarios.
Develop numerical, analytical and decision-making abilities

Books for Reference:

1. ICAI Study Materials on Principles & Practice of Accounting, Accounting and Advanced Accounting
2. SP Iyengar, Advanced Accounting, Sultan Chand & Sons, Vol. 1
3. Advanced Accounting Shukla M.C., Grewal T.S., S Chand, Vol. 1
4. Advanced Accounting, Gupta R.L., Sultan Chand & Sons, Vol. 1
5. Advanced Accounting Jain & Narang, Kalyani Publishers, Vol. 1
6. S.N. Maheshwari, and. S. K. Maheshwari. Financial Accounting. Vikas Publishing House, New Delhi.
7. B.S. Raman, Financial Accounting Vol. I & II, United Publishers & Distributors.

Note: Latest edition of text books may be used.

B Com 1.4: Individual and Team Management

4 Hours per week

48 Hours

COURSE OUTCOMES:

After studying this course the students can

1. Become effective in their day to day transactions.
2. Develop interpersonal skills
3. Enhance individual resourcefulness in all walks of life and thereby improve the quality of their thinking and become self-motivated in their personal dealings.

COURSE CONTENTS:

Module	Particulars	No of hrs
Module 1	Managerial Effectiveness and Inter-Personal Skills: Meaning of Managerial Effectiveness, Essentials for Managerial Effectiveness and Importance of ME for an organization. Meaning of Inter- personal skills – Importance, Essentials IP skills – communication, clarity, empathy, etc., developing IP Skills – Assertiveness, Responsibility, Managing conflicts & factors hampering IP Skills, self-development goals & its relevance in the present time	12
Module 2	Stress & Time Management: Meaning of Stress, Sources of stress – Internal, external and types, Effects of stress & burnout – effect on environment and personal life. Strategies for coping with Stress – Avoiding and fighting stress, maintaining Work life balance – its importance and benefits. Importance of Time Management, Analysis of Time – time logs, Time wasters & time Abusers, Planning Time and Resources – Need & strategies for planning time – Matrix of Time Management, Setting Goals and objectives – Advantages and setting SMART goals and planning to achieve goals – Scheduling, Delegating and controlling time-wasters.	12
	Creativity & Emotional Intelligence in Management: Meaning of Creativity & Innovation, Stage of Creativity, Importance of Creativity, Barriers to Creative thinking, Developing Creativity and techniques of enhancing creativity – Brainstorming, Six Thinking Hats & Mind Mapping.	

Module 3	Nature of Emotional Intelligence (EI), Definition of emotions – empathy, fear, anger and depression, Components of Emotional Intelligence, analysing the importance of emotions in the workplace – Negative and Positive emotions and Characteristic features of people with High IQ or High EQ.	12
Module 4	Working in Teams: Meaning of Team & Team work, Importance of teamwork, Challenges of working in a Team, Characteristics of a successful team, Team dynamics vs Group dynamics, Employee engagement, 5C's & 4P's of Team building, Collaboration – meaning, benefits and tips to improve workplace collaboration.	12

Skill development:

1. Collecting the list of Best practices of enhancing managerial effectiveness of a few corporates.
2. Analysing the different techniques used by corporates in promoting work life balance amongst its employees.
3. Preparing a Time log of 24 hours for every student and providing feedback as to its improvement for better productivity
4. Application of Creativity techniques in a learners day to day social transactions
5. Team building games can be conducted on specific characteristics of a successful Team.

Books & Materials for Reference: (Text Books and Websites for additional reading)

1. The Effective Executive: Peter Drucker – Harper Collins
2. Workplace Stress – Concepts and Cases: Gopal V V – ICFAI University Press
3. Managing Time: David Fontana – BPS Books, New Delhi
4. The Seven Habits of Highly Effective People: Stephen R Covey – Simon & Schuster
5. The On-time, On Target Manager: Ken Blanchard and Steve Gottry – Harper Collins
6. Getting Things Done – The Art of Stress Free Productivity: David Allen – Penguin Books
7. Lifelong Creativity – An Unending Quest: Pradip N Khandwalla, Tata McGraw Hill.
8. Emotional Intelligence: Why It Can Matter More Than IQ: Daniel Goleman, Bantam Books.
9. How to Win Friends and Influence People: Dale Carnegie – Simon & Schuster
10. <https://www.sessionlab.com/blog/team-building-activities/>
11. <https://asana.com/resources/team-building-games>
12. <https://teambuildinghub.com/team-building/activities-games/quick-team-building/>
13. <https://teambuilding.com/blog/team-building-games>

B Com 1.4: Fundamentals of Business Analytics

Objectives: In the business world, competition is the main factor, intelligence is prerequisite for understanding and meeting competition. AI and BI are essential learning and analytical concepts. So that, students enhance their intelligence and they can take-up career in these fields.

Outcomes : Familiarizes the students with the areas applications of artificial and business intelligence.

Unit -1: Artificial Intelligence: Meaning, scope, nature of business problem solving, cognitive science, knowledge acquisition techniques, knowledge sharing and transformation of knowledge.

Unit -2: Knowledge System: Inheritable knowledge, machine and robotic knowledge, knowledge mapping systems, knowledge V/s skills, re-skills, knowledge creation with the help of AI, forward and backward thinking, value systems and mind mapping techniques, human capital analytics.

Unit -3: AI: Intelligent system, areas of AI, Psychological modeling, improving efficiency, business model analysis, appreciative intelligence, benchmarking analysis and business model analysis.

Unit -4: Intelligent Cycle: Intelligent cycle components, forms of analysis: facts, perception, beliefs, assumptions, projections and synthesis. Intelligent decision-making, intelligent solution to business problems, unlock value of business, avoiding analysis pitfalls and developing analytical fitness through AI, recent trends in AI.

Unit -5: Business Intelligence and Data Analytics: Meaning, importance in business decision-making interpretation of big data, business intelligence and competitive intelligence in business, business analytics, BI capabilities, business solutions, Data mining and scope, recent trends in BI and big data analytics.

References:

- Anu Singh Lather, Anil S Saini and Sanjay Dhingra: Business Intelligence and Data ware housing: New Age Publishing House.
- Barr et al (1981) Handbook of Artificial Intelligence: Morgan Kaufmann.
- Business Intelligence: Concepts, methods, tools and application by MAIR (Management Association of Information Resources) IGI Global Publisher 2015.
- Charniak and McDermott: Introduction to Artificial Intelligence (1985) Addison Wesley.
- Craig S. Fleisher and Babette E. Bensoussan: Business and Competitive Analysis, Pearson.
- Elaine Rich and Kevin Knight: Artificial Intelligence, Second edition: McGraw-Hill –Inc.
- Genesereth & Nilsson (1987): Logical Foundation of Artificial Intelligence: Morgan Kaufmann.
- John Boyer et al: Business Intelligence Strategy: A Practical Guide for achieving business intelligence excellence: McGraw Hill.
- John Brooks: Business Adventures: John Murracy Learning Private Information and Business Development.
- Nilsson (1980): Principles of Artificial Intelligence: Morgan Kaufmann.
- Rajiv Sabherwar, et al, Business Intelligence Practice: Practices, Technologies and Management, Willey.
- Shapiro and Eckroth (1987): Encyclopedia of Artificial Intelligence: Addison Wesley.
- Webber B. L and Nilsson: Reading in Artificial Intelligence: Morgan Kaufmann.
- Winston (1984): Artificial Intelligence: Addison Wesley.

Semester II

B.Com 2.1 :QUANTITATIVE TECHNIQUES – II

5 Hours per week

60 Hours

COURSE OUTCOMES:

After completing the course, the student will be able to

1. Establish relationships between variables in real-world situations by using methods like regression and correlation.
2. Use the ideas from probability distributions to solve practical issues.
3. Predict future results using time series
4. Recognise the relationship between two variables and how to use ratios and proportions to express it.

COURSE CONTENTS:

Module	Particulars	No of hrs
Module 1	Descriptive Analysis of Bivariate Data: Correlation- Meaning and Definition, Linear and Non-linear correlation, Correlation and causation, Scatter Diagram, Karl Pearson's Co-efficient of Correlation, Calculation and Spearman's Rank Correlation.	12
Module 2	Regression Analysis: Regression Analysis- Principle of Least Squares and Regression lines, Regression equations and estimation. Properties of Regression Coefficients.	12
Module 3	Time Series Analysis and Theory of Probability: Meaning and uses of Time Series, Various components of Time series, determination of Trend using Moving Average and Least square method Theory of Probability: Some important concepts, Addition Theorem of probability for two non-mutually and mutually exclusive events - Multiplication theorem of probability for dependent and independent events. Simple problems	12
Module 4	Ratios and Proportions and Theory of Equations: Definition- Equality of Ratio- Simple Problems. Proportion- definition- Direct Proportion-Inverse Proportion- Continued Proportion- Problems on proportions Equations: Definition - Degree of Equation. Types of Equation - Linear equations and its solution-Simultaneous linear equations-Quadratic equation-Solution by method of factorisation and formula method.	12
	Permutation and Combinations: Factorial Notations- permutations of n different things-Circular	

Module 5	permutations-Permutation of things not all different- Restricted Permutation-Simple problems. Combinations- Simple problems based on formula.	12
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Skill Development Activities

1. Determine the strength and direction of the relationship between advertisement expenditure and sales income by computing the correlation coefficient.
2. Use historical sales data to create a simple linear regression model to predict future sales based on advertisement expenditure.
3. Utilize a time series model to analyze monthly sales data to identify trends and seasonal patterns and generate a forecast for the upcoming year.
4. Instruct the students to use their knowledge of ratios to determine how much of each ingredient they would require to make the recipe for exactly the number of people in the group
5. The task involves resolving a shelf arrangement issue to maximize visibility by utilizing permutations and combinations to explore various arrangements

Books for Reference:

1. Business Statistics- S.C. Gupta
2. Business Mathematics- D.C. Sanchete & V.K. Kapoor, Sulthan Chand and sons
3. Business Statistics- S.P. Gupta, S.E. Gupta, B.N. Gupta
4. Business Mathematics-Madappa and Sridhara Rao, Shubhash Publications
5. Business Mathematics, S. N Dorairaj, United Publication
6. Financial Mathematics, A Lenin Jyothi, Himalaya Publications, Mumbai
7. Business Mathematics – S.P Gupta
8. Business Mathematics – Dr. Amarnath Dikshit & Dr. Jinendra Kumar Jain, Himalaya Publications
9. Business Mathematics – Kashyap Trivedi, Chirag Trivedi, Pearson Publications
10. Comprehensive Statistical Methods – P.N. Arora, Sumeet Arora & S. Arora, Chand Publications

B.Com 2.2 :Foundation of Commerce – II (Insurance, Banking and Finance)

5 Hours per week

60 Hours

COURSE OUTCOMES:

After completing the course, the student will be able to

1. Understand the concepts of Insurance, Banking and Finance.
2. Apply Fundamental conceptual knowledge to analyse and interpret relevant areas in Insurance, Banking and Finance.
3. Learn new reforms and technology in Insurance and Banking sector.
4. Evaluate the investment opportunities using risk and return

COURSE CONTENTS:

Module	Particulars	No of Hrs
Module 1	Basics of Insurance: Concept of Risk, Assurance and Insurance – Meaning – Definition – Functions – Need and Importance, Principles of Insurance Contract – Insurance Industry in India – IRDAI- Insurance Sector reforms – Bank assurance. Claims management – Claim settlement – legal framework – Third Party Administration.	12
Module 2	Types of Insurance: Life Insurance – Features – Principles – Life Insurance Products – Policy Conditions – Application and Acceptance – Assignment – Nomination – Surrender – Re-Insurance in life Insurance. Marine Insurance – Features – Policy Conditions – Clauses and covers. Fire Insurance – Motor vehicle Insurance. Health Insurance – Clauses – Health Insurance Frauds – Personal accident Insurance – Group Insurance.	12
Module 3	Basics of Banking: Origin – Evolution of banking – Definition of term bank and banking – Commercial Banks. Functions – Primary and subsidiary functions. Co-operative Banking – Primary – Central and State Co-operatives. Banks – Functions and Features. Principles of Investment Policy- Basic and allied principles. Financial Inclusion-Meaning, need and Importance. Cheques - Meaning and definition - features - Types and Crossing of Cheques. Paying Banker and Collecting Banker (Meaning only) Dishonour of Cheques- Reasons for Dishonour.	12
Module 4	Innovative and Digital Banking: ATM – Debit Cards – Credit Cards – Smart Cards – Internet Banking – Mobile Banking – Wallet Banking – Digital Cash – Core Banking System – NEFT – RTGS – IFSC – UPI – IMPS – AEPS - CIBIL- CTS – ECS –	12

	MICR.	
Module 5	Basic Financial concepts: Introduction to Risk & Return: Meaning of Risk and Return, Measurement of return- Return on Investment, Types of Risk- systematic & unsystematic risk, Risk analysis- Expected return, Standard deviation and Coefficient of Variation. Risk -Return trade off.	12

Skill development activities:

1. Learners should collect data from the company reports and analyse the risk and return
2. Learners can enhance knowledge by collecting Banking product details by visiting the bank.
3. Learners can understand Risk assessment, policy analysis and interpretations by taking a print of any insurance policy.
4. Learners can have ideas on technology usage in banking by using their mobile.

Reference Books:

1. Principles and practice of Life Insurance – P PeryaSwamy.
2. Insurance Principles and Practice – Mishra M N.
3. Insurance and Risk Management – P K Gupta.
4. A Text Book on principles and Practice of life Insurance – G Krishna Swamy.
5. Financial Management: Text, Problems and Cases" by M.Y. Khan and P.K. Jain.
6. Indian Banking by R Parmeshwaram.
7. Banking Theory and Practice by P N Varshney.
8. Banking Theory, Law and Practice by KPM Sundharam and P N Varshney.
9. Principles and Practice of Banks by Indian Institute of Banking and Finance.
10. Digital Banking by Indian Institute of Banking and Finance.

B.Com 2.3 :Financial Accounting - II

5 Hours per week

60 Hours

COURSE OUTCOMES:

After completing the course, the student will be able to

1. Learn about Accounting Standards and Indian Accounting standards.
2. Understand the recent developments in the field of financial accounting.
3. Learn to deal with special transactions and situations while preparing financial statements.

COURSE CONTENTS:

Module	Particulars	No of Hrs
Module 1	Accounting Standards and Recent Developments in Accounting: Accounting Standards - Meaning, Procedure to issue – Applicability Indian Accounting Standards – Meaning – Applicability Recent Trends in Accounting –Computerised Accounting - Big data Analytics, Cloud Computing in Accounting, Accounting with drones.	12
Module 2	Conversion of Single Entry into Double Entry System: Introduction – Meaning – Limitation of Single-Entry System – Differences between Single Entry & Double Entry System Problems on Conversion of Single Entry into Double Entry (preparing Opening Statement of Affairs, Cash Book, Total Debtors Account, Total Creditors Account, Trading & Profit & Loss Account and Balance Sheet).	12
Module 3	Hire Purchase Accounting: Introduction, Meaning of Hire Purchase, Features Terms used – Hire Purchaser, Hire Vendor, Cash Price, Hire Purchase Price, Total Interest, Down Payment & Net Cash Price Accounting for Hire Purchase transactions in the books of Hire Purchaser (when Cash Price and Rate of Interest is given) under Accrual System only. Repossession – Complete & Partial	12
Module 4	Departmental Accounts: Meaning, Types of Departments, Advantages, Basis of Allocation of common expenses and income among various departments Departmental Accounts – Columnar Trading & Profit & Loss Account, General Profit & Loss Account and Consolidated Balance Sheet Treatment of Inter Departmental Transfers at Cost and Selling Price.	12
Module 5	Royalty Accounts: Meaning – Types of Royalty. Terminologies – Lessor, Lessor, Minimum Rent,	12

	Short working – Recoupment of Short working. Accounting Treatment in the books of Lessee with opening Minimum Rent Account.	
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Skill Development:

1. Collect a copy of Hire Purchase agreement and examine the various terminologies.
2. Identify a business where royalty accounting is applied.
3. Learn to prepare financial statement with incomplete records using imaginary figure.
4. Know the differences between Accounting Standards and Indian Accounting Standards.

Books for Reference:

1. ICAI Study Materials on Principles & Practice of Accounting, Accounting and Advanced Accounting.
2. SP Iyengar, Advanced Accounting, Sultan Chand & Sons, Vol. 1
3. Advanced Accounting Shukla M.C., Grewal T.S., S Chand, Vol. 1
4. Advanced Accounting, Gupta R.L., Sultan Chand & Sons, Vol. 1
5. Advanced Accounting Jain & Narang, Kalyani Publishers, Vol. 1
6. S.N. Maheshwari, and. S. K. Maheshwari. Financial Accounting. Vikas Publishing House, New Delhi.
7. B.S. Raman, Financial Accounting Vol. I & II, United Publishers & Distributors.

Note: Latest edition of text books may be used.

B Com 2.4 : Data base Management System and SQL

CourseCredits	No.ofHoursperweek	TotalNo.ofTeachingHours
3Credits	4Hrs.	56Hrs.
Pedagogy: Classroom lectures, Case studies, Group discussions, Seminar, technology enable learning fieldwork etc.		
CourseOutcomes: On successful completion of the course, the Students will be able to; - Identify, analyze and define database objects, - Enforce integrity constraint on a database using RDBMS. - Use Structured Query Language (SQL) for database manipulation. - Design and build simple database systems - Develop application to interact with databases.		
Syllabus		
Unit-1: Introduction to Database Management Systems:		10 Hours
Meaning and Definition of Database, Objectives of Database, Features of Database, Conceptual Data modeling – File Organization – Data Structure – Data models: HDBMS, NDBMS, RDBMS, OODBMS, Desktop and Server-level Database, Recent Trends in Database.		
Unit-2: Database Design:		8 Hours
Relational Data Model – Relational Algebra – ER Diagrams – Data Dictionary – Normalization – Boyce Codd Normal Forms – Integrity – Relational Database Languages – Database Administration – File Structures and Indexing. Object oriented concepts – Structure – Models and Databases – Object lifecycle modeling – Objects, Classes, and Patterns – Object interaction modeling – Object Oriented Design – UML,		
Unit-3: Operation and Management:		10 Hours
Client / Server and Databases – Data Warehousing – Query Processing – Concurrency Management – Heterogeneous and Homogenous Systems – Distributed Databases – Controls – Atomicity, Recovery – Security, Back-up and Recovery, Distributed Databases: Structure of Distributed Database; Trade-offs in Distributing the Database, Advantages of Data Distribution, Disadvantages of Data Distribution; Design of Distributed Data bases, Data Replication, Data Fragmentation		
Unit-4: SQL Structured Query Language:		12 Hours
Relational Query Languages, the SQL Query Language, DDL – CREATE Table, ALTER Table, DROP Table, CREATE Index, DROP Index etc., DML – SELECT, UPDATE, DELETE, INSERT INTO etc., DATA – TYPE, Constraint on Attributes – Referential Integrity Constraint, Where-Clause – Arithmetic and Relational Operators		
Unit-5: Practical Problems and Lab-Work on SQL:		16 Hours

Skill Developments Activities:

- Enterprise Data Warehouse Management
- HTML
- SQL
- Email Marketing Software: Eloqua, etc.
- CRM/Automation System: Salesforce, etc.
- Project Management
- Unix Shell Scripting
- ETL
- Data Quality, Mapping, and Profiling
- Agile and Waterfall SDLC Models

