PSG College of Arts & Science

An Epitome of Quality Learning

Since 1947

B.Com
(BUSINESS ANALYTICS)

2018 - 2021

DEPARTMENT OF COMMERCE
B.COM (BUSINESS ANALYTICS)

VISION

To be a vibrant and innovative centre for education, to equip students with knowledge and skills in the field of Commerce, inculcate values, identify hidden talents, provide opportunities for students to realize their full potential and thus shaping them for global employment, professional excellence, entrepreneurial business ventures and above all responsible citizen of India.

MISSION

- Improving the standard of the courses through effective curriculum and innovative teaching methods.
- Developing the personality of students in a holistic manner by combining the skills and values.
- Providing state -of-the - art technology and facilities of global standards.
- Developing the students for Higher Education Employability, Business ventures and Research Programmes.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO 1 : Demonstrate ability to adapt to a rapidly changing environment by having learned and applied new skills and new competencies

PEO 2 : Acquire the spirit of compassion, kinship and commitment for National Harmony.

PEO 3 : Progressively adopt and learn continuously through ICT modules.

PEO 4 : Programme designed to provide knowledge on Accounting, Statistics, Computer science and Mathematics at par with emerging trends in Big Data Analytics.

PEO 5 : Programme facilitates to develop analytical skills through Data Mining, RProgramming, Visualization Techniques, Statistics and knowledge dissemination through Seminars, Guest Lectures and Conferences which provides exposure to meet the challenges of competitive global scenario.

PROGRAMME OUTCOMES

PO 1: Become knowledgeable in the field of commerce blended with Business analytics and apply the conceptual, interpersonal and managerial skills for decision making in a business enterprise.

PO 2: Gain Analytical skills in the areas of Accountancy, Statistics, Mathematics and related Business Analytic Courses.

PO 3: Understand and appreciate Professional Ethics, Community Living and Nation Building Initiatives.

PO 4: Exhibit skills and knowledge for pursuing competing programmes in Business Analytics and related PG programmes

PO 5: Build competency to solve the complex problems under uncertainties using advanced tools for analysis of data.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Apply the knowledge of Data Analytics in the domains of Marketing, Finance and Logistics to compete in the global business environment.

PSO 2: Solve the complex problems in the field of commerce by applying the expertise in Business Analytics with an understanding of the societal, legal and cultural impacts.

PSO3: Excel in Data analytics with the integrated knowledge of Commerce, Statistics, Mathematics and Computer Science.

PSO 4: Form a part of member in a team with right attitudes.

B.COM (BUSINESS ANALYTICS)
SCHEME OF EXAMINATIONS
(For Students admitted from the Academic Year 2018 - 2019 and Onwards)

CODE NO	SUBJECT	Exam Duration (Hrs)	Max. Marks			Credit points
			CA	CE	Total	
First Semester						
	Part – I					
18LAU01	Tamil / Hindi / French – I	3	25	75	100	3
	Part – II					
18EU01	Communicative English – I Interpersonal Communication	3	25	75	100	3
	Part – III					
18CBA01	Financial Accounting – I	3	25	75	100	3
18CBA02	Statistics for Business Analytics (**Statistics Dept)**	3	25	75	100	3
18CBA03	Computer Practical-I **(Excel)** **(Computer Science Dept)**	3	40	60	100	3
18CBA04	**Interdisciplinary Course** Mathematical Techniques For Business Analytics (**Allied-Mathematics Dept)**	3	25	75	100	5
Second Semester						
	Part – I					
18LAU02	Tamil / Hindi / French – II	3	25	75	100	3
	Part – II					
18EU02	Communicative English – II Academic Communication	3	25	75	100	3
	Part- III					
18CBA05	Financial Accounting – II	3	25	75	100	3
18CBA06	Applied Business Statistics **-** I (**Statistics Dept)**	3	25	75	100	3
18CBA07	Computer Practical – II **(SPSS)** (**Statistics Dept)**	3	40	60	100	3
18CBA08	**Interdisciplinary Course** Optimization Techniques**(Allied-Mathematics Dept)**	3	25	75	100	5
	Part- IV					
18AECU01	**Ability Enhancement Compulsory Course – I** Value Education	-	**100**	-	**100**	2

CODE NO	SUBJECT	Exam Duration (Hrs)	Max. Marks			Credit points
			CA	CE	Total	
Third semester						
	Part- III					
18CBA09	Corporate Accounting	3	25	75	100	4
18CBA10	Business Organization and Management	3	25	75	100	3
18CBA11	NoSQL-MongoDB **(Computer Science Dept)**	3	25	75	100	3
18CBA12	Applied Business Statistics -II **(Statistics Dept)**	-	**100**	**-**	**100**	3
18CBA13	Computer Practical-III **(NoSQL-MongoDB) (Computer Science Dept)**	3	40	60	100	3
18CBA14	**Interdisciplinary Course** Econometrics **(Allied Statistics Dept)**	3	25	75	100	5
	Part-IV					
18AECU02	**Ability Enhancement Compulsory Course – II** Environmental Studies	-	**100**	**-**	**100**	2
Fourth Semester						
	Part – III					
18CBA15	Cost and Management Accounting	3	25	75	100	4
18CBA16	Legal Aspects For Indian Business	3	25	75	100	3
18CBA17	Statistical Quality Control **(Statistics Dept)**	3	25	75	100	3
18CBA18	R Programming **(Computer Science Dept)**	3	25	75	100	4
18CBA19	Computer Practical-IV **(R Programming) (Computer Science Dept)**	3	40	60	100	3
18CBA20	**Interdisciplinary Course** Business Economics **(Allied – Commerce Dept)**	3	25	75	100	5
	Part – IV					
18SECU01	**Skill Enhancement Course – I -** Information Security	-	**100**	-	**100**	2

* The Students have to undergo Internship for a period of 20 days during Fourth Semester Vacation.

CODE NO	SUBJECT	Exam Duration (Hrs)	Max. Marks			Credit points
			CA	CE	Total	
Fifth Semester						
	Part – III					
18CBA21	Income Tax	3	25	75	100	3
18CBA22	Logistics and Supply Chain Management	-	**100**	-	**100**	3
18CBA23	Big Data Analytics **(Computer Science Dept)**	3	25	75	100	3
18CBA24	Actuarial Statistics(**Statistics Dept)**	3	25	75	100	3
18CBA 25A 18CBA25B	**Discipline Specific Elective Course - I** Financial Management Techniques **(or)** Working Capital Management	3	25	75	100	4
18CBA26	*Internship	-	40	60	100	2
	Part – IV					
18GECEDC	**Generic Elective Course** – EDC	-	**100**	-	**100**	2
18SECU02	**Skill Enhancement Course - II** Online Test - [General awareness]	1½	-	100	100	2

Sixth Semester						
	Part – III					
18CBA27	Fundamentals of Banking and Insurance	3	25	75	100	3
18CBA28	Marketing & Marketing Research	3	25	75	100	3
18CBA29	Data Analytics Using SPSS **(Statistics Dept)**	3	25	75	100	3
18CBA30	Data Mining and Business Intelligence **(Computer Science Dept)**	3	25	75	100	3
18CBA31	Strategic Management	3	25	75	100	3
18CBA32	Computer Practical - V **(Data Mining and Business Intelligence) (Computer Science Dept)**	3	40	60	100	3
18CBA33	Project Work	-	40	60	100	3
18CBA34A 18CBA34B	**Discipline Specific Elective – Course – II** Security Analysis and Portfolio Management **(or)** Primary Market and Secondary Market	3	25	75	100	4

Part-V	No. of Papers	Semester No.	Credit
NCCC-Non CGPA Credit Course **(a)** NCC/NSS/Sports/Dept. Activity-Extension Activity	-	I to VI	2
NCCC- Non CGPA Credit Course **(b)** Career Oriented Programme (Add-on Course) / Women's Studies / Extra Paper / Certificate or Diploma course in Yoga for Youth Empowerment	-	I to VI	2
NCCC- Non CGPA Credit Course **(c)** Any one on-line course –MOOC's subjects*	1	I to VI	4
Typewriting/Office Management	-	I toVI	3
		Total Credits	147

GENERIC ELECTIVE COURSE

18GECCBA BASICS OF BUSINESS ANALYTICS (Unaided - Cluster VII)

Course Code	**18CBA01**	**FINANCIAL ACCOUNTING-I**

Title			
Class	**I B.Com (Business Analytics)**	**Semester**	**I**
Course Objectives	**The Course aims to** • Build Knowledge on the fundamentals of Financial Accounting. • Gain knowledge on preparation of Bank Reconciliation Statement. • Elaborate the concepts and accounting system for bill of exchange and Royalty Transactions. • Familiarize the Accounting System for Consignment and Joint Venture Business. • Develop the knowledge relating to Depreciation Accounting.		

UNITS	CONTENTS	HOURS
I	**Introduction and Final Accounts** Accounting – Meaning, Concepts & Conventions – Basics of Accounting Standards. Final Accounts of Sole Trading Concern – Trading and Profit and Loss Account-Balance Sheet - Opening and Closing entries- Adjustment entries.	**14**
II	**Rectification of Errors and Bank Reconciliation Statement** Rectification of Errors –Types of Errors – Suspense Account. Bank Reconciliation Statement - Meaning - Need - Steps in Preparation of Bank Reconciliation Statement.	**10**
III	**Bill of Exchange and Royalty Accounts** Bill of Exchange – Accounting Entries in the Books of Drawer and Acceptor Discounting of Bills – Endorsement – Bills Sent to the Bank for Collection - Dishonor of Bill - Renewal and Retiring of a Bill – Accommodation Bill. Royalty Accounts – Concepts - Royalty, Lessor, Lessee, Minimum Rent, Short Workings Accounting Treatment (With Minimum Rent and Without Minimum Rent) Excluding Sub Lease.	**12**
IV	**Accounting for Consignment and Joint ventures** Accounting for Consignments – Stock Valuation – Normal and Abnormal Losses Invoicing Goods Higher than Cost. Joint Venture Accounts - Own Books Separate Set of Books.	**12**
V	**Depreciation Accounts** Depreciation – Causes for Depreciation – Methods of Charging Depreciation – Straight Line Method – Diminishing Balance Method – Annuity Method – Depreciation Fund Method – Insurance Policy Method – Accounting for Depreciation - Provision for Depreciation Account - Disposal of an Asset – Profit or Loss on Sale of Assets - Change of Method - Prospective and Retrospective - AS 6 (Depreciation Accounting) - AS 10 (Accounting for Fixed Assets)	**12**
	Distribution of Marks: 80% Problems and 20% Theory	
References	**Text Book** 1. Jain S.P. and Narang K.L., "Advanced Accountancy", Volume I, 19TH Revised Edition Kalyani Publishers, New Delhi. **Reference Books** 1. M C. Shukla, T.S.Grewal, S.C. Gupta, "Advanced Accounts", 16th Edition, Sultan Chand and Sons, New Delhi, 2006.. 2. Gupta R.L. & Radhasamy.**,** "Advanced Accountancy" , Volume I, 1ST Edition Sultan Chand & Sons , New Delhi. Iyengar S.P.,"Advanced Accountancy "2nd Edition Sultan Chand & Sons, New Delhi.	
Course	**On completion of the course, students will be able to**	

Outcomes	**CO1:** Recall the Accounting Concepts, Conventions, Principles and Basic accounting Standards. **CO2:** Practice Trading and Profit And Loss Account and Balance sheet of firms and Bank Reconciliation Statement. **CO3:**Apply the knowledge of Accounting to record Bills of Exchange and Royalty transactions. **CO4:** Summarize the accounting system for Consignment and Joint Venture Business. **CO5:** prepare accounts of Depreciation Accounting.

Course Code & Title	18CBA02	STATISTICS FOR BUSINESS ANALYTICS	
Class	I B.Com (BA)	Semester	**I**

Course Objectives:

The course aims to

- Understand the basic concepts in Statistics in relation to business environment.
- Gin knowledge in the sampling for the selection procedures.
- Provide the methodology and scope of various modes of presentation of data.
- Compute various measures of location, measures of variation and their relative measures.
- Understand the relationships between the variables by using Correlation and Regression and also make predictions.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	Statistics: Meaning, Definition, Uses and Limitations of Statistics - Statistical Investigation - Questionnaire: Meaning – Preparation of Questionnaire – Collection of data - Primary and Secondary data – Merits and Demerits.	12
II	Sampling Techniques: Definition - Methods of Sampling - SRS, Stratified, Systematic, Convenience, Judgment and Quota Sampling. Classification of data: definition – types of classification. Tabulation: Definition – parts of a table – types of tables – difference between classification and tabulation.	12
III	Frequency distribution – types of frequency distribution – Univariate and bivariate distributions only – construction of frequency table - Diagrams and Graphs: Diagrammatic representation of Statistical Data - Types of Diagrams – Graphical representation of Statistical Data - Histograms – Frequency polygon - Frequency curve – Ogives – Simple Problems.	12
IV	Measures of Central Tendency: Arithmetic Mean, Median and Mode for ungrouped and grouped data – merits and demerits - Measures of Dispersion: Absolute and Relative measures – Merits and Demerits - Simple Problems.	12
V	Skewness: Definition - Types of measuring skewness (Karl Pearson's and Bowley's Coefficient of skewness) - Kurtosis (concept only) - Correlation- Scatter diagram method - Karl Pearson's co-efficient of correlations and Spearman's Rank co-efficient of correlations - Simple Problems. Regression: Definition – Uses - regression lines- regression equations- properties (statement only)- Simple Problems.	12

Note: 60% Problems and 40% Theory

References:

Text Books:

1. Fundamentals of Mathematical Statistics - Veerarajan..T, Yes Dee Publishers Pvt Ltd, Chennai. 2017.
2. Statistical Methods - S.P.Gupta, Sultan Chand & Sons, 2014.
3. Business Statistics - S.P.Gupta and M.P.Gupta Sultan Chand & Sons, 2016.

Reference Books

1. Elements of Business Statistics and Operations Research - Gupta S.P., Gupta, P.K., and Man Mohan , Sultan Chand & Sons, New Delhi, 4th Edition, 2007
2. Business Mathematics and Statistics - Navnitham P.A., Jai Publishers, Trichy.2012.
3. Introductory Statistics - Wonnacott. R.J&Wonnacott, John Wiley &Sons, Mumbai 5th Edition, 1990.

Course Outcomes:

On completion of the course, students should be able to

- Interpret and solve real life business problems using the concepts of Statistics.
- Apply the various sampling techniques in real life business problems.
- Identify the business and economic data graphically and numerically and explain relationship between graphs and numerical data.
- Organize and summarize Statistical data by using descriptive Statistics.
- Predict relevant relationship between business variables using Correlation and regression analysis.

Course Code & Title	18CBA03 – COMPUTER PRACTICAL – I (EXCEL)	
Class	I B.Com (Business Analytics)	Semester I
Course Objectives	● To familiarize with spreadsheets. ● To understand the chart concepts. ● To learn the usage of functions and simple financial, mathematical and statistical formula.	

LIST OF PROGRAMS	
1.	Find Mean, Median and Mode using Excel.
2	Analyze sample purchase detail using built-in functions in Excel.
3	Analyze sample sales information system using pivot table and pivot chart.
4	Create profit and loss details for any three companies and display the result using various charts in Excel.
5	Implement the concept of macros using Excel.
6	What if analysis using solver model
7	Do Feature Analysis and Data Analysis for any two companies.
8	Implement conditional formatting to sort data by column, slice, and table wise.
9	Enter Stock details and prepare various reports using Excel.
10	Manage connections by using the Workbook Connection dialog box in Excel.
Course Outcomes	**CO1**: Able to use excel to create personal and/or business spreadsheet by following current professional standard. **CO2**: Use skills to design and create spreadsheet. **CO3**: Develop decision making skill by using what-if analysis on spreadsheets.

Course Code & Title	**18CBA04** **MATHEMATICAL TECHNIQUES FOR BUSINESS ANALYTICS**		
Class	I BCom Business Analytics	**Semester**	I
Course Objectives	The Course aims, • *to introduce basic applications of Matrix algebra* • *apply concept of set theory in business analysis* • *to familiar in the fundamentals of line equations for their analysis* • *to know the methods of commercial arithmetic* • *to introduce the applications of optimization*		

SYLLABUS

UNIT	Content	No. of Hours
I	**Matrices** :– Basic Concepts – Operation on Matrices – Inverse of a matrix – Soultion of a system of Linear equations I – Input – Output Analysis.	**12 hours**
II	**Sets, Relations and Functions:** Basic concepts – Sub-set – Operations on Sets – Applications – Cartesian product of two sets – Relations – Properties of Relations – Functions –Functional Representation – Finding functions	**12 hours**
III	**Analytical Geometry:** Introduction – Distance between two points in a plane – slope of a straight line – Equation of a straight line – point of intersection of two lines – Interpretation (Cost –Output – Demand and supply curves) – Break- even analysis.	**12 hours**
IV	**Commercial Arithmetic:** Percentages – Simple and Compound Interest – Arithmetic Series and Geometric Series – Annuity	**12 hours**
V	**Optimization:** Geometrical meaning of dy/dx – Increasing and decreasing functions – Criteria for maxima and minima – Applications	**12 hours**
References	**Text Books:** V.Sundaresan and S. D Jayaseelan, ***"An Introduction to Business Mathematics",*** First edition , Reprint 2012. **Unit – I: Chapter 8 (8.1 to 8.7)** **Unit – II: Chapter 2(2.1 to 2.9)** **Unit – III: Chapter 1(1.1 to 1.7)** **Unit – IV: Chapter 7 (7.1 to 7.4)** **Unit – V: Chapter 4 (4.1 to 4.4)** **Reference Books:** PA Navanitham, "Businesss Mathematics and Statistics" Reprint 2016	
Course Outcomes	**On completion of the course, students should be able to** ***CO1:*** *know the idea of matrix and will do the input output analysis,* ***CO2:*** *understand the concept set theory,* ***CO3:*** *apply the concept of analytic geometry to work out the Break – even analysis,* ***CO4:*** *understand the various strategies of commercial arithmetic,* ***CO5:*** *to identify the nature of functions.*	

Course Code Title	18CBA05 FINANCIAL ACCOUNTING-II		
Class	**I B.Com (Business Analytics)**	**Semester**	**II**
Course Objectives	**The Course aims to** □Build knowledge on the Accounting System for the Special Transactions. □ □Familiarize the accounting procedure for Investment transactions. □ □Calculate the insurance claims for loss of stock and loss of profits. □Acquaint with the knowledge of accounting process relating to admission and retirement of partners in a partnership firm. □ □Develop the accounting knowledge on issue and redemption of securities by a corporate entity.		

UNITS	CONTENTS	HOURS
I	**Hire Purchase Accounts** Hire Purchase System – Definition – Features – Accounting Treatment Calculation of Interest – Default and Repossession – Hire Purchase Trading Account- Stock and Debtor System – Installment Purchase System – Definition – Features – Distinction Between Hire Purchase System and Installment Purchase System - Accounting Treatment.	12
II	**Branch and Departmental Accounts** Branch Accounts – Branches not keeping full system of accounting – Debtors System - Final account system - Stock and Debtors System - - Goods Invoiced to Branch at Selling Price - Independent Branch Accounts – Departmental Accounting - Basis of Allocation and Apportionment of Expenses - Inter Departmental Transfers at Cost and Selling Price - Preparation of Departmental Trading and Profit and Loss Account - General Profit and Loss Account - Balance Sheet – Treatment of Unrealized Profits.	12
III	**Investment Accounts and Insurance Claims** Investment Accounts (AS-13)- Cum Dividend and Ex Dividend – Balancing the Investment Account – Equity Shares Accounts- Insurance Claims - Loss of Stock - Average Clause - Loss of Profit Policy.	12
IV	**Admission and Retirement of Partners** Admission of a Partner – Calculation of New Profit Sharing Ratio and Sacrificing Ratio – Revaluation of Assets and Liabilities – Treatment of Goodwill – Adjustment of Capital. Retirement of a Partner - Calculation of New Profit Sharing Ratio and Gaining Ratio - evaluation of Assets and Liabilities - Treatment of Goodwill - Settlement of Dues.	12
V	**Issue and Redemption of Securities in a Company** Issue of Securities – Equity Shares - Preference Shares – Debentures - Accounting Entries - Over Subscription - Pro-Rata Allotment - Issue at Premium and at Discount - Redemption of Preference Shares and Debentures - Redemption at Par and Premium - Sources of Redemption - Capital Redemption Reserve – Issue of Bonus Shares	12
	Distribution of Marks: 80% Problems and 20% Theory	
References	**Text Book** Jain SP & Narang KL, "Advanced Accountancy", 19th Revised Edition Volume I &II, Kalyani Publications, New Delhi. **Reference Books** 1. Gupta R.L & Radhasamy.M , "Advanced Accountancy", 1st Edition, Volume – I & II Sultan Chand & Sons, New Delhi.	

	2. M C. Shukla, T.S.Grewal, S.C. Gupta, "Advanced Accounts", 16th Edition, Sultan Chand and Sons, New Delhi, 2006. **3.** Iyengar.S.P., "Advanced Accountancy", 2nd Edition, Sultan Chand & Sons, New Delhi.
Course Outcomes	**On completion of the course, students will be able to** **CO1:** Apply and Practice the Accounting Concepts and Procedures for hire purchase, installment purchase, and branch and departments related transactions. **CO2:** Summarize the accounts of investments transactions. **CO3**: Submit the Fire Insurance Claims to insurance companies regarding loss of stock and loss of profit. **CO4:** Apply the Knowledge of partnership accounts at the time of the admission and retirement of partners in a partnership firm. **CO5:** Record the transactions for issue and redemption of securities by the corporate firms.

Course Code & Title	18CBA06	APPLIED BUSINESS STATISTICS - I	
Class	I BCom (BA)	Semester	**II**

Course Objectives:

The course aims to

- Use theorem and laws of probability and apply the concepts of probability distributions to business related problems.
- Learn how to use sample statistics to estimate the population parameter.
- Develop hypothesis testing methodology for accepting or rejecting null hypothesis about population parameters.
- Highlight the importance of non parametric tests by using various statistical tools.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	Probability – Definitions – Basic Terminology in Probability – Addition and Multiplication Theorem – Baye's Theorem – Simple problems. Random Variables - Concept of Random Variables – Discrete and Continuous Random Variables – Mathematical Expectations - Simple problems.	12
II	Probability Distributions – Binomial, Poisson and Normal distributions - Concept, Properties, Uses of the Distributions - Fitting of the distributions – Simple problems.	12
III	Sampling Distributions – Sample – Population – Standard Error –Concepts only. Estimation – Properties of a Good Estimator – Point Estimation and Interval Estimation - Single Mean and Difference of Means – Single Proportion and Difference of Proportion. Determination of Sample Size-Simple Problems.	12
IV	Testing of Hypothesis – Definition of Null Hypothesis, Alternative Hypothesis, Level of Significance, Type I and Type II error, Acceptance Region and Critical Region - One Sample and Two Sample Tests for Means and Proportions of Large Sample (Z test) for Single and Two Means-Single and Two Proportions. Small sample t test – Single and Two Means, Paired t test – F-test – One way ANOVA Simple Problems	12
V	Non parametric tests: Chi-square test (Independence of Attributes and Goodness of fit), Sign test, Rank test, Kolmogrov-Smirnov test, Mann Whitney U test, Run test, Kruskal Wallis test – Simple problems.	12

Note: Theory carries 40% & Problems carry 60%

References:

Text Books:

1. Veerarajan.,T, "Fundamentals of Mathematical Statistics", Yes Dee Publishers Pvt Ltd,Chennai. 2017.
2. Statistics for Management: T N Srivastava & Shailaja Rego - McGraw-Hill Companies, 2010.

Reference Books:

1. Gupta S.P., "Statistical Methods" Sultan Chand & Sons, New Delhi. 2012
2. Goon, Gupta & Das Gupta, " Fundamentals of Statistics", Siya Ram &Publishers, Vol.I & II, 1968.

Course Outcomes:
On completion of the course, students should be able to • Interpret and solve real life business problems using the concepts of Statistics. • Appreciate the use of probability concepts, discrete and continuous probability distributions and apply them in real world problems. • Apply suitable test of significance for making decisions in hypothesis testing. • Carry out and interpret statistical data by using various non – parametric tests.

Course Code & Title	18CBA07	COMPUTER PRACTICAL II (SPSS)	
Class	I B.Com (BA)	Semester	**II**

Course Objectives:

The course aims to

- Train the students to gain knowledge in the statistical software (SPSS) packages for problem solving.
- Introduce the basic functions of SPSS.
- Train the students for making graphs and diagrams.
- Provide the students with skills to use SPSS for processing and Analyzing Statistical data set.
- Train the students to process data and generate outputs.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	Introduction - Sample files – Opening a Data file – Running an Analysis – Viewing Results – Creating Charts – Multiple Response (define variable sets) – Transform (Recode into same variable, Recode into different variable).	12
II	Graph (Bar, Line, Dot, Pie Charts) - Descriptive Statistics (Frequency, Descriptive, Cross tabs) – Compare Means (One-Sample t-test, Independent-Sample t-test, Paired-Sample t-test, F-test, One-Way ANOVA).	12
III	Non-Parametric Test (Run, Sign, Rank, Chi-Square, 1-sample K-S test, 2-sample K-S test, Mann Whitney U test, Kruskal Wallis test).	12

References:

Text Book:

1. "SPSS in Simple Steps", Smruti Bulsari, Sanjay Sinha Kiran Pandya, Dreamtech Press, 2011.
2. "Discovering Statistics using IBM SPSS Statistics", Andy Field, SAGE Publications Limited; Fourth edition, 2003.
3. "Performing Data Analysis Using IBM SPSS", 1st Edition, Lawrence S. Meyers, Glenn C. Gamst, A. J. Guarino, Publisher: Wiley; 1 edition, 2013.

Reference Books:

1. "Practical Data Analysis", Hector Cuesta, Packt Publishing Limited, 2013.
2. "Statistical Data Analysis: A PracticalGuide", Milan Meloun , Woodhead Publishing India; 1 edition, 2011.

3 "SPSS Statistics for Data Analysis and Visualization", Keith McCormick, Jesus Salcedo, Jason Verlen, Jon Peck, Andrew Wheeler, Wiley; 1 edition, 2017.

Course Outcomes:

On completion of the course, students should be able to

- Use the basic functions of SPSS
- Process data and generate statistics for some demographic variable analysis.
- Generate graphs and diagrams for data analysis.
- Process data and generate outputs using SPSS software.

Course Code & Title	18CBA08 **OPTIMIZATION TECHNIQUES**		
Class	I BCom Business Analytics	**Semester**	II
Course Objectives	The Course aims, • *to introduce the basics, methodology and applications of Operations Research,* • *to frame the real time problems into LPP and solve using the methods of Transportation problem,* • *to learn the applications of game theory,* • *to solve the various methods of Network analysis problems,* • *to learn the basic concepts of sequencing problem.*		

SYLLABUS

UNIT	Content	No. of Hours
I	**Introduction to Operations Research and Linear Programming Problem:** Introduction – Linear Programming Problem – Mathematical Formulation of the problem. Illustration on Mathematical Formulation of LPP's – Graphical Solution Method –Some exceptional cases – General Linear Programming Problem – Canonical and Standard Forms of LPP.	**12 hours**
II	**Transportation Problem and Assignment Problem:** **Transportation problem:** Introduction – LP Formulation of the Transportation Problem – Existence of Solution in Transportation Problem. – Transportation Table – Loops in Transportation Table – Finding an Initial Basic Feasible Solution - Degeneracy in TP – Transportation Algorithm (MODI Method). **Assignment Problem:** Mathematical Formulation – Solution methods of Assignment Problem – Special cases in Assignment Problem.	**12 hours**
III	**Game Theory** Introduction – Two person zero sum games – Some basic terms – The maximin - minimax principle – Games without Saddle points – Mixed Strategies – Graphical Solution of 2 x n and m x 2 games – Dominance Property.	**12 hours**
IV	**Network Analysis** Introduction – Network and Basic components – Rules of Network Construction –concurrent activities - Critical path analysis – Probability considerations in PERT.	**12 hours**
V	**Sequencing Problem** Introduction – Problem of Sequencing – Basic terms	**12 hours**

	used in sequencing – processing n jobs through Two machines, n – jobs k machines.	
References	**Text Books:** Kanti swarup ,Gupta P. K Man Mohan , "Operations Research" 18th Edition 2016 Sultan Chand sons, New Delhi. **Unit – I: (Sections 2.1 to 2.4, 3.1 to 3.5)(Problems only)** **Unit – II: (Sections 10.1 to 10.3,10.5,10.6,10.9,10.12,10.13,11.1 to 11.4)(Problems only)** **Unit – III: (Sections 17.1 to 17.7) (Problems only)** **Unit – IV: (Sections 25.1,25.2,25.4 to 25.7)(Problems only)** **Unit – V: (Sections 12.1 to 12.5)(Problems only)** **Reference Books:** 1. S. Kalavathy, "Operations Research ",4th Edition, Vikas Publishing House,Pvt,Ltd. 2. Dharani Venkata Krishnan,"Operations Research", Keerthi Publications,Vijayawada. 3.Hamdy A. Taha,"Operations Research – An Introduction ",Pearson Publications , New Delhi. 4. Sharma J.K,"Operations Research:Theory and Applications ",MacMillan Publishers India, New Delhi.	
Course Outcomes	**On completion of the course, students should be able to** ***CO1:*** *know the basics of operations research,* ***CO2:*** *demonstrate the real time problems in to Linear Programming Problem and will solve the LPP using optimization techniques,* ***CO3:*** *solve the game theory problems,* ***CO4:*** *will familiarize with the methods of network analysis problems,* ***CO5:*** *have the knowledge of solving the sequencing problem.*	

Course Code	**18CBA09**		
Title	**Corporate Accounting**		
Class	**II B.Com (Business Analytics)**	**Semester**	**III**
Course Objectives	**The Course aims to** • Build knowledge on the Final Accounts of Companies as per the provisions of Companies Act, 2013. • Familiarize the accounting practices for Amalgamation, Absorption, Reconstruction and Liquidation of companies. • Develop an understanding on the Valuation of Shares and Goodwill. • Explain the Holding and Subsidiary Company Accounting Practices. • Impart knowledge on the accounting systems of Banking and Insurance Companies.		

UNIT	CONTENT	HOURS
I	**Final Accounts of Companies (As per Companies Act 2013)** Profit Prior to Incorporation – Statement of Profit and Loss – Balance Sheet - Calculation of Managerial Remuneration.	**14**
II	**Amalgamation, Absorption, External and Internal Reconstruction of Companies.** Amalgamation and Absorption – Meaning – Purchase Consideration – Methods of Calculating Purchase Consideration – Accounting Treatment - External and Internal Reconstruction - Accounting Treatment.	**14**
III	**Valuation of Shares and Goodwill, Liquidation of Companies** Valuation of Shares and Goodwill – Different Methods of Valuation of Shares and Goodwill. Liquidation of Companies –Statement of Affairs - Deficiency Account- Liquidator's Final Statement of Account.	**14**
IV	**Accounts of Holding Companies** Accounts of Holding Companies - Minority Interest - Cost of Control/ Goodwill or Capital Reserve – Capital Profit, Revenue Profit (Excluding Chain Holding) - Consolidated Balance Sheet.	**15**
V	**Accounts of Banking and Insurance Companies** Accounts of Banking Companies – Profit and Loss Account – Balance Sheet. Accounts of Insurance Companies - Life Insurance Company Accounts Revenue Account, Profit and Loss Account and Balance Sheet.	**15**

Distribution of Marks: Problem – 80 % and Theory – 20%

References

Text Book

Jain S.P. & Narang K.L., "Advanced Accountancy", Volume II, 21st Edition, Kalyani Publishers, New Delhi, 2017.

Reference Books

1. Reddy T.S. & Murthy A., "Corporate Accounting (As Per Revised Schedule VI in New Format)", Margham Publications, Chennai.
2. Shukla S.M. & Gupta K.L.,"Corporate Accounting", 51st Edition, Sahithya Bawan Publications, Agra, 2018.
3. Shelly Goel. & D.K.Goel., "Corporate Accounting", Arya Publications,New Delhi,2018.
4. Maheshwari S.N. & Maheshwari S.K. "Corporate Accounting", 11th Edition, Vikas Publishing House Pvt Limited, New Delhi, 2018.

Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Prepare Financial Statements of Companies as per the provisions of Companies Act, 2013. **CO2:** Apply the accounting concepts of Amalgamation, Absorption, Reconstruction and Liquidation of companies. **CO3:** Value the shares and goodwill of a Limited Company. **CO4:** Consolidate the accounts of Holding and Subsidiary Companies. **CO5:** Develop the Financial Statements of Banking and Insurance Companies.

Course Code **Title**	**18CBA10** **Business Organization and Management**		
Class	**II B.Com (Business Analytics)**	**Semester**	**III**
Course Objectives	**The Course aims to** • Recall the concept and objectives of a Business. • Explain the various forms of Business Organization and Business Combinations. • Elaborate the basic Concepts and Theories of Management. • Develop the knowledge on Organizational and Leadership Skills. • Familiarize the Theories of Motivation, Techniques of Communication, Coordination and Controlling.		

UNITS	CONTENT	HOURS
I	**Introduction to Business and Start ups** Business – Definition, Essentials & Scope - Classification of Business Activities - Evolution of Business - Objectives of Business - Modern Business, Business & Profession, Start Ups - Plant Location, Plant Layout & Size of Business Unit.	**12**
II	**Forms of Business Organization and Business Combinations** Business Organization – Definition, Characteristics and Objectives. Forms of Business Organization - Sole Proprietorship, Partnership, Joint Stock Companies & Co-operatives. Business Combinations - Meaning, Causes, Objectives, Types and Forms - Mergers, Takeovers and Acquisitions.	**12**
III	**Introduction to Management and Planning** Management – Definition – Meaning – Management is a Science or Art - Theories of Management – Henry Fayol, F.W.Taylor – Principles of Management - Administration Vs Management - Levels of Management Managerial Skills. Planning - Definition – Features – Process – Importance – Types – Forecasting Planning Premises – MBO - Meaning – Characteristics - Advantages - Limitations – Decision Making.	**12**
IV	**Organization, Staffing and Leadership** Nature and Importance of Organization – Theories of Organization - Organization Process – Principles of Organization - Types of Organization - Authority and Responsibility – Centralization - Decentralization - Departmentation. Staffing - Meaning – Significance – Elements of Staffing Process - Recruitment Selection Training - Appraisal – Promotion. Leadership – Need for Leadership – Leadership Theories – Qualities of a Leader – Types of Leadership.	**12**
V	**Communication, Motivation, Co-ordination and Controlling** Communication – Meaning – Objectives – Process – Importance – Types - Characteristics of Good Communication System - Problems of Communication. Motivation – Theories of Motivation – Maslow's Theory and Herzberg Theory -Types of Motivation. Co-ordination. Control - Nature - Process of Control, Characteristics of Ideal Control System - Control techniques.	**12**
References	**Text Book** 1. Bhushan Y.K., "Fundamentals of Business Organisation & Management" Sultan Chand & Sons, New Delhi, 2016.	

	2. Dinkar Pagare, "Principles of Management", 2nd Edition Sultan Chand & Sons, New Delhi, 2013. **Reference Books** 1. Moshal B.S., "Management Theory & Practice", 2nd Galgotia Publishing Company, New Delhi, 2013. 2 Gupta C.B., "Business Management", Sultan Chand & Sons, 15th Edition, New Delhi, 2018. 3. Gupta R.N.,"Principles of Management", 1st Edition, S.Chand & Company Ltd, New Delhi, 2010. 4. Gupta C.B., "Organisation & Management, 16th Edition, Sultan Chand & Sons, New Delhi. 2017.
Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Recollect the concept and objectives of a Business. **CO2:** Identify forms of Business Organization and Business Combinations. **CO3:** Translate the Theory and Practice of Management. **CO4:** Practice the Organizational and Professional Leadership skills. **CO5:** Exhibit the Theories of Motivation and Controlling techniques in the competitive Business environment.

Course Code **Title**	**18CBA11** **NoSQL-MongoDB**		
Class	**II B.COM (Business Analytics)**	**Semester**	**III**
Course Objectives	**The Course aims to** • Build the concepts of Big databases and the need of MongoDB. • Develop an understanding on Data Extraction, Parsing CSV and CURD operations. • Familiarize with Data Analysis, Projection Queries and Aggregation. • Impart knowledge on Data Replication, Data sharding and MongoDB indexes. • Explain Map Reduce and Regular Expressions.		

UNITS	CONTENT	HOURS
I	**Introduction to MongoDB** Big Databases–SQL-NoSQL Tradeoffs - CAP Theorem – Eventual Consistency NoSQL – Database Types – MongoDB- Introduction - MongoDb – Need – MongoDB Vs RDBMS – MongoDBDriver Installation – Configuration – Import and Export MongoDB Server Configuration	**8**
II	**Data Extraction Fundamentals** Data Extraction Fundamentals - Intro to Tabular Formats - Parsing CSV -Parsing XLS with XLRDParsing XML - Intro to JSONGetting Data into MongoDB - MongoDB- CURD – Database Creation –Update – Read –Delete Using mongoimport -Operators like $gt, $lt, $exists, $regex -Querying Arrays and using $in and $all Operators -Changing entries: $update, $set, $unset	**10**
III	**Data Analysis** Data Analysis - Field Queries -Projection Queries- Limiting – Sorting - - Aggregation - Examples of Aggregation Framework -The Aggregation Pipeline -Aggregation Operators: $match, $project, $unwind, $group	**10**
IV	**User management** User Management – MongoDb Data Replication in Servers – Data Sharding - MongoDB Indexes – Create – Find – Drop – Backup – MongoDB – Relationships – Analyzing Queries – MongoDB Objectid	**10**
V	**Map Reduce and Regular Expressions** Advanced MongoDB: Map Reduce – MongoDB - Text Processing - Regular Expression Case Studies – Text processing of large datasets, Map Reduce using MongoDB	**10**

References	**Text Book** 1. MongoDB: The Definitive Guide, 2nd Edition , Powerful and Scalable Data Storage, By Kristina Chodorow, Publisher: O'Reilly Media [Unit III,IV & V]. 2. NoSQL Distilled A Brief Guide to the Emerging World of Polyglot Persistence Pramod J. Sadalage Martin Fowler, Pearson Education, Inc., 2013. [Unit I & II]. **Reference Book** 1. MongoDB Basics - David Hows, Peter Membrey, Eelco Plugge, Publisher Apress - Ebook(free) https://it-ebooks.info/book/4527/.

Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Use skill to install and configure MongoDB. **CO2:** Practice the operators like $gt, $lt,$exists and getting data in MongoDB. **CO3:** Learn Data Analysis operations such as Field Queries, Projection queries, Limiting and Sorting. **CO4:** Create and apply Find, Drop, Backup and analysing queries in MongoDB. **CO5:** Enhance the knowledge in text processing of large datasets, Map_reduce using MongoDB..

Course Code & Title	18CBA12	APPLIED BUSINESS STATISTICS II	
Class	II BCom (Business Analytics)	Semester	III

Course Objectives:

The course aims to

- Solve the past data related to a variable and to fit a suitable model.
- Highlight the important logic and methodology for calculation of various index numbers.
- Understand the relationship between the variables by using correlation and regression and also to make prediction.
- Learn about the basic concepts of multivariate distributions and their related distributions.
- Understand how principal component analysis and factor analysis are used in business environment.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	**Time Series** Time Series – Definitions – Components – Additive and Multiplicative Model – Secular Trend – Measuring the Trend – Method of Moving Averages – Method of Least Squares – Merits and demerits. Seasonal Fluctuations – Methods of Simple Average and Ratio to Moving Average – Simple problems.	12
II	**Index numbers** Index Numbers – Definitions – Characteristics and uses of Index Numbers – Unweighted Index Numbers – Weighted Index Numbers – Laspeyre's Paasche's and Fisher's Ideal Index Numbers – Time and Factor Reversal Tests. Cost of Living Index Numbers – Simple problems.	12
III	**Correlation and Regression Analysis** Correlation Analysis: Definitions – Scatter Diagram – Karl-Pearson's and Spearman's Rank Correlation – Simple problems. Regression Analysis: Definitions – Uses – Fitting of Regression Equations – Difference between Correlation and Regression analysis – Simple problems.	12
IV	**Multivariate distribution** Basic Concepts of Multivariate Distribution – Multinomial distribution – uses – Multivariate Normal Distributions – uses in Business Analytics.	12
V	**Multivariate Analysis** Discriminant Analysis and Classification (Concepts only). Principal Component analysis – Factor Analysis uses in Business Analytics – Components Extraction – Different Extraction Methods – Factor Rotation – Rotated Factor Matrix (concepts only)	12

Note: Theory carries 20% & Problems carry 80%.

References:

Text Books:

1. "Fundamentals of Mathematical Statistics", Gupta.S.C &.Kapoor, V.K., Sultan Chand & Sons, New Delhi, 2017.
2. "Statistics for Management", Srivastava & ShailajaRego, Tata McGraw Hill Education Pvt.Ltd, New Delhi, 2008.
3. "Multivariate Data Analysis", Hair, Black, Babin & Anderson & Tatham, Pearson Publishers, New Delhi 2010.

Reference Books:

1. "Business Mathematics and Statistics", Navanitham,P.A., Jai Publishers Chennai. 2008.
2. "Applied Multivariate Research Design and Interpretation", Lawrence, S., Meyers & Glenn Gamst & AJ, Guarino, SAGE Publications New Delhi, Second Edition (17 August 2012).
3. "Statistical Methods", Gupta S.P., Sultan Chand & Sons, New Delhi, 2012.
4. "Introduction to Multivariate Analysis", Christopher Chatfield and Alexander J Collins, Springer US, 1980.

Course Code **Title**	**18CBA13** **COMPUTER PRACTICAL –III(NoSQL-MongoDB)**		
Class	**II B.COM (Business Analytics)**	**Semester**	**III**
Course Objectives	**The Course aims to** • Develop Skills with regard to CURD operations for real time Datasets. • Familiarize with cursor and aggregation pipeline operators. • Elaborate the knowledge to create a database using MongoDB.		

LIST OF PROGRAMS	
1	Design an E-Commerce product catalog system using MongoDB as a storage engine and insert values.
2	Perform basic CURD (Create, Update, Read and Delete) functions for the product catalog.
3	Perform built-in functions
4	Perform Sorting, indexing and filter for a dataset (use some real time data set)
5	Create a database for Music store and find albums by genre and sort by year produced
6	Create a Collection and Document and perform the following: • Find a document by id • Find a user by email • Find a list of all users with the same first name • Find all users who are more than 12 years old
7	Use real time data set of Stock exchange. Import the file from from the command line using the mongo import shell command. • Find all the stocks where the profit is over 0.5 • Find all the stocks with negative growth
8	Create a cursor to retrieve all the records from the database and display in the formatted manner.
9	Use aggregation pipeline to filter the result set(based on all possibilities like year, month and dayOfMonth etc.,)
10	Collect a Company startup Database and preprocess the file. Filter by tags as an array. Use a cursor to iterate over the array and convert the comma separated string into an array, and count the total number of tags.

Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Implement on how to preprocess the file, filtering, arrays and statistical functions (mean, standard deviation, sampling). **CO2:** Load Datasets from different sources (CSV, XML). **CO3:** Enhance with Indexing, Sorting and Built-in Functions for real time Datasets.

Course Code & Title	18CBA14	ECONOMETRICS	
Class	II BCom (Business Analytics)	Semester	**III**

Course Objectives:

The course aims to

- Learn different linear models in economics.
- Understand the concept of various econometric models.
- Understand the concept of various forecasting models and its applications.
- Understand the concept of input - output analysis and their assumptions.
- Highlight the importance of autocorrelation in business environment.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	**Econometrics** Econometrics - Definitions – Scope – Objectives and Limitations – Two variable linear regression model – Error measurements and Testing method – Least square estimation – Concept of Economic Forecasting – Types of forecasting.	12
II	**Econometric Models** Basics of Econometric Modeling – Bivariate Econometric Modeling – Multivariate Econometric Modeling - Multicollinearity – Meaning – Causes for Multicollinearity – Tests for detecting Multicollinearity.	12
III	**Forecasting models** Heteroskedasticity – Graphical presentation – Test for detecting Heteroskedasticity - Dummy Variables – Definition – Interaction effects and seasonal data effects using dummy variables – Uses. Econometric Modeling – Panel Data Modeling – Log Modeling – Basic of Time Series – Univariate Time Series Modeling – Concepts and its Applications.	12
IV	**Input -Output analysis** Input – Output Analysis – Introduction – Meaning of Input and Output - Assumptions - Leonitef's Input – Output Analysis – Assumptions – Closed and Open I/O Models - Simple Problems.	12
V	**Auto Correlation** Auto Correlation – Meaning – Assumptions – Causes of autocorrelation – characteristics – Effects of autocorrelation – Tests for autocorrelation - Auto Regression - ARIMA Modeling – Box-Jenkins (BJ) model - steps of BJ approach – ARCH /GARCH Modeling – Basic Concepts and its Applications	12

References:

Text Books:

1. "Basic Econometrics", Damodar N & Gujarathi, 4th edition, McGraw-Hill Education (India) Pvt., Ltd. New Delhi, 2015.
2. "Introductory econometrics – A Modern approach", Jeffrey M. Wooldridge, 5th edition, South – Western, a part of Cengage learning publishing, 2009.

Reference Books:

1. "Econometrics", Dilip M. Nachane, oxford University press, 2006.
2. "Econometric Analysis", William H. Greene, Pearson education, Inc and Dorling Kindersley publishing, Inc, 2003.

Course Outcomes:
On completion of the course, students should be able to • Formulate and estimate different econometric models in business problems. • Solve and Interpret real life business problems using the concepts of econometrics. • Use appropriate tests to detect Heteroskedasticity. • Identify the various input - output analysis and their applications. Construct, test and analyze the various forecasting models in business environment.
Course Outcomes:
On completion of the course, students should be able to • Solve and Interpret real life business problems using the concepts of Statistics. • Analyze the data using various time series models and also forecast the future values. • Demonstrate knowledge and understanding of index number theory and methods and be able to provide solutions to general aggregation problems. • Predict relevant relationship between business variables using Correlation and regression analysis. • Demonstrate knowledge and understanding of the basic concepts of multivariate distributions and their related distributions. • Carryout and interpret the results from principal component analysis and factor analysis.

Course Code Title	**18CBA15 Cost and Management Accounting**		
Class	**II B.Com (Business Analytics)**	**Semester**	**IV**
Course Objectives	**The Course aims to** • Explain the basic Concepts relating to Cost and Management Accounting. • Develop knowledge on the techniques of controlling Material and Labour Costs. • Familiarize the various methods of Cost Accounting Systems. • Impart knowledge on the preparation of Funds Flow and Cash Flow Statements. • Comprehend the techniques of Budgetary Control and Marginal Costing		

UNITS	CONTENT	HOURS
I	**Cost Accounting & Management Accounting** Cost Accounting- Evolution – Concepts - Classification - Methods of Costing Elements of Cost - Cost Statement - Unit Costing. Management Accounting - Meaning - Nature and Scope – Objectives - Significance of Management Accounting.	**14**
II	**Materials and Employee Costs** Material Control- Meaning – Need - Techniques of Material Control - Methods of Valuing Material Cost. Employee Cost - Accounting for Overtime, Idle Time and Labour Turnover-Methods of Remuneration - Incentive and Bonus Schemes.	**14**
III	**Overhead Accounting and Specific Methods of Costing** Overhead Classification - Accounting and Control of Overheads - Overhead Allocation, Apportionment and Absorption – Machine Hour Rate. Operating Costing - Contract Costing - Process Costing – Normal and Abnormal Losses.	**14**
IV	**Funds Flow and Cash Flow Statements** Funds Flow Statement – Concepts - Schedule of Changes in Working Capital - Preparation of Funds Flow Statement. Cash Flow Statement – Uses - Significance - Preparation of Cash Flow Statements (As per AS 3)	**15**
V	**Budgeting and Budgetary Control, Marginal Costing** Budgeting and Budgetary Control - Concepts - Budget Preparation - Fixed and Flexible Budgets - Functional Budgets - Zero Based Budgeting (ZBB). Marginal Costing - Basic Concepts - Contribution - P/V Ratio- BEP - Margin of Safety - Applications of Marginal Costing (Theory only).	**15**
Distribution of Marks: Problems – 60 % and Theory – 40%		
References	**Text Book** 1. Jain S.P and Narang K.L., "Cost Accounting", 8th Edition, Kalyani Publishers, New Delhi, 2014. 2. Sharma R.K. & Gupta S.K., "Management Accounting", 13th Edition, Kalyani Publishers, New Delhi, 2014. **Reference Books** 1. Iyengar S.P., "Cost Accounting-Principles and Practice", 14th Edition, Sultan Chand & Sons, New Delhi, 2009. 2 .Maheshwari S.N., "Cost and Management Accounting", 14th Edition, Sultan Chand & Sons, New Delhi, 2003.	

	3. Pillai R.S.N. & BagavthiV., "Cost Accounting" 4th Edition, S.Chand Publishing Company, New Delhi, 2010. 4. Khan M.Y. and Jain P.K., "Management Accounting" 5th Edition, Tata McGraw-Hill Education (India) Private Limited, New Delhi, 2010.
Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Understand the significance of Cost and Management Accounting. **CO2:** Analyze Cost Control Techniques. **CO3:** Identify the various methods of Cost Accounting. **CO4:** Prepare the Funds Flow and Cash Flow Statements relating to a Business. **CO5:** Apply the Budgetary Control and Marginal Costing Techniques in Decision Making Process.

Course Code **Title**	**18CBA16** **Legal Aspects for Indian Business**		
Class	**II B.Com (Business Analytics)**	**Semester**	**IV**
Course Objectives	**The Course aims to** • Explain the Legal Framework of the Business Contracts. • Develop knowledge on the legal aspects of Indian Contract Act, 1872. • Familiarize the law relating to contract of Bailment, Pledge and Contract of Agency. • Impart knowledge on Sale of Goods Act, 1930. • Comprehend the law relating to Negotiable Instruments and Partnership Firms.		

UNITS	CONTENT	HOURS
I	**Indian Contract Act 1872** Contract Law- Essential Elements of Valid Contract – Types of Contract, Offer and Acceptance – Legal Rules – Communication of Offer, Acceptance and Revocation - Modes of Revocation of an Offer - Consideration – Legal Rules as to Consideration - Contract without Consideration - Stranger to a Contract - Free Consent- Undue Influence - Misrepresentation- Fraud- Mistake.	**10**
II	**Law Relating to Contracts** Legality of Object – Unlawful and Illegal Agreements – Effects of Illegality Agreements Opposed to Public Policy – Performance of Contracts - Discharge of Contracts - Remedies for Breach of Contract - Quasi Contracts.	**10**
III	**Bailment, Pledge and Law of Agency** Bailment and Pledge – Meaning – Rights and Duties of the Bailor and Bailee - Pledger and Pledgee - Law of Agency – Creation of Agency - Classification of Agents - Rights and Duties of Principal and Agent - Delegation of Authority - Relationship of Principal with Third Parties - Personal Liability of an Agent – Termination of Agency..	**10**
IV	**Sale of Goods Act, 1930.** Contract of Sale – Agreement to Sell and Sale – Sale and Hire Purchase Agreement - Sale and Bailment – Transfer of Ownership – Documents of Title to Goods – Price - Condition and Warranties – Caveat Emptor - Performance of Contract of Sale - Rights of Unpaid Seller.	**8**
V	**The Negotiable Instruments Act, 1881 , Partnership Act, 1932 and Limited Liability Partnership Act, 2008** The Negotiable Instruments Act, 1881 - Negotiable Instrument – Definition - Characteristics and Classification - Presentment of Instruments - Dishonour of Instruments and Remedies - Discharge of Instruments - Types of Hundis. The Indian Partnership Act, 1932 - Nature of Partnership - Rights and Duties of Partners - Registration and Dissolution of a Firm - Limited Liability Partnership Act 2008 - Formation – Membership – Functioning –Dissolution.	**10**
References	**Text Book** Kapoor N.D., "Elements of Mercantile Law", 37th Revised Edition, Sultan Chand & Sons, New Delhi, 2017. **Reference Books** 1. Shukla M.C., "A Manual of Mercantile Law", 13th Edition, Sultan Chand & Sons, New Delhi, 2016. 2. Sreenivasan M.R., "Commercial and Industrial Law", 2nd Edition, Margham Publications, Chennai, 2000.	

	3. Tulsian P.C., "Business Law", 3rd Edition Tata McGraw – Hill Publishing Co. Ltd., New Delhi, 2017. 4. Gogna P.P.S., "A Text Book of Mercantile Law" 11th Edition, S. Chand Company Ltd, New Delhi, 2015.
Course Outcomes	**On completion of the course, students will be able to** **CO1**: Understand the basic Concepts relating to Legal Contracts. **CO2:** Formulate legal contracts in the business context. **CO3:** Analyze the legal provisions relating to Contracts of Bailment, Pledge and Contract of Agency. **CO4:** Practice the law relating to Sale of Goods. **CO5:** Apply the knowledge for Negotiable Instruments and for establishing Partnership Firms.

Course Code & Title	18CBA17	STATISTICAL QUALITY CONTROL	
Class	II B.Com (Business Analytics)	Semester	IV

Course Objectives:

The course aims to

- Know the concepts of quality control and inspection.
- To construct different types of control charts are and used to monitor quality standards.
- Develop the knowledge about Total Quality Management.
- Understand the concepts of Process Capability Index (PCI).
- Learn the concept of reliability related to business area.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	**Statistical Quality Control:** Statistical Quality Control – Quality of a Product – Need for Quality Control – Benefit of Quality Control – Process Control – Control Charts for Variables and Attributes – Construction of x, R, C, p, np Charts Simple Problems.	12
II	**Acceptance Sampling:** Acceptance Sampling for Attributes – Producer's Risk and Consumer's Risk – Single Sampling Plan – OC, ASN, ATI, and AOQ Curves – Double Sampling Plan - OC, ASN, ATI, and AOQ Curves.	12
III	**Basics of Total Quality:** Basics of Total Quality – Evolution and Definitions of Quality – Need for Quality Improvement – TQM – Definitions – Fundamentals of TQM – TQM Models – ISO 9001:2000 Series Quality Control.	12
IV	**Process Capability:** Process Capability – Process Capability Index (PCI) – Interpreting PCI Statistical Process Control and Quality Improvement.	12
V	**Reliability:** Reliability – Definitions – Scope of Reliability – Exponential Distribution (Single Parameter) – Concept of Hazard Rate – Cumulative Hazard Rate – Concept of IFR and DFR – Constant Failure Rate – Failure Distribution – Simple Problems.	12

References:

Text Books:

1. "Introduction to Statistical Quality Control", Montgomery D.C, John Wiley &Sons, Mumbai, 7th edition, 2009.
2. "Quality Control and Industrial", Duncan,A.J. IrwinR.D, Irwin Professional Publishing, New Delhi, 4th Edition,1974.
3. "Total Quality Management Principles and Practice", Mandal S.K, Vikas Publishing House PVT. Ltd 1st Edition, 2005.

Reference Books:

1. "Fundamentals of Applied Statistics", Gupta.S.C&.Kapoor,V.K., Sultan Chand & Sons,New Delhi, 2001.
2. "Statistical Quality Control Theory and Practice"**, Wetherill** G. Band. Brown, D.W, Chapmann Hall, N.Y.3rd Edition, 1991.
3. "Total Quality Management", Poornima. M Charantimath, Pearson Publisher, New Delhi, 2nd Edition fourth impression, 2013.

Course Outcomes:

On completion of the course, students should be able to

- Understand the philosophy and basic concepts of quality improvement.
- Demonstrate the use of various methods of statistical process control.
- Design, use and interpret control charts for attributes and variables.
- Evaluate the principles of quality management and to explain how these principles can be applied within quality management systems.
- Perform analysis of process capabilities.
- Apply reliability analysis for real world problems.
- Get acquainted with various reliability predictions and evolution methods

Course Code **Title**	**18CBA18** **R PROGRAMMING**		
Class	**II B.COM (Business Analytics)**	**Semester**	**IV**
Course Objectives	**The Course aims to** • Build the knowledge on R Environment with basic commands using R Functions. • Familiarize the concepts of objects, modes and arrays. • Develop and understanding on how to create a list, dataframes and accessing built in datasets. • Impart knowledge of Grouping, Loops and Conditional Execution. • Elaborate the Graphical procedure low level and high level plotting.		

UNITS	CONTENT	HOURS
I	**Introduction, simple manipulation, numbers and Vectors** Introduction-The R Environment-Related Software and Documentation-R and Statistics-R and The Window System-Using R Interactively – Functions and Features – R Commands – Recall and Correction of Previous Commands-Executing Commands from or Diverting Output to a File – Data Permanency and Removing Objects. Simple Manipulations, Numbers and Vectors: Vectors and Assignment-Vector Arithmetic- Generating Regular Sequences-Logical Vectors-Missing Values-Character Vectors – Index Vector-Selecting and Modifying Subsets of a Dataset-Other Types of Objects.	**10**
II	**Objects arrays and matrixes** Objects, Modes and Attributes: Intrinsic Attributes- Mode and Length-Changing The Length of an Object-Getting and Setting Attributes – The Class of an Object .Ordered and Unordered Factors: The Functions Tapply() and Ragged Arrays – Ordered Factor, Arrays and Matrices: Array Indexing-Subsection of an Arrays-Index Matrices- The Array() Function- Mixed Vector and Array Arithmetic – The Recycling Rule- The Outer Product of Two Arrays-Generalize Transpose of an Array- Matrix Facilities- Matrix Multiplication.	**10**
III	**Lists and dataframes** Lists- Constructing and Modifying Lists – Concatenation – Data Frames – Making Data Frames Attach()and Deattach() – Working With Data Frames. Reading Data From Files:The Scan() Function Accessing Buit-In Datasets-Loading Data From Other R Packages	**9**
IV	**Grouping, Loops and Conditional Execution:** Grouped Expressions- Control Statements- Conditional Execution If Statements-Repetitive Execution For Loops, Repeat and While.	**10**
V	**Graphical Procedures:** High-Level Plotting Commands-The Plot() Function Displaying Multivariate Data- Display Graphics- Arguments To High Level Plotting Functions-Low Level Plotting Commands- Mathematical Annotation-Hersley Vector Fonts- Interacting With Graphics-Using Graphics Parameters-Graphics Parameters List	**9**

References

Text Book

1. W. N. Venables, D. M. Smith**,** "An Introduction to R- A Programming Environment for Data Analysis and Graphics'' Version 3.3.2 (2016-10-31).

Reference Book

1. Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshir, "An Introduction Statistical Learning: with Applications in R", Springer publications.Chennai.

	2. Brett Lantz ,"Machine Learning with R",Packt, 2nd Edition. 3. Kun Ren, "Learning R Programming", Packt, 2016. Colin Gillespie and Robin Lovelace **, "**Efficient R Programming: A Practical Guide to Smarter Programming",O'Reilly, 2016.
Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Learn R basic commands using vector and string manipulation. **CO2:** Create and apply concatenation function and learn how to read a data from files **CO3:** Understand and apply modes, factors and Matrices **CO4:** Apply control statements, repetitive execution for loops, repeat and while. **CO5:** Use skill to create High-Level Plotting commands with graphics parameters.

Course Code **Title**	**18CBA19** **COMPUTER PRACTICAL –IV (R PROGRAMMING)**		
Class	**II B.COM (Business Analytics)**	**Semester**	**IV**
Course Objectives	**The Course aims to** • Develop understanding on R concepts using vectors and matrix. • Familiarize with R functions to read files from other sources by using different datasets and drawing charts. • Enhance the knowledge of R concepts applied in ANOVA and PCA.		

LIST OF PROGRAMS	
1	Read a CSV & excel file and perform Subsets of dataset, Merging datasets
2	Create an R program: a) To add two vectors. b) To find sum, mean and product of vector. c) To generate random number from standard distributions d) To sample from a population.
3	Consider an experiment with Cars. Three different brands and four different models have been tested, and there are three replications for each of the 12 combinations. The production has been registered for each of the 36 units. The data are saved in the file cars.xlsx. Make a histogram of the production details. Moreover, compute the mean, median and standard deviation of the production variable.
4	Take the data from two different sources (files), and merge before analysis. And analyse the data set using charts.
5	Apply table () function to summarize the dataset, "Rental Units".
6	Draw a cumulative frequency graph using R with relevant data
7	Create R program to verify the age of Voting using Conditional Statement.
8	Analyse the Banking Crisis using two way ANOVA method.
9	As part of a large project on characterization of ecological zones, 11 environmental variables were measures at 30 sites along the Doubs River. The variables were distance from the source, i.e. from the start location (das), altitude (alt), slope (pen), mean minimum discharge (deb), pH of water (pH), concentration of calcium, phosphate, nitrate, ammonium, respectively (dur,pho, nit, amm), dissolved oxygene (oxy), biological oxygen demand (dbo). Perform PCA and make a plot for first two principal components.
10	Perform the following: Matrix computations, Transpose, Inverse matrix, Determinant

Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Apply statistical functions (mean, standard deviation, sampling). **CO2:** Understand merging Datasets and subset of datasets for applying in real time example. **CO3:** Implement R with Control statements and looping.

Course Code Title	**18CBA20** **Business Economics**		
Class	**II B.Com (Business Analytics)**	**Semester**	**IV**
Course Objectives	**The course aims to** • Explain the basic economic concepts relating to Business. • Familiarize various Cost Concepts. • Develop an understanding of Supply, Demand and Pricing in different market forms. • Comprehend the role of agriculture, industry and service sectors in the development of Indian Economy. • Build Knowledge on the macro economic factors of Indian Economy.		

UNITS	CONTENT	HOURS
I	**Introduction to Economics** Introduction to Economics - Definitions, Scope and Nature of Economics - Problems of an Economy – Role of Economic Indicators – Disinvestment - Globalization.	**12**
II	**Production and Cost** Meaning and Factors of Production - Laws of Production - Law of Variable Proportions and Laws of Returns to Scale - Concepts of Cost - Short Run and Long Run Cost, Average and Marginal Cost - Total, Fixed and Variable Cost.	**12**
III	**Demand, Supply and Forms of Market** Meaning and Determinants of Demand - Law of Demand and Elasticity of Demand - Price, Income and Cross Elasticity . Meaning and Determinants of Supply - Law of Supply and Elasticity of Supply. Forms of Market – Perfect Competition - Imperfect Competition – Monopoly, Duopoly, Oligopoly, Monopolistic Competition and Price Determination in these Markets.	**12**
IV	**Indian Economy & National Income** Nature of Indian Economy - Role of different Sectors - Agriculture, Industry and Services in the Development of the Indian economy, Problems and Growth. National Income of India - Concept of National Income - Different Methods of Measuring National Income and Gross Domestic Product.	**12**
V	**Select Aspects of Indian Economy** Population - Size, Rate of Growth and its Implication for Growth - Poverty Absolute and Relative Poverty - Main Programs for Poverty Alleviation and Employment - Types, Causes and Incidence of Unemployment - Infrastructure, Energy, Transportation and Communication - Health and Education - Inflation Budget and Fiscal Deficits.	**12**
References	**Text Books** Dr. Sankaran.S, "Business Economics",3rd Edition, Margham Publications, Chennai,2012. **Reference Books** 1. Sundaram K.P.M. & Sundaram E.N., "Business Economics", 67th edition Sultan Chand & Sons Publications, New Delhi, 2013. 2. Varshney R.L. & Maheswari K.L,"Managerial Economics", 22nd Revised Edition, Sultan Chand & Sons Publications, New Delhi, 2014 . 3. Metha P.L., "Managerial Economics" 22nd Edition, Sultan Chand &Sons	

	Publications, New Delhi, 2014. 4. Dwevedi D.N., "Essentials of Business Economics"1st Edition Vikas Publishing House Pvt Ltd, New Delhi, 2009.
Course Outcomes	**On completion of the course, students will be able to** **CO1:** Understand the role of Economics in Business. **CO2:** Analyze various Cost Concepts. **CO3** Summarize various aspects related to different Market Forms. **CO4:** Identify the role of different sectors in the growth of an Economy. **CO5:** Acquaint with various macro economic factors of Indian Economy.

Course Code **Title**	**18CBA21** **Income Tax**		
Class	**III B.Com (Business Analytics)**	**Semester**	**V**
Course Objectives	**The course aims to** • Develop an understanding on the Basic Concepts of Income Tax Act, 1961. • Expose to the tax provisions for Salary Income and Income from House Property. • Familiarize the provisions of Profits and Gains of Business and Profession and Capital Gains. • Impart knowledge on Income from Other Sources and Deductions u/s80. • Comprehend the income tax provisions relating to Set Off and Carry Forward of Losses and Computation of Gross Total Income.		

UNITS	CONTENT	HOURS
I	**Income Tax Act,1961** Income Tax Act, 1961 – Definitions - Agricultural Income, Assessee, Person, Income, Gross, Total Income , Assessment Year, Previous Year , Capital and Revenue Receipts and Expenses – Basis of Charge – Residential Status of an Individual, HUF, Firms, AOP and Company - Incidence of Taxation – Exempted Incomes – PAN – DIN.	**14**
II	**Salary and Income from House Property** Salary - Computation of Salary Income - Salary u/s 17(1) - Annual Accretion Allowances – Perquisites - Profits in lieu of Salary - Deduction u/s 16 - Rebate u/s 80C. Income from House Property-Exempted Income from House Property-Annual Value-Determination of Annual Value of Self Occupied and Let Out House. Deductions u/s 24.	**15**
III	**Profits and Gains of Business and Profession, Capital Gains** Profits and Gains of Business and Profession – Definition - Deductions Expressly Allowed and Disallowed – Depreciation. Capital Gains – Short Term Capital Gains - Long Term Capital Gains – Tax on Capital Gains.	**15**
IV	**Income from Other Sources & Deductions** Income from Other Sources – General Incomes u/s 56 (1)- Specific Incomes u/s56 (2)-Expenses u/s 57-Exempted Incomes-Deductions u/s 80C to 80U (Pertaining to Individuals and Companies).	**14**
V	**Set off and Carry Forward of Losses &Gross Total Income** Set off of losses - Carry forward and Set off of Losses – Clubbing of Income - Computation of Gross Total Income - Tax Deducted at Source – Advance Tax (Basic Theory).	**14**

References

Text Books

Gaur.V.P & Narang.D.B., "Income Tax Law and Practice", Kalyani Publishers, Ludhiana.

Reference Books

1. Dr. Mehrotra, "Income Tax Law and Practice", Sahitya Bhavan Publications, New Delhi.
2. DinkarPagare, "Law and Practice of Income Tax", Sultan Chand & Sons, New Delhi.

	3. www.incometaxindia.gov.in 4. www.allbusiness.com
Course Outcomes	**On completion of the course, students will be able to** **CO1**: Identify the Residential Status and Incidence of Taxation for various persons. **CO2:** Compute Income from Salary and House Property. **CO3:** Understand allowed and disallowed expenses relating to Profits and Gains of Business and Compute the taxable Capital Gains. **CO4:** Define the Income from other sources and the Deductions u/s80. **CO5:** Assess the Taxable Income of Individuals.

Course Code	**18CBA22**		
Title	**Logistics and Supply Chain Management**		
Class	**III B.Com (Business Analytics)**	**Semester**	**V**
Course Objectives	**The course aims to** • Elaborate the concepts of Logistics and Supply Chain Management. • Develop an understanding on Logistics Networks and their Performance. • Impart knowledge on Inventory and Vendor Management. • Familiarize Value of Information and MIS in SCM. • Explain the issues and challenges of Global Supply Chain Management		

UNITS	CONTENT	HOURS
I	**Introduction to Logistics and Supply Chain Management(SCM)** Concept of Logistics - Objectives - Importance of Logistics - Logistics Interface with Marketing - Relevance of Logistics to Export Management. Introduction to SCM - Functions - Objectives - Scope - Key Issues - Supply Chain Decisions and Tradeoffs.	**15**
II	**Logistics Distribution and Measuring Logistics** Introduction - Centralized and Decentralized Supply Chains - SCM Decision Making- MRP - Key features of Network Configuration - Transportation - Warehousing - Demand Forecasting – Cost Effectiveness – Quality and Time - Forth party Logistics.	**15**
III	**Inventory and Vendor Management** Introduction - Concepts of Material Management – Objectives – Inventory Control - Advantages and Disadvantages of Holding Inventories. Vendor Development - Vendor Selection - Vendor Performance - Monitoring - Vendor Rating - Contract Negotiations and Relationships - Vendor Relationship Management.	**14**
IV	**Value of Information and MIS in SCM** The Bullwhip Effect in Logistics - Quantifying Bullwhip Effect - Lead Time - Production - Developing Supply Chain as a Competitive Focus - Conflicting Objectives of SCM. MIS in SCM - International Co-ordination- Database System Architecture - Communications in SCM.	**14**
V	**Managing Global SCM and Current Issues in SCM** Challenges in Global Logistics - Planning and Organizing in Global Logistics - Communication and Co-ordination at Global level - Procurement of Services - Value Engineering and Value Analysis Concept - Green Supply Chain - Rural Supply Chain Management - Quality in Supply Chain.	**14**

References

Text Books

1. Mohanty.R.T. and Deshmukh.S.G., "Supply Chain Management Theory and Practice", 1st Edition, Bistantra Management for Flat World, New Delhi, 2005.
2. JermyF.Shapiro, "Modelling the Supply Chain", 2nd Edition, Thomson Duxbury, Bangalore, 2006.

Reference Books

1. Badi.N.V., "Supply Chain Management",1st Edition, Vrinda Publications Pvt Ltd, Delhi, 2011.
2. Krishnaveni Muthiah,"Logistics Management and World Seaborne Trade", Himalaya Publishing House, Mumbai, 2011.
3. David Simchi-Levi, Edith Simchi-Levi, &PhilipKaminsky, "Designing and Managing the Supply Chain: Concepts, Strategies, and Case Studies," 3rd Edition, Tata McGraw Hill Education (India) Pvt. Ltd., New Delhi 2008.

	4 Martin Christopher, "Logistics & Supply Chain Management," 5th Edition, Pearson UK, 2016
Course Outcomes	**On completion of the course, students will be able to** **CO1**: Understand the significance of Logistics and Supply Chain Management. **CO2:** Analyse Logistics Networks and their performance. **CO3:** Exercise Inventory Control and Manage the Vendors effectively. **CO4:** Comprehend the knowledge on MIS in Supply Chain Management. **CO5:** Identify the issues and challenges of Global Supply Chain Management.

Course Code	**18CBA23**		
Title	**Big Data Analytics**		
Class	**III B.COM (Business Analytics)**	**Semester**	**V**
Course Objectives	**The Course aims to** • Develop an understanding on Big Data and Analytics using various Applications. • Familiarize with data collection, sampling and preprocessing. • Enhance the knowledge on algorithms of big data Trading, Risk and Credit Risk management. • Impart knowledge on Big Data technology, the cloud in big data and Mobile Business intelligence. • Develop various applications for fraud detection, web analytics and social media		

UNITS	CONTENT	HOURS
I	**Big Data and Analytics** Big Data and Analytics – Applications – Basic Nomenclature – Analytics Process Model – Job Profiles Involved – Analytics – Analytical Model Requirements.	12
II	**Data Collection, Sampling and Preprocessing** Data Collection, Sampling and Preprocessing – Types of Data Sources – Sampling Types of Data Elements – Visual Data Exploration and Exploratory Statistical Analysis Missing Values – Outlier Detection and Treatment – Standardization Data Categorization – Weights of Evidence Coding – Variable Selection – Segmentation.	12
III	**Industry and Big Data** Industry Examples of Big Data – Digital Marketing and the Non – Line World – Database Marketers, Pioneers of Big Data – Big Data and the New School of Marketing Fraud and Big Data – Risk and Big Data – Credit Risk Management – Big Data and Algorithmic Trading – Advertising and Big Data – Using Consumer Products as a Doorway.	12
IV	**Big Data Technology** Big Data Technology – The Elephant in the Room: Hadoop's Parallel World Old Vs New Approaches – Data Discovery: Work the Way People's Minds Work – Open Source Technology for Big Data Analytics – The Cloud and Big Data – Software as a Service BI – Mobile Business Intelligence is Going Mainstream – Crowd Sourcing Analytics – Inter and Trans Firewall Analytics.	12
V	**Applications** Applications – Credit Risk Modeling – Fraud Detection – Net Lift Response Modeling Churn Prediction – Recommender Systems – Web Analytics – Social Media Analytics Business Process Analytics.	12

References

Textbook

1. Wiley Baesens ,"Analytics Big data World - The Essential Guide to Data Science and its Applications", Wiley, 2014.
2. Minelli Chambers Dhiraj,"Big Data Big Analytics - Emerging Business Intelligence and Analytics Trends for Today's Businesses", Wiley, 2013.

Reference Books

1. James R Evans, "Business Analytics- Methods, Models and Decisions", Pearson education India Chennai.2013.

	2. R.N Prasad, Seema Acharya, "Fundamentals of Business Analytics", Wiley, 2015. 3. Wayne.L.Winston, "Marketing Analytics : Data driven techniques with MS-Excel ", Wiley, 1st ed. 2014. 4. Furht Borko, Villanustre,Flavio,"Big Data Technologies and Applications", Springer,2016. Jeffrey Ohlmann , James J. Cochran, Michael Fry , Jeffrey D. Camm, "Essentials of Business Analytics", kindle edition,2014.
Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Learn Analytical process model and its requirements. **CO2:** Implement outliers detection, Standardization Data Categorization. **CO3:** Understand industry examples of Big data in Line World, Database Marketers and Pioneers of Big Data **CO4:** Implement market basket analysis and finding frequent item dataset. **CO5:** Apply Crowd Sourcing Analytics and Firewall Analytics.

Course Code & Title	18CBA24	ACTUARIAL STATISTICS	
Class	III B. Com (Business Analytics)	Semester	V

Course Objectives:

The course aims to

- Provide specialized skills in the field of Actuarial Science.
- Give knowledge on the basic mathematical calculations needed for insurance.
- Understand the concept of mortality tables for insurance.
- Insight the knowledge of calculation of premiums.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	Principles of Compound Interest: Compound interest - Compound amount - Nominal and effective rates - Discount - Varying rates of interest - Equation of values and equated time of payment – Simple problems.	08
II	Annuities: Definitions – Immediate annuities, Annuity due – Derivation of the formula for present value of immediate annuities $(a_{n\urcorner})$ and annuity due $(\ddot{a}_{n\urcorner})$ - Derivation of the formula for accumulative value of immediate annuities $(s_{n\urcorner})$ and annuity due $(\ddot{s}_{n\urcorner})$ - Relationship between $a_{n\urcorner}$ and $s_{n\urcorner}$ – Deferred annuity: Definition - Derivation of the formula for deferred immediate annuity $(m\vert a_{n\urcorner})$ and deferred accumulative annuity $(m\vert s_{n\urcorner})$ – Redemption of loan - Simple problems.	12
III	Mortality: Introduction - Mortality tables – Select and Ultimate Tables – Stages involved in construction of mortality tables.	10
IV	Pricing: Introduction – Basic elements in computation of Life insurance Premium – Premium Calculation – Level Annual and Net Premium Calculation- Formula for calculation of Net premium. Types of assurance: Term assurance, Pure endowment, Endowment assurance and whole life assurance – Expression for present value of assurance benefits under - Temporary assurance, Pure endowment, Endowment assurance and whole life assurance. – Simple problems.	15
IV	Commutation functions: Dx, Nx, Cx, Mx and Rx – Derivation of expected present values of Term assurance, Pure endowment, Endowment assurance and whole life assurance though commutation functions. Expected present value calculation of life annuities and temporary annuities – Calculation of net premiums using commutation functions – Simple problems only based on commutation functions with 6% of interest.	15

Note: 60%Theory and 40%problems.

References:

Text Books:

1. "Elements of Actuarial Science", K. C. Mishra and C. S. Kumar, Cengage Learning India Pvt. Ltd, 2009.
2. "Mathematical Basis of Life Assurance (IC-81)", Published by insurance institute of India, Bombay, 2000.

Reference Books:

1. "Actuarial Statistics an introduction using R", Shaillaja R Deshmuk, University Press, India, 2009.

2. "Theory and Problems of Mathematics of Finance", Frenk Ayres, J. R, Schaum's outline series, McGraw-Hill book Company, Singapore, 1983.
3. "Analysis of Mortality and other Actuarial Statistics", Benjamin and pollard, J. H, 2nd edition, Heinemann, London, 1980.
4. "Fundamentals of Applied Statistics", Gupta, S. C and Kapoor, V. K, Sultan Chand and sons, New Delhi, 2001.

Course Outcomes:

On completion of the course, students should be able to

- Understand the basic probability and calculation methods of interest rates.
- Define the annuities and its calculations.
- Construct the mortality tables.
- Calculate the insurance premiums.

Course Code	18CBA25A	Discipline Specific Elective – I - Financial Management Techniques	
Title			
Class	III B.Com (Business Analytics)	Semester	V
Course Objectives	**The course aims to** 1. Comprehend the Financial Management Functions and understand the Time Preference for Money. 2. Acquaint knowledge on the various techniques of Financial Statement Analysis. 3. Familiarize the Capital Budgeting Techniques 4. Impart knowledge on Cost of Capital and Capital Structure Theories. 5. Summarize the concepts relating to Working Capital Management.		

UNITS	CONTENT	HOURS
I	**Financial Management and Time Preference for Money** Financial Management – Meaning and Scope – Objectives – Key Financial Decisions - Functional Areas of Financial Management – Organization of Finance Function. Concepts of Value and Return – Time Preference and Money – Compounding and Discounting Techniques - Concept of Annuity.	15
II	**Financial Statement Analysis** Financial Statement Analysis - Types and Techniques of Financial Statement Analysis - Comparative Statements - Common Size Statements - Trend Analysis - Ratio Analysis – Liquidity, Solvency, Activity, Profitability ratios.	15
III	**Capital Budgeting Techniques** Capital Budgeting – Meaning, Purpose, Objectives and Process – Types of Projects - Techniques of Decision Making - Pay Back Period Method, Accounting Rate of Return Method, Net Present Value Method, Internal Rate of Return method, Discounted Payback Period and Profitability Index Methods – Ranking of Competing Projects.	14
IV	**Cost of Capital and Capital Structure** Cost of Capital – Meaning – Importance – Specific Cost of Capital – Cost of Debt - Cost of Preference Capital – Cost of Equity Capital – Cost of Retained Earnings - Weighted Average Cost of Capital. Capital Structure - Meaning and Importance - Capital Structure Theories – Net Income Approach – Net Operating Income Approach - Traditional Approach - Modigileni Miller (MM) Model- Long Term Sources of Finance.	14
V	**Working Capital Management** Working Capital – Meaning – Importance –Types – Working Capital Cycle - Determinants of Working Capital – Sources of Working Capital.	14
	Distribution of Marks : 60% Problems and 40% theory	

References

Text Books

Sharma R.K & ShashiK.Gupta,"Financial Management" 8th Edition, Kalyani Publishers, New Delhi, 2015.

Reference Books

1. Maheswari S.N, "Elements of Financial Management", 11th Revised Edition, Sultan Chand & Sons, New Delhi, 2014.
2. Khan M.Y. and Jain P.K, "Basic Financial Management", 3rd Edition Tata McGraw-Hill Publishing Company Limited, New Delhi, 2012.

	3. Pandey I.M. "Essentials of Financial Management", 4th Edition, Vikas Publishing House Pvt Ltd, New Delhi, 2015. 4. Prasanna Chandra, "Fundamentals of Financial Management", 6th Edition, McGraw-Hill Education (India) Private Limited, New Delhi, 2017.
Course Outcomes	**On completion of the course, students will be able to** **CO1**: Understand the basic concepts of Financial Management. **CO2:** Apply the knowledge of Techniques of Financial Statement Analysis. **CO3:** Evaluate and identify the Best Investment Alternatives. **CO4:** Measure Specific Cost of Capital and frame Optimum Capital Structure of the Business Organization. **CO5:** Understand the significance of Working Capital for an organisation**.**

Course Code	18CBA25B	Discipline Specific Elective – I - Working Capital Management	
Title			
Class	III B.Com (Business Analytics)	Semester	V
Course Objectives	The course aims to • Develop an understanding on the basic concepts of Working Capital Management. • Acquaint knowledge on financing of Working Capital. • Familiarize the Techniques of Receivables Management. • Impart knowledge on Cash and Inventory Management. • Explain the various aspects relating to assessment of Working Capital.		

UNITS	CONTENT	HOURS
I	**Introduction to Working Capital Management** Working Capital Management – Meaning – Objectives – Working Capital Policies - Factors affecting Working Capital Requirements – Forecasting of Working Capital Requirements - Working Capital Management – Theories and Approaches.	15
II	**Financing of Working Capital** Financing of Working Capital – Working Capital Financing Mix - Financing of Working Capital by Banks – Measuring the Working Capital.	15
III	**Receivables Management** Receivables Management – Meaning – Objectives - Cost of Maintaining Receivables - Factors Influencing Size of Receivables - Forecasting the Receivables – Dimensions of Receivables Management.	14
IV	**Cash and Inventory Management** Cash Management – Managing Cash Flows – Determining Optimum Cash Balance. Inventory Management – Meaning, Nature, Benefits, Risk and Cost of Inventory Management – Tools and Techniques of Inventory Management.	14
V	**Working Capital Control** Working Capital Control and Banking policy – Committee Recommendations on Working Capital – New System of Assessment of Working Capital Finance. Money Market Instruments - Bank Finance - Assessment and Appraisal – Managing Corporate Liquidity and Financial Flexibility.	14

References

Text Books

V.K.Bhalla, "Working Capital Management", Text and Cases, 13th Edition, Anmol Publications, New Delhi, 2011.

Reference Books

1. Maheswari S.N., "Elements of Financial Management", 11th Revised Edition, Sultan Chand & Sons, New Delhi, 2014.
2. Khan M.Y. and Jain P.K., "Basic Financial Management", 3rd Edition, Tata McGraw-Hill Publishing Company Limited, New Delhi, 2012.
3. Pandey I.M. "Essentials of Financial Management", 4th Edition, Vikas Publishing House Pvt Ltd, New Delhi, 2015.
4. Prasanna Chandra, "Fundamentals of Financial Management", 2nd Edition, McGraw-Hill Education (India) Private Limited, New Delhi, 2015.

Course Outcomes

On completion of the course, students will be able to

CO1: Develop knowledge on the Basic Concepts of Working Capital management.
CO2: Identify the various sources of Working Capital Finance.
CO3: Understand the various dimensions of Receivables Management.
CO4: Apply the various techniques of Cash and Inventory Management.
CO5: Adapt to the new system of assessment of Working Capital Finance.

Course Code **Title**	**18CBA26** **Internship**		
Class	**III B.Com (Business Analytics)**	**Semester**	**V**

Students shall undergo practical training in industries and business establishments during the II year summer holidays for a period of Twenty days. They should maintain a work dairy during the training programme and submit a report of the training they underwent. This is evaluated for 100 marks (CA:40 marks CE: 60 marks)

Course Code **Title**	**18CBA27** **Fundamentals of Banking and Insurance**		
Class	**III B.Com (Business Analytics)**	**Semester**	**VI**
Course Objectives	**The course aims to** • Elaborate the Banking System in India. • Develop the knowledge on KYC norms. • Build knowledge on the various innovative services offered by the Banks • Explains the principles and terms of Insurance. • Familiarize the products of life Insurance and Non-Life Insurance.		

UNITS	CONTENT	HOURS
I	**Banking System in India - An Overview (Constitutions and Functions)** Origin of Banking – Banking System - Indigenous Bankers – Commercial Banks - Co-operative Banks – Regional Rural Banks - Foreign Banks – Payment Banks - Reserve Bank of India – Import Export Bank of India.	**10**
II	**Banker and Customer, Deposits and Advances** Banker – Customer - Relationship between Banker and Customer - Types of Deposits - Account Opening – Know Your Customer Guidelines – Pass Book- Types of Customers. Secured and Unsecured Advances – Principles of Sound Lending - Modes of Charging - Security - Lien – Pledge – Mortgage – Assignment - Hypothecation - Cash Credit - Overdraft – Bank Guarantee - Letter of Credit.	**10**
III	**Service Channels of Banks** Alternate Channels– ATM– Internet Banking – Phone Banking – Payment and Remittance Services – Pay Order– Draft – Electronic Fund Transfer – Intra-Branch, Inter-Branch, Inter-Bank, NEFT, RTGS. Allied Services – Safe Keeping, Advisory Services – Demat Services - Credit Card- Debit Card.	**8**
IV	**IRDAI , Insurance and Types of Insurance** Insurance – Definition - Nature and Scope – Principles of Insurance – Functions of Insurance - Role and Importance of Insurance - IRDAI – Life Insurance Contract - Definition – Features – Types of Assurances – Role of Actuaries.	**10**
V	**Non-Life Insurance** Fire Insurance – Definition – Kinds of Policies - Marine Insurance – Definition – Contract - Elements – Policies - Difference between Fire and Marine Insurance – Miscellaneous and Health Insurance – Basic concepts of Natural Premiums, Level Premiums, Office Premiums.	**10**
References	**Text Books** 1. Gordan.E. & Natrajan.K.,"Banking Theory Law and Practice", 24th Edition, Himalaya Publishing House, New Delhi, 2016. 2. Mishra M.N.& Mishra S.B, "Insurance Principles and Practice", 22nd Edition, Sultan Chand & Sons, New Delhi, 2016. **Reference Books** 1. Sundharam K.P.M. &Varshney P.N., "Banking Theory Law and Practice", Sultan Chand & Sons, New Delhi, 2003. 2. Kaptan.S.S., " New Concepts in Banking", 1st Edition, Sarup & Sons, New Delhi, 2002. 3. Mittal A., Gupta S. L., "Principles of Insurance and Risk Management", 3rd Edition., Sultan Chand & Sons, New Delhi, 2013.	

	4. Gupta P. K., "Insurance and Risk Management", 2nd Edition, Himalaya Publishing House, Mumbai, 2017. 5. Mishra M.N., "Modern Concepts of Insurance", Sultan Chand & Sons, New Delhi.
Course Outcomes	**On completion of the course, students will be able to** **CO1**: Identify various functions of banking companies in India. **CO2:** Understand the significance of KYC norms. **CO3:** Analyze the various innovative services offered by the Banks. **CO4:** Describe the principles and terms of Insurance. **CO5:** Comprehend the knowledge on various products of Life Insurance and Non-Life Insurance.

Course Code **Title**	**18CBA28** **Marketing and Marketing Research**		
Class	**III B.Com (Business Analytics)**	**Semester**	**VI**
Course Objectives	**The course aims to** • Develop an understanding on the concepts of Marketing and Product policies. • Familiarize with the Pricing and Distribution channels. • Outline the Promotional Strategies and Consumer Buying Decision Process. • Elaborates Marketing Research Process. • Impart knowledge on Data Analysis and Report Writing.		

UNITS	CONTENT	HOURS
I	**Marketing Concept, Market Segmentation and Product Mix** Marketing – Meaning – Concepts – Functions – Marketing Mix - Modern Marketing Features - Market Segmentation. Classification of Products -Product Mix – New Product Decision – Product cycle – Product portfolio Matrix.	**12**
II	**Pricing and Distribution Channels** Pricing – Policies - Types of Pricing – Pricing Strategies. Channels of Distribution -- Factors influencing the Selection of Channels – Types of Channels.	**12**
III	**Promotional Strategies and Consumer Behavior** Advertising – Objectives - Kinds - Benefits - Media Planning – Advertising Copy – Pre and Post Testing – Sales Promotion -Types and Techniques – Personal Selling. Consumer Behaviour - Consumer Buying Decision Process - Buying Motives of Consumers.	**12**
IV	**Marketing Research** Marketing Research – Definition – Sources of Marketing Research – Methods of Marketing research – Techniques of Marketing Research. Sampling Design - Data Collection – Methods of Data Collection - Questionnaire Design – Pre-testing of Questionnaire – Interviewing - Observation – Pilot Study.	**12**
V	**Data Analysis and Report Writing** Data Analysis – Coding, Editing and Processing – Statistical Tools for Analysis and Interpretation of Data – Report Writing- Types – Layout- Steps Precautions taken while writing Report.	**12**

References	**Text Books** Rajan Nair N. & Sanjith, R.Nair.,"Marketing", Sultan Chand & Sons, New Delhi 2017. **Reference Books** 1. Rajan Nair N., "Marketing", 1st Edition, Sultan Chand & Sons, NewDelhi,1980 . 2. Gupta C.B. & Rajan Nair., "Marketing Management", 19th Revised Edition Sultan Chand & Sons, NewDelhi, 2018. 3. Sherlekar S.A., "Principles of Marketing", Himalaya Publishing House, Mumbai, 2010. 4. Rajendra Nargundkar.,"Marketing Research", 3rd Edition, McGraw Hill Education (India) Private Limited, New Delhi, 2017.
Course Outcomes	**On completion of the course, students will be able to** **CO1:** Understand the role of Marketing in the competitive Business World. **CO2:** Identify appropriate Product and Pricing Policies.

	CO3: Apply the knowledge of Promotional Strategies and Consumer Behavior. **CO4:** Develop knowledge on Marketing Research Process. **CO5:** Analyse the Data with appropriate statistical tools and draft the Research Report.

Course Code & Title	18CBA29	DATA ANALYSIS USING SPSS	
Class	III BCom (Business Analytics)	Semester	VI

Course Objectives:

The course aims to

- Train the students to gain knowledge in the statistical software (SPSS) packages for problem solving.
- Introduce the basic functions of SPSS.
- Train the students for making graphs and diagrams.
- Provide the students with the skills to use SPSS for processing and analyzing statistical data sets.
- Train the students to process data and generate outputs.

SYLLABUS

UNIT	CONTENT	No. of Hours
I	**Introduction of SPSS** SPSS – Introduction, Opening a Data File, Data view, variable view, Running an Analysis – Viewing Results, Creating Charts. Importing and Exporting Data Files. Transform (Recode into same variables, Recode into Different Variables) – Selected Cases Sorting Data, Split File Processing – Sorting Cases for Split – File Processing.	12
II	**Syntax:** Syntax for opening data file, creating variables, assigning value to variables, Transform (Recode into same variables, Recode into Different Variables) – Selected Cases Sorting Data, Split File Processing – Sorting Cases for Split – File Processing.	12
III	**Compute Variables:** Arithmetic - Abs, Cos Exp, Lg10, Ln, Sin, Mod, Sqrt, trunc. **Conversion** – Number, string. **Date Arithmetic** – Datediff, Datesum. **Statistical** – Cfvar, Max, min, Mean, SD, Sum, Variance. **String -** Lower, length and Syntax.	12
IV	**Diagrams, Graphs, Compare Means and Reliability Analysis:** Diagrams And Graphs – Bar, Line, Dot, Pie Charts – Descriptive Statistics (Frequencies, Descriptive, Crosstabs) – Compare Means – One Sample T–Test, Independent Samples T-Test And Paired T-Test. Reliability Analysis: Alpha, Split-Half, Guttman.	12
V	**One-way ANOVA – Correlation – Regression** One-way ANOVA – Correlation – Bivariate, Partial and Multiple – Regression - Linear Regression. **Non –parametric test:** Data Reduction – Non –parametric test – Run, Chi-square, One sample K-S test, Two Sample K-S test.	12
References:	**Text Books:** 1. "Discovering Statistics using IBM SPSS Statistics", Andy Field, SAGE Publications Limited; Fourth edition, 2003. 2. "SPSS in Simple Steps", Smruti Bulsari, Sanjay Sinha Kiran Pandya, Dreamtech Press, 2011. 3. "Performing Data Analysis Using IBM SPSS", 1st Edition,	

	Lawrence S. Meyers, Glenn C. Gamst, A. J. Guarino, Publisher: Wiley; 1 edition, 2013. **Reference Books**: 1. "Practical Data Analysis", Hector Cuesta, Packt Publishing Limited, 2013. 2. "Statistical Data Analysis: A PracticalGuide", Milan Meloun , Woodhead Publishing India; 1 edition, 2011. 3. "SPSS Statistics for Data Analysis and Visualization", Keith McCormick, Jesus Salcedo, Jason Verlen, Jon Peck, Andrew Wheeler, Wiley; 1 edition, 2017. "Statistical Methods", Gupta S.P, Sultan Chand & Sons, New Delhi. 2012	
Course Outcomes	**On completion of the course, students should be able to** • Use the basic functions of SPSS • Process data and generate statistics for some demographic variable analysis. • Generate graphs and diagrams for data analysis. Process data and generate outputs using SPSS software.	

Course Code & Title	**18CBA30** **Data Mining and Business Intelligence**		
Class	**III B.Com (Business Analytics)**	**Semester**	**VI**
Course Objectives	**The Course aims to** • Develop an understanding the lifecycle of Business Intelligence, basic concepts of Data Warehousing. • Explain the architecture of Business Intelligence, OLAP and OLTP operations. • Impart knowledge in Data mining , KDD process and Dimensionality reduction • Apply Association Rule Mining, Apriori algorithm, concepts of clustering and classification. • Develop applications for Business Intelligence and Data Analytics.		

UNITS	CONTENTS	HOURS
I	**Overview and Concepts of Data Warehousing and Business Intelligence** Reporting and Analysing data, Raw data to Valuable Information –Lifecycle of Data Business Intelligence – BI and DW in today's Perspective – Data Warehousing – The Building Blocks: Defining Features – Data Warehouses and Data 1marts – Overview of the Components – Metadata in the Data Warehouse – Need for `Data Warehousing Basic Elements of Data Warehousing – Trends in Data Warehousing.	**8**
II	**The Architecture of BI and DW** BI and DW Architectures and its Types - Relation between BI and DW - OLAP (Online Analytical Processing) Definitions - Difference between OLAP and OLTP Dimensional Analysis - What are Cubes? Drill-down and Roll-up - slice and dice or rotation - OLAP models - ROLAP versus MOLAP - Defining Schemas: Stars, Snowflakes and Fact Constellations .	**10**
III	**Introduction to Data Mining (DM)** Motivation for Data Mining - Data Mining-Definition and Functionalities Classification of DM Systems - DM task primitives - Integration of a Data Mining System with a Database or a Data Warehouse - Issues in DM – KDD Process -Data Pre-processing : Data cleaning: Missing Values, Noisy Data - Data Integration and Transformation - Data Reduction: Data cube aggregation, Dimensionality reduction - Data Compression - Numerosity Reduction	**10**
IV	**Concept Description and Association Rule Mining** Concept Description - Data Generalization and Summarization-Based Characterization Attribute Relevance - Class Comparisons Association Rule Mining: Market Basket Analysis – Basic Concepts - Finding Frequent Item Sets: Apriori Algorithm Generating Rules – Improved Apriori Algorithm – Incremental Arm – Associative Classification – Rule Mining –Clustering Techniques – Classification Techniques Decision Trees	**10**

V	**Data Mining for Business Intelligence Applications** Data mining for business Applications like Balanced Scorecard, Fraud Detection, Click stream Mining, Market Segmentation, Retail Industry, Telecommunications Industry, Banking & Finance and CRM etc., Data Analytics Life Cycle: Introduction to Big data Business-Analytics - State of the Practice in Analytics role of Data Scientists Key roles for Successful Analytic Project - Main phases of Life-cycle - Developing Core Deliverables for Stakeholders.	**10**
References	**Text Books** 1 Han J. & Kamber M, "Data Mining Concepts and Techniques", Morgan Kaufmann 2. Kantardzic M, "Data mining: Concepts, models, methods and algorithms, John Wiley & Sons Inc New Delhi. **Reference Books** 1. Paulraj Ponnian, "Data Warehousing Fundamentals", John Willey New Delhi. 2. Dunham M, "Data Mining: Introductory and Advanced Topics", Pearson Education India Chennai 3. Shmueli G, Patel N.R., &. Bruce P.C. "Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner", Wiley India New Delhi.	
Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Learn concepts of BI, Data marts and trends in data warehousing. **CO2:** Define schemas and Cubes to the real time datasets. **CO3:** Understand and apply Database smoothening techniques. **CO4:** Implement market basket analysis and to find frequent item dataset. **CO5:** Create real time applications using data mining techniques.	

Course Code Title	18CBA31 Strategic Management		
Class	III B.Com (Business Analytics)	Semester	VI
Course Objectives	The course aims to • Comprehend the basic concepts of Strategic Management. • Explains the key contents of Strategic Formulation. • Build Knowledge on Strategy Implementation Frame work. • Develop an understanding of Organizational change and Innovation. • Impart knowledge on Strategic Evaluation and Control.		

UNITS	CONTENT	HOURS
I	**Introduction to Strategic Management** Strategic Management – Definition - Conceptual Framework for Strategic Management – Policy – Strategy – Tactics - Strategic Management Process	10
II	**Strategic Formulation** Organizational Mission, Objectives and Business Ethics – Environmental Analysis - Industry and Competition Analysis – Techniques of Environmental Analysis - Organizational Analysis – Competitive Advantages – Types of Competitive Advantage – Approaches for Competitive Advantages – Generic Competitive Strategy.	10
III	**Strategy Implementation** Grand Strategies - Growth Strategies – Choice of strategies – Framework for Strategy Implementation – Structural Implementation – Functional Implementation - Behavioural Implementation – Leadership – Strategic Leadership - Role of Leadership in Strategic Implementation – Leadership Styles - Effective Leadership.	10
IV	**Organizational Change and Innovation** Nature of Organizational Change – Process of Management of Change – Resistance to Change – Factors in Resistances to Change – Overcoming Resistance to Change Innovation – Innovation Generation – Innovation Diffusion – Learning organization..	10
V	**Strategy Evaluation and Control** Concept of Strategic Evaluation and Control- Framework for Strategic Evaluation and Control – Barriers in Strategic Evaluation and Control – Stages of Control – Control Process - Criteria of Business Success - Techniques of Strategic Evaluation and Control.	8

References

Text Book

Prasad.L.M., "Business Policy Strategic Management", Sultan Chand & Sons,New Delhi 2007.

Reference Books

1. Ghosh.P.K.,"Business Policy, Strategic Planning and Management", Sultan Chand & Sons, New Delhi.
2. Thosmpson & Strickland, "Strategic Management - Concepts & Cases", 8th Edition McGraw Hill Education (India) Pvt., Ltd. New Delhi, 2008.
3. Vipin Gupta, Kamala Gollakota & Srinivasan.R "Business Policy and Strategic Management," 2nd Revised Edition, PHI Learning Private Limited, New Delhi, 2007.
4. John A. Parnell, "Strategic Management: Theory and Practice," 4th Edition, Sage Publications, New Delhi, 2013.

Course Outcomes	**On completion of the course, students will be able to** **CO1**: Build knowledge on the concepts of Strategic Management. **CO2**: Formulate the organizational Vision, Mission and objectives. **CO3**: Develop Strategies for Implementation. **CO4:** Identify the key issues affecting Organizational Changes and support better Innovative Practices. .**CO5**: Understand the Strategic Evaluation and Control Process.

Course Code **Title**	**18CBA32** **Computer Practical V (Data Mining and Business Intelligence)**		
Class	**III B.COM (Business Analytics)**	**Semester**	**VI**
Course Objectives	**The Course aims to** • Build knowledge on Data Mining, Data Warehousing and Business Intelligence concepts using various algorithms. • Apply KDD process (preprocessing) to the real time datasets. • Elaborate Association rule and Apriori algorithm to healthcare dataset		

LIST OF PROGRAMS	
1	Use unsupervised attribute filters algorithm to find a file.
2	Use supervised attribute filters algorithm to find a file.
3	Implementation of preprocessing on student dataset.
4	Implementation of preprocessing on labour dataset.
5	Implementation of Association rule process on shopping dataset using apriori algorithm.
6	Implementation of Association rule process on real time dataset using apriori algorithm.
7	Implementation of classification rule process on healthcare dataset.
8	Implementation of classification rule process on company purchase dataset.
9	Implementation of clustering rule process on patient dataset.
10	Implementation of clustering rule process on vehicle purchase dataset.

Course Outcomes	**On completion of the course, Students will be able to** **CO1:** Implement Benchmark algorithms (clustering and classification) to real time Datasets. **CO2:** Use supervised and unsupervised filters to find a file. **CO3:** Apply Clustering rule and classification rule for patient and vehicle dataset.

Course Code **Title**	**18CBA33** **Project Work**		
Class	**III B.Com (Business Analytics)**	**Semester**	**VI**

Project work will be assigned to the students on the basis of group under the supervision and guidance of the faculty members in the areas of Marketing, Finance and Management with Computer and Statistical Techniques. The grouping may be done in such a way that it has minimum three and maximum five students. The Project Report shall be submitted jointly by the group, evaluated by the Internal and External Examiners but the marks will be awarded to each student separately by conducting Viva-Voce Examination**.**

Course Code **Title**	**18CBA34A** **Discipline Specific Elective – II -** **Security Analysis and Portfolio Management**		
Class	**III B.Com (Business Analytics)**	**Semester**	**VI**
Course Objectives	**The course aims to** • Develop an understanding on the basic concepts Security Analysis and Portfolio • Management. • Familiarize various Investment Avenues • Build knowledge on the measurement of Risk and Return . • Comprehend the concepts and theories relating to Portfolio Analysis • Develop the Knowledge on evaluating Portfolio Performance and Portfolio Revision		

UNITS	CONTENT	HOURS
I	**Introduction to Investments** Investments – Meaning – Features – Objectives - Investments Vs. Speculation - Types of Investors – Portfolio Management – Meaning - Phases – Evolution.	**12**
II	**Investment Avenues** Fixed Deposits and Investment in Government Securities- Investment in Equity Markets – Corporate Bonds – Features – Types – Preference Shares - Equity Shares - Mutual Funds – Types - Benefits – Real Estate – Gold and Silver.	**12**
III	**Risk and Return** Risk – Elements of Risk – Systematic Risk – Unsystematic Risk - Business Risk - Financial Risk – Measurement of Risk – Standard Deviation and Beta Calculation. Efficient Market Hypothesis - Risk Return Analysis.	**12**
IV	**Portfolio Creation and Portfolio Theory** Fundamental Analysis – Economic Analysis – Industry and Company Analysis - Technical Analysis - Dow Theory - Principles of Technical Analysis - Chart Patterns - Markowitz Model and Sharpe Model of Portfolio Optimization – Capital Asset Pricing Model – Capital and Security Market Line – Pricing of Securities with CAPM.	**12**
V	**Portfolio Evaluation and Revision** Portfolio Evaluation – Need – Measuring Portfolio Return, Risk, Adjusted Return - Decomposition of Performance. Portfolio Revision – Need - Constraints and Strategies.	**12**
References	**Text Book** Kevin S., "Security Analysis and Portfolio Management", 2nd Edition, PHI Learning Pvt. Ltd. New Delhi, 2015. **Reference Books** 1.Preeti Singh, "Investment Management -Security Analysis and Portfolio Management", 9th Edition, Himalaya Publishing House, New Delhi, 2000. 2.Dhanesh Kumar Khatri, " Investment Management & Security Analysis Text and Cases", 2nd Edition, Laxmi Publications, New Delhi, 2006. 3.Punithavathy Pandian, "Security Analysis and Portfolio Management", 2nd Edition, Vikas Publishing House Pvt. Ltd, New Delhi. 4.Sasidharan and Alex K Mathews, "Security Analysis and Portfolio Management", 1st Edition, Tata McGraw Hill Education (India) Pvt., Ltd. New Delhi, 2011.	

Course Outcomes	**On completion of the course, students will be able to** **CO1**: Understand the concepts of Security Analysis and Portfolio Management. **CO2:** Identify and analyze various Investment Avenues. **CO3:** Apply the knowledge of various Techniques in Measuring the Risk and Return on Investments. **CO4:** Create and manage a Portfolio. .**CO5:** Analyze and evaluate Portfolio Performance and Portfolio Revision.

Course Code Title	18CBA34B Discipline Specific Elective – II - Primary Market and Secondary Market		
Class	III B.Com (Business Analytics)	Semester	VI
Course Objectives	The course aims to • Develop an understanding on the basic concepts of Investment and Investment Avenues. • Build Knowledge on the structure of Various Financial Markets and Commodity Markets in India. • Comprehend the functions of Stock exchange. • Acquaint Knowledge on Legal aspects of Stock market operations. • Explain the trading Mechanism of Stock Market.		

UNITS	CONTENTS	HOURS
I	**Introduction and Various Avenues of Investment** Concepts of Investment - Elements of Investment - Need for Investment - Risk and Return on Investment - Investment in Government Securities, Shares, Insurance Policies, Mutual Funds, Bank Deposits, Provident Fund Schemes, Post office Schemes, Real Estate.	12
II	**Financial Markets** Financial Markets - Definition – Role – Functions - Constituents of Financial Markets - Primary Market - Secondary Market - Money Market- Capital Market - Debt Market - Eurobond Market- Equity Market- Financial Services Market- Depository Market - Commodity Market - FOREX Market- Financial Instruments - Capital Market Instruments.	12
III	**Stock Exchange** Definition - Functions- Stock exchange and Commodity Exchange Distinction - Listing agreement - Stock Exchange Powers - Listing Benefits Consequences of Non-Listing- New Entry Norms for Unlisted Companies – Suspension/Withdrawal of Listing	12
IV	**SEBI** SEBI Act – Objectives – Management - Powers and Functions - Regulatory Role - Investor Protection - Loss of Confidence of Small Investors – Causes - Rights of Investors - Facilities by BSE – Ombudsman.	12
V	**Stock Market Trading Mechanism** Stock Exchange Dealings - Share Prices- Factors affecting Share prices - Depository Participant (DP) - Depository (DEMAT)Services - DEMAT Account - Short comings of DEMAT System - Electronic Settlement of Share Trading - Indian Depository - Role of CDSL- Benefits - Role of NSDL- Online Stock Trading - Stock Market Index - Meaning- Features- SENSEX - CNX Nifty.	12
References	**Text Book** Dr.Gurusamy.S, "Capital Markets", Tata McGraw Hill Education (India) Pvt., Ltd. New Delhi, 2009. **Reference Books** 1. Balla V.K, "Investment Management,"13th ,Edition S.Chand&Co Ltd, New Delhi,2007. 2. Gordon.E and Natarajan.H, "Capital markets in India", 10th Revised Edition, Himalaya Publishing House, Mumbai, 2016. 3. Preeti Singh, "Investment Management -Security Analysis and Portfolio Management", 9th Edition Himalaya Publishing House, New Delhi,,2000. 4. Sanjeev Agarwal, "Guide to Indian Capital Market", 1st Edition Bharat Law House, New Delhi, 2000.	

Course Outcomes	**On completion of the course, students will be able to** **CO1:** Identify the various Investment avenues. **CO2:** Understand the functioning of Financial Markets And Commodity Markets**.** **CO3:** Describe the Functions of Stock Exchange. **CO4:** Translate the Legal aspects of Stock market operations**.** **CO5**: Apply the Knowledge of Stock Market Operations.

Title	**OFFICE MANAGEMENT**		
Class	**B.Com (Business Analytics)**	**Semester**	**I – VI**
Course Objectives	**The Course aims to** □ Familiarize the office work and office functions □ □ Expose the knowledge on office administration and office layout □ Build knowledge on office system and mechanization of office procedures □ □ Develop knowledge in managing and maintaining office records □ □ Impart knowledge on communication process and office correspondence		

UNIT	SYLLABUS
I	**Modern Office and Management** Introduction – Meaning – Office Work - Office Functions – Principles of Management - Elements - Functions of Office Management – Information Management – Organization -Characteristics - Importance – Benefits – Steps - Principles.
II	**Administration and Accommodation.** Administration – Objectives – Accommodation – Principles – Location – Office Layout – Re-Layout – New Trends in Office Layout – Office Lighting – Types – Benefits – Ventilation - Interior Decoration- Physical Hazards – Sanitary Requirements – Security – Secrecy - Cleanliness.
III	**Office System and Procedures** System Concept – Definition – System Analysis – Flow of Work – Role of Manager - Centralization vs Decentralization – Mechanization – Criteria – Types of Office Machines. Office Forms – Forms Control – Designing –Stationery.
IV	**Records Management** Records – Importance – Filing – Essentials - Classification and Arrangement of Files – Methods. Modern Filing Devices – Indexing – Types – Selection – Filing Routine – Manual – Retention Evaluation – Modern Techniques in Maintenance of Records .
V	**Communication and Office Correspondence** Importance – Barriers – Process – Characteristics – Office Correspondence – Mail Services Facilities – Arrangements – Mail Routines – Cost Reduction or Cost Saving – Areas – Methods – Budgetary Control.
References	**Text Book** **1.**Chopra R.K, "Office Organization and Management", 10th Revised Ed., Himalaya Publishing House, New Delhi, 2015. **Reference Books** **1.**Arora S P, "Office Organization and Management", 2nd Revised Ed., Vikas Publishing Pvt Ltd., New Delhi, 2006. **2.** Ghosh P K, "Office Management", 12th Enlarged Ed., Sultan Chand and Sons, New Delhi, 2010.
Course Outcomes	**On completion of the course, students will be able to** **CO 1:** Exhibit the knowledge and principles in office environment **CO 2:**Recollect the office administration structure and office layout **CO 3:**Identify appropriate flow of work and the criteria for mechanization **CO 4:**Apply the knowledge in managing office records **CO5:**Identify and utilize the effective communication channels for correspondence