



MASTER OF COMMERCE COMPUTER APPLICATIONS - FIRST SEMESTER
101 – BUSINESS ENVIRONMENT

(Common to M.Com and M.Com-Computer Applications- under CBCS)

Class Hours : 5 ppw

Credits: 5

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- Unit-I:** Business Environment – significance – Types of Environment – Internal and External Environment – Micro and Macro Environment – Environmental Analysis Stages – Approaches – Techniques of Environmental Analysis – Steps – Types and Techniques of Environmental forecasting – Benefits and limitations.
- Unit-II:** Economic Environment – Economic System – Capitalism – Communism and Mixed Economy – Economic Reforms – Economic Policies – Industrial Policies – Trade policies – Fiscal and Monetary Policies – Economic Development and Role of Government – Technological Environment – features – Impact – Technology transfer.
- Unit-III:** Politico – Legal Environment – Political Institutions – Legislative – Executive and judiciary – Constitution of India – Fundamental rights – Directive Principles of State policy – Business Responsibilities to Government – Government responsibilities to business – Legal framework of Business- Regulatory Institutions- TRAI-SEBI-IRDA- Electricity Regulatory Agencies- Central Electricity Regulatory Commission-Telangana State Electricity Regulatory Commission (TSERC) .
- Unit-IV:** Socio-Cultural Environment – Business and Society – Objectives of Business – Social Responsibilities of Business – Business and culture – Cultural dimensions – Social audit – Nature – Evolution – benefits – Social Audit in India – Business Ethics – Nature Sources – Managing Ethics – Corporate Governance – Nature and Mechanism.
- Unit-V:** Global Environment – Globalisation – Meaning and Dimensions –Stages – Drivers and effects of Globalisation – Players in Global Business – Benefits and problems of MNCs – Challenges of global Business – WTO and India – Foreign Direct Investment – (FDI) Foreign Institutional Investors (FIIS).

Suggested Readings

1. Francis Cherunilam, **Business Environment Text and Cases**, Himalaya Publishing House, Text and Cases, Himalaya Publishing House, 2014.
2. Aswathappa K, **Essentials of Business Environment**, Himalaya Publishing House, 2014.

References

1. Faisal Ahmed and Absar Alam.M, **Business Environment: Indian and Global Perspective**, Prentice Hall of India, 2014.
2. Veena Keshav Pailwar, **Business Environment**, Prentice Hall of India Private Limited, 2014.
3. Justin Paul, **Business Environment: Text and Cases**, Tata McGraw-Hill Publishing Company Limited, 2008.
4. Sukumar Nandi, **International Business Environment**, McGraw-Hill Education Company Limited, 2010.
5. Fernando A.C, **Business Environment**, Dorling Kindersley India Pvt. Ltd, 2011.
6. Ian Worthington and Chris Britton, **The Business Environment**, Pearson Education Limited, 2014.



102 - MANAGERIAL ECONOMICS

(Common to M.Com and M.Com-Computer Applications- under CBCS)

Class Hours: 5 ppw

Credits: 5

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- Unit-I:** Introduction to Managerial Economics – Nature – Scope – Applications of Micro Economics and Macro Economics – Need and Significance – Theory of firm - Business objectives of Organization
- Unit-II:** Demand and Supply Analysis – Concepts – Determinants of Demand – Law of Demand- Elasticity of Demand – Price Elasticity of Demand- Income Elasticity of Demand-Cross Elasticity of Demand- Supply function – Law of Supply – Exceptions to the Law of Supply – Demand forecasting – Objectives and methods
- Unit-III:** Production and Cost functions – Cobb Douglas Production function – Isoquants – Isocosts – Production Equilibrium – Returns to Scale – Cost function – Behaviour of costs in Short run and Long run – Economies and Diseconomies of Scale
- Unit-IV:** Structure of Competition – Price and Output decisions in Perfect Competition – Monopoly – Monopolistic Competition – Oligopoly – Barriers to Entry – Pricing – Dual Pricing – Discriminatory Price – Pricing methods and Strategies.
- Unit-V:** Concept of Industry – Plant – Firm - Industry – Factors influencing size of firm – Optimum firm – Location and size decisions – Measurement of Efficiency – Productivity – Profit-Policy – Planning- Controlling and Forecasting

Suggested Readings

1. Mote V.L., Paul Samuel, Gupta G.S., **Managerial Economics – Concepts and Cases**, Tata McGraw Hill Publishing Company Limited, 2013.
2. Varshney R.L., Maheshwari K.L., **Managerial Economics**, Sultan Chand and Sons, 2014.

References

1. Mehta P.L., **Managerial Economics**, Sultan Chand & Sons (P) Limited, 2007.
2. Joel Dean, **Managerial Economics**, Prentice-Hall of India Pvt. Limited, 2010.
3. Mithani, D.M., **Managerial Economics**, Himalaya Publishing House Pvt. Limited, 2010.
4. Robinson E.A.G., **Structure of Competitive Industry**, NISBET & Co. Limited, 1958.
5. Justin Paul, Leena Kaushal and Sebastian VJ., **Managerial Economics**, Cengage Learning India, 2012.
6. Christopher R.Thomas and Charles Maurice.S., **Managerial Economics**, McGraw Hill Education (India) Private Limited, 2014.



103 – CORPORATE FINANCIAL ACCOUNTING
(Common to M.Com and M.Com-Computer Applications- under CBCS)

Class Hours : 5 ppw

Credits: 5

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- Unit-I:** Company Accounts – Legal provisions relating to Company Accounts – Profit and Loss Account – Balance Sheet – Valuation of Shares and Goodwill – Methods(simple problems)
- Unit-II:** Accounting for Mergers and Amalgamations –Types of Restructuring –Nature of Merger and Amalgamation- Purchase Consideration –Exchange Ratio- Minimum and Maximum Exchange Ratio-Intrinsic Value of Share-Accounting Entries in the Books of Transferring Company- Accounting in the Books of Transferee Company- Pooling of Interest method – The Purchasing Method (simple problems)
- Unit-III:** Inflation Accounting – Meaning – Need – Scope – Approaches –Current Cost Accounting – Current Purchasing Power (simple problems)
- Unit-IV:** Investment Accounting – Meaning – Need – Investment Transactions – Ex-dividend – Cum – Dividend – Treatment of Interest and Dividend – Lease Accounting-Disclosure- Journal Entries- Schedule of Payment – Sale and Lease back Transactions (Simple problems)
- Unit-V:** Accounting of Public utilities – Nature – Significance – Public utility Accounts — Fund Accounting- Double Accounting – Accounting of Electricity Undertakings including Distribution of Surplus (Simple Problems) –Human Resource Accounting – Approaches.

Suggested Readings

1. Gupta R.L. and Radhaswamy M., **Advanced Accountancy**, Sultan Chand and Sons, 2014.
2. Jain SP. And Narang KL, **Advanced Accountancy**, Kalyani Publishers, 2013.

References

1. John Gabriel S., and Marcus A., **Financial Accounting**, Tata McGraw Hill Education Private Limited, 2010.
2. Bhattacharyya S.K., and John Dearden, **Accounting For Management: Text and Cases**, Vikas Publishing House Private Limited, 2009.
3. Shukla M.C., Grewal T.S., and Gupta S.C., **Advanced Accounts**, Sultan Chand Limited, 2006.
4. Narayana Swamy R., **Financial Accounting – A Managerial perspective**, PHI Learning Private Limited, 2014.
5. Mukherjee A., and Hanif M., **Corporate Accounting**, Tata McGraw-Hill Publishing Company Limited, 2006.
6. Rajasekaran V. and Lalitha R., **Financial Accounting**, Pearson Education, 2011.
7. Mukherjee A and Hanif M., **Financial Accounting**, Mc Graw Hill Pvt Ltd 2012



104 – FINANCIAL MANAGEMENT

(Common to M.Com and M.Com-Computer Applications- under CBCS)

Class Hours : 5ppw

Credits: 5

- UNIT-I: INTRODUCTION:** Finance Function – Concept, Classification, Scope, Goals and Functions of Finance, Risk-Return – Trade-off; **Forms of Business Organization** –Tax Environment, Financial Environment and Financial Regulation; **Time Value of Money** – Concept, Time Preference for Money, Present Values, Future Values and their Computation.
- UNIT-II: FINANCING DECISION: Capital Structure** – Concept, Source of Long Term Capital and their relative merits and demerits, Optimum Capital Structure, and Determinants of Capital Structure; **Cost of Capital** – Definition, Concepts of Cost, and Measurement of Specific Costs of Capital and Firm’s Weighted Average Cost of Capital; **Capital Structure and Firm’s Value** – Net Income Approach, Net Operating Income Approach, Traditional Position, Modigliani and Miller Position, and Taxation and Capital Structure; **Capital Structure Decision** - Leverage Analysis: Concepts of Operating and Financial Leverage and EBIT – EPS Analysis (Simple Problems).
- UNIT-III: INVESTMENT DECISION: Capital Budgeting Decision** – Meaning, Characteristics, Process and Significance; **Estimation of Cash Flows** – Elements of Cash Flow Stream and Basic Principles of their Estimation **Methods of Evaluating Alternative Investment Projects** – Payback Period, Adjusted Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Modified Internal Rate of Return, and Benefit-Cost Ratio(Simple Problems), Capital Rationing and Capital Budgeting; Inflation and Capital Budgeting.
- UNIT-IV: DIVIDEND DECISION: Dividend Policy and Firm’s Value** – Models in which Investment and Dividend Decisions are related- Walter and Gordon’s Models, Traditional Position, Miller and Modigliani Model(Simple Problems) - Financial Signaling; **Dividend Decision** – Types of Dividend, Stock Dividend, Stock-Splits, Bonus Shares, Share Repurchase and Managerial Considerations in Dividend Policy Formulation.
- UNIT-V: WORKING CAPITAL MANAGEMENT: Working Capital Decision** – Concept, Characteristics, Components, Operating Cycle, Cash Cycle, Determinants of Working Capital, and Estimation of Working Capital (Simple Problems); **Cash and Liquidity Management** – Objectives, Cash Budgeting – Cash Collection and Disbursement – Optimum Cash Balance, and Investment of Surplus Funds; **Credit Management** – Credit terms – **Credit** Policy Variables, Credit Evaluation and Granting Decision, and Control of Receivables; **Inventory Management** - Need, Objectives, Order Quantity, Monitoring and Control of Inventories; **Working Capital Financing** – Sources and Financing Strategies.

Suggested Readings:

1. Prasanna Chandra., **Financial Management- Theory and Practice**, Tata Mc Graw Hill Education (India) Private Limited, Eighth Edition, 2008.
2. Van Horne, James C., and Wachowicz John M. Jr., **Financial Management and Policy**, Pearson Education Inc., 2012.

References:

1. Brigham., and Ehrhardt, **Financial Management: Theory & Practice**, Cengage Learning, 2014.
2. Shashi K.Gupta, **Financial Management: Theory and Practice**, Kalyani Publishers, 1996.
3. Srivastava R.M., **Financial Management: Management and Policy**, Himalaya Publishing House, 2003.
4. Khan M.Y., and Jain P.K., **Financial Management**, Tata McGraw-Hill Education, 2007.
5. Pandey I.M., **Essentials of Financial Management**, Vikas Publishing House, 2014.
6. Hampton, John J., **Financial Decision making: Concepts, Problems and Cases**, Prentice Hall of India Learning, 2012



105 – BUSINESS ANALYTICS WITH SPREAD SHEETS
(For M.Com -Computer Applications- under CBCS)

Theory – 3 PPW

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Credits= 5

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- Unit I:** Concept of Business Analytics – Advantages – Evolution – Concept of Database in business – Metrics and measures of data – Data description – decision model – Steps in problem solving – What-if analysis – Introduction to Microsoft Excel – Excel window environment – Menus – spread sheet basics – Working with simple formulas-Formatting data in a cell – Cell references
- Unit II:** Copying text/values/formulas – searching data – sorting – Filtering using filters – Decision making with If condition (logical formulas) – Applying business related formulas – Working with Images –Numerical formatting with Round(), Int(), Ceiling() etc. – Split the view of sheet- Introduction to chart/Graph generation – Pivot Table- Statistical functions – Date & Time functions – Text functions - Financial Functions.
- Unit III:** Saving the worksheet in different forms – Exporting and Importing data from other Microsoft applications/packages/external databases - Working with graphic images – grouping/ungrouping – Usage of colors for the better presentation – Goal seek and Scenarios for “What-if” analysis – Formula auditing – Using Excel help – Simple Macros for automated actions- Print preview – Printing selected / full worksheet – Error correction – Protection of Worksheet.
- Unit IV:** Statistical Functions – Histogram - Mean – Median – Mode – Harmonic Mean – Geometric Mean – Average Deviation – Standard Deviation – Skewness- Data Analysis Tools – Correlation –Regression –F-test two-sample for variances - ANOVA – Single Factor - t-test paired two samples for mean – Z-test for two sample means.
- Unit V:** Financial Functions– Asset Depreciation Functions – AMORDEGRC – AMORLINC- DB – DDB – SLN – SYD – VDB. Concept of Time Value of Money - Interest Rate Functions – ACCRINT – ACCRINTM – EFFECT – INTRATE – NOMINAL – RATE.

Suggested Readings

1. James R.Evans., **Business Analytics**, Pearson Education, 2015.
2. Debra Gross., Frank Akaiwa and Karleen Nordquist, **Succeeding in Business with Microsoft Excel 2013: A Problem-Solving Approach**, Cengage Learning, 2014.

References

1. Curtis D.Frye, **Step by Step - Microsoft Excel 2013**, Microsoft Press Books, 2013.
2. Isaac Gottlieb, **Next Generation Excel: Modeling in Excel for Analytics and MBAs**, John Wiley & Sons Private Limited, 2010.
3. Conrad Carlberg, **Statistical Analysis: Microsoft Excel 2013**, Pearson Education, 2014.
4. Wayne L.Winston, **Microsoft Excel 2013: Data Analysis and Business Modeling**, Prentice Hall of India Learning, 2011.



105- BUSINESS ANALYTICS - LAB
(For M Com-Computer Application- under CBCS)

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Credits= 2

Lab – Students are required to undergo Lab Sessions with MS –Excel Software.

1. Working with simple statistical functions like SUM, AVERAGE etc
2. Implement a simple cash book with necessary formulas
3. Prepare a marks sheet of six subject marks and write formulae to find the sum, average and grade of each student.
4. Prepare a quotation with different percentages of profits.
5. Prepare a sales report of 10 salespersons of a month
6. Generate a graph of the sales of the 10 salespersons
7. Prepare a sales report of 3 products of 10 salespersons of a month
8. Generate a suitable graph of 3 products of the sales of the 10 salespersons of a month
9. Record the votes polled for a party in 15 constituencies and display in a PIE chart
10. Show the merit order of salespersons in the decreasing order of Sales and Experience
11. Save the sales made by 10 sales persons on 12 different sheets (one sheet per month) in the same order (same cell references).
12. Calculate the sales of each sales person for that year (sum the data of 12 sheets from same cell reference)
13. Indicate the better salespersons with Green color, Average sales persons in Orange color and others in Red color
14. Prepare a balance sheet in the real format (as seen in the book) assume sample data.
15. Store the particulars of some employees and show the list of employees based on the filter criteria.
16. Create an example to demonstrate VLOOKUP functionality
17. Demonstrate the use of Pivot table with a suitable example.
18. Demonstrate the use of any ten Text and Date & Time functions
*Use respective **statistical functions and assumed data** for the following problems*
19. Demonstrate the calculation of Mean-Median, Mode, Harmonic Mean and Geometric Mean
20. Demonstrate Average Deviation, Standard Deviation and Skewness
21. Demonstrate the use of ANOVA with Single factor
22. Demonstrate Correlation and Regression
23. Demonstrate F-Test
24. Demonstrate t-Test and Z-Test
*Use **assumed data to implement the following Financial Functions***
25. Demonstrate to calculate Asset Depreciation using AMORDEGRC and AMORLINC
26. Demonstrate to calculate Asset Depreciation DB and DDB
27. Demonstrate to calculate Asset Depreciation using SLN, SYD and VDB
28. Demonstrate to calculate Interest Rate functions ACCRINT and ACCRINTM
29. Demonstrate to calculate Interest Rate functions EFFECT and INTRATE
30. Demonstrate to calculate Interest Rate functions NOMINAL and RATE.

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MASTER OF COMMERCE COMPUTER APPLICATIONS- SECOND SEMESTER
201- ORGANISATION THEORY AND BEHAVIOUR

(Common to M.Com and M.Com-Computer Applications- under CBCS)

Class Hours : 5 ppw

Credits: 5

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- Unit I: Introduction to Organisation and Behaviour:** Organisation – Definitions and Characteristics – Principles of Organisation. Organisational Behaviour: Meaning – Definition - Factors influencing organisational behaviour - Significance - Emergence of Organisational Behaviour - Contributing Disciplines - Emerging challenges to organisational behaviour -Understanding Human Behaviour: Similarities and dissimilarities.
- Unit-II: Individual Behaviour in Organisations:** Personality – Definitions – Characteristics – Determinants - Personality Traits Influencing Organisational Behaviour - Models of Human Personality: Rational Economic, Administrative, Social, Organisational, Self-Actualising - Perception: Definitions, Process, Factors influencing Perception, Distortions in Perception - Attitudes: Definitions and Formation of Attitudes - Learning: Definitions, Learning Process, Classical Conditioning, Operant Conditioning, Social Learning Theories.
- Unit III: Group Behaviour in Organisations:** Groups Meaning – Formation - Group Development -Types of Groups - Group Dynamics: Definitions Group Behaviour: Group Cohesiveness, Norming, Thinking, Risk Shift, Social Loafing - Team Development: Meaning, Definitions, Groups vs. Teams, Team Development, Using Teams for Organisational Building - Conflicts: Definitions, Process, Drives for Conflicts, Types, Outcomes, Conflict Resolution Techniques.
- Unit IV: Behavioural Basis of Organisation Theory:** Organisation Process - Elements of Organisation Structure: Types of Organisational Designs – Behaviour implications of Organisational Design – Authority and Power – Delegation and Decentralisation - Span of Management – Line and Staff. Organisational Change: Meaning – Need - Types – Resistance to Change and Overcoming Resistance.
- Unit V: Organisational Communication and Leadership** –Communication- Meaning - Process – Barriers – Overcoming Barriers. Leadership: Meaning – Styles – Managerial Grid – Traits Vs. Situational – Transformational Leadership – Leadership for Millennium Organisations. Motivation: Meaning – Motivators – Maslow and Herzberg Theories of Motivation – Approaches to Motivating Employees. Stress: Meaning –Individual - Organisational dimensions of Stress- Stress Management Techniques: Individual and Organisational.

Suggested Readings

1. Greenberg Jerald and Baron A Robert, **Behaviour in Organisations**, Prentice Hall of India Learning Private Limited, 2009.
2. Sarma V S Veluri, **Organisational Behaviour - An Interactive Learning Approach -Text and Cases**, Jaico Publishing House, 2009.

References

1. Robbins P Stephen, Judge A Timothy and Sanghi Seema, **Organizational Behavior**, Pearson Education, 2009.
2. McShane L Steven and Mary Von Glinow., **Organizational Behavior**, McGraw Hill Education India, 2010.
3. Rae Andre., **Organizational Behavior – An Introduction to Your Life in Organizations**, Pearson Education, 2009.
4. Slocum W John and Hellriegel Don, **Fundamentals of Organizational Behaviour**, Cengage Learning India Private Limited, 2007.
5. Newstrom W John, **Organizational Behavior – Human Behavior at Work**, Tata McGraw Hill Publishing Company Limited, 2008.
6. Suja R Nair, **Organisational Behaviour – Text & Cases**, Himalaya Publishing House, 2010.



202 - MANAGEMENT ACCOUNTING

(Common to M.Com and M.Com-Computer Applications- under CBCS)

Class Hours : 5ppw

Credits: 5

UNIT - I: INTRODUCTION: Management Accounting - Meaning, Definitions, Nature and Scope, Objectives, Functions, Process, Relationship with Financial Accounting and Cost Accounting, Role of Management Accountant, and Organization of Management Accounting System; **Cost Behavior and Decision-Making** -Elements of Costs, Classification of Costs, Fixed and Variable Costs, Relevant Costs and Opportunity Costs.

UNIT - II: COST ANALYSIS FOR DECISION MAKING: Cost-Volume-Profit Analysis - Meaning of Marginal Cost and Marginal Costing, Basic Characteristics and Assumptions of Marginal Costing, Marginal Costing, Differential Costing and CVP Analysis, Meaning, Objectives, and limitations of CVP Analysis - Concept of Break-Even Point, Profit-Volume Graph and Profit Planning, and Managerial Applications in Decision Making (Decisions on Product-Mix, Make or Buy, Add or Drop, Shut Down or Continue, Capacity Utilization, Equipment Replacement, Exports, Alternative Methods of Production, and Key Factor Analysis) (Problems).

UNIT - III: MANAGEMENT ACCOUNTING FOR PLANNING AND CONTROL: Budgetary Control - Meaning and Significance, Types of Budgets, Preparation of Fixed and Flexible Budgets (Problems); **Performance Budgeting and Zero-based Budgeting** - Concept, Importance, and Relevance; **Standard Costing** - Meaning, Need, Types of Standards, Advantages of Standards, Standards Setting, Variance Analysis, and Controllability of Variances, Material, Labour, Overhead and Sales Variances (Problems)

UNIT - IV: MANAGEMENT CONTROL SYSTEMS & RESPONSIBILITY ACCOUNTING: Responsibility Accounting - Meaning, Definition, and Essential Features of Responsibility Accounting, Steps Involved in Responsibility Accounting; **Responsibility Centers** - Concept and Types of Responsibility Centers; **Transfer Pricing** - Transfer Prices, Methods/Types of Transfer Prices (Problems), Selection of Transfer Pricing Method, Performance Reports, Segmented Performance Evaluation, Advantages of Transfer Pricing and Responsibility Accounting.

UNIT - V: ACTIVITY BASED COSTING: ACTIVITY BASED COSTING SYSTEM: Concept, Traditional Manufacturing Costing System, Activity Based Costing/Management (ABC) System, ABC System Vs. Traditional Costing System, Tracing costs from Activities, Activity Cost Drivers (Problems), ABC for Marketing, Selling and Distribution Expenses, ABC for Service Companies, and Pros and Cons of ABC.

Suggested Readings:

1. Hongren, Sundem Stratton, Burgstahler and Schatzberg., **Introduction to Management Accounting** Pearson Education, 2009.
2. Shashi K. Gupta and Sharma R.K., **Management Accounting - Principles and Practice**, Kalyani Publishers, 2014.

References:

1. Khan M Y., and Jain P.K., **Management Accounting: Text, Problems and Cases**, Mc Graw Hill Education India Private Limited, 2013.
2. Madegowda.J., **Advanced Management Accounting**, Himalaya Publishing House, 2012.
3. Colin Drury, **Management & Cost Accounting**, Cengage Learning India Private Limited, 2014.
4. Maheswari S.N., **Principles of Management Accounting**, Sultan Chand & Sons, 2011.
5. Jain S.P., and Narang K.L., **Cost Accounting- Principles and Practice**, Kalyani Publishers, 2012.
6. Balakrishnan R., Sivaramakrishnan K., Sprinkle G., **Managerial Accounting**, Wiley, 2012.



203 – MARKETING MANAGEMENT

(Common to M.Com and M.Com-Computer Applications- under CBCS)

Class Hours: 5ppw

Credits: 5

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- UNIT-I: INTRODUCTION:**– Marketing Management – Definition – Core concepts – Nature, scope and importance of marketing – Evolution of marketing concepts – Role of marketing in economic development – Functions and tasks of marketing management – Marketing mix – Recent trends in marketing.
- UNIT-II: MARKET ANALYSIS** - Marketing environment – Macro and Micro components and their impact on marketing decisions- Competitive Marketing Strategies- Market Leader, Challenger, Follower and Nicher – STP marketing – Market segmentation – Concept – Bases and process – Target market selection – Positioning – Concept , bases and process - Consumer behavior- Concept - Factors influencing consumer behavior – Consumer buying decision process – Marketing research - Steps and process.
- UNIT-III: PRODUCT AND PRICING DECISIONS** – Concept of product – Classification – Levels –Product line decisions - New product development – Product life cycle and its implications – Branding and packaging decisions. Price – Concept –Objectives - Factors influencing pricing decisions – Methods of Pricing- Cost based, demand based and competition based pricing strategies – Initiating and responding to price changes.
- UNIT-IV: PLACE DECISIONS** – Channels of distribution – Concept – Levels – Functions and types of distribution channels – Channel management decisions – Channel conflict – Channel cooperation – Retailing and wholesaling. Physical distribution decisions - Concept - Importance – Components of physical distribution (market logistics) – Market logistics decisions – Direct marketing – Major channels of direct marketing.
- UNIT-V: PROMOTION DECISIONS** – Promotion mix – Integrated marketing communication – Concept , process – Nature and importance of advertising – Advertising copy – Media selection – Advertising budget – Measurement of advertisement effectiveness - Personal selling – Nature and importance – Process – Sales force management – Recruitment ,selection ,training ,compensation and control of sales force – Sales promotion – Objectives – Techniques.

Suggested Readings

1. Kotler.P, Keller K.L., Koshy.A., and Jha.M, **Marketing Management : A South Asian Perspective**, Pearson Education Limited, 2014.
2. Stanton W.J., Michael J.Etzel and Bruce J.Walker, **Fundamentals of marketing**, McGraw-Hill publications, 1997.

References

1. Ramaswamy V.S., and Namakumari S., **Marketing Management: Planning, Implementation and Control**, Macmillan India publishers, 1991.
2. Rajan Saxena, **Marketing Management**, Tata McGraw Hill Education Private Limited, 2009.
3. Gandhi, J.C., **Marketing: A Managerial Introduction**, Tata McGraw-Hill Publishing Company Limited, 1985.
4. Kazmi S.H.H., **Marketing Management : Text and Cases**, Excel Books, 2007.
5. Michael R.Czinkota and Masaaki Kotabe, **International Marketing**, Cengage Learning, 2013.
6. Arun Kumari and Meenakshi N, **Marketing Management**, Vikas Publishing House, 2010.



204 - ADVANCED PROGRAMMING WITH C
(for M Com-Computer Application- under CBCS)

Theory – 3 PPW

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Credits= 5

Unit I - Introduction to programming Languages – Types of Languages – Steps in program development – Algorithms – Flowcharts – Compilation – Interpretation -History of C language – Structure of C program – Data Types – Variables – Constants – Reserve & Key words - Including Library files.

Unit II- Simple program – Compilation & Execution - Input/Output statements – Formatted & unformatted I/O statements - Conditional Statements – Simple If, If with else, Nested If, Switch statement – Loops – For loop, While loop, Do..While loop – Arrays – Single dimension, double dimension arrays – Searching – Searching methods – Sorting – Sorting methods-Bubble Sort-Selection Sort.

Unit III - Introduction to Sub programs – Top to bottom approach – Bottom to Top approach - Functions – Global Variables – Local Variables – Passing of Parameters – Calling functions – Call by value & Introduction of the concept of Call by reference – Recursion.

Unit IV- Character Arrays (Strings) - Structures – Unions – Passing structures to functions – Passing Unions to functions – Pointers – Call by Reference using pointers.

Unit V - Introduction to Secondary storage of data – File concepts – Creation of Text file – Processing a Text file – Creation of Random file – Processing of Random file.

Suggested Readings

1. Brain W.Kernighan and Dennis M. Ritchie, **The C Programming Language**, Prentice Hall, 1988.
2. Balagurusamy.E, **Programming in Ansi C**, Tata McGraw Hill Education Private Limited, 2011.

References

1. Yashavant P. Kanetkar, **Let Us C**, BPB Publications, 2006.
2. Ravi Chandran.D, **Programming in C**, New Age International Private Limited, 2006.
3. Suresh Kumar Srivastava and Deepali Srivastava, **Data Structures Through C in Depth**, BPB Publications, 2004.
4. Somashekara M.T, **Programming in C**, Prentice-Hall of India Private Limited, 2005.



LAB-ADVANCED PROGRAMMING WITH C
(for M Com-Computer Application- under CBCS)

Lab: 2 PPW
One Period Lab means 2 hours of Lab Session
Credits= 2

Lab – Students are required to undergo Lab Sessions on the following.

1. Printing output in different formats using the format specifiers.
2. Calculating the denominations for a given amount
3. Accepting the denominations and finding the total amount
4. To calculate the salary of an employee with given percentage of HRA, DA etc.
5. To calculate the telephone/electricity bill by taking the meter readings
6. To calculate the different interest amounts for a given amount.
7. To find the biggest/least/both from a given set of numbers.
8. To print the Fibonacci series
9. To find the sum of digits of a given number
10. To reverse the digits of a given number
11. To find the number of odd and even digits in a given number.
12. To print the marks list of a class of one subject - using arrays.
13. To find the highest/lowest marks of the students in a subject – using arrays.
14. To print the merit list of the students in descending order using different sorting methods.
15. To find and display the marks of a student using different searching methods.
16. To perform Matrix addition, subtraction and multiplication.
17. To declare/use/differentiate the use of global and local variables.
18. To do problems 2 to 7 using functions
19. To do problems 12 to 16 by passing arrays to functions
20. To swap the values of two variables using pointers.
21. To accept a string and count the characters (length of the string)
22. To convert the characters from Lower to Upper, Upper to Lower and Vice versa
23. To count the number of characters, words and sentences from a string.
24. To create structures of students, employees and pass them to functions.
25. To practice the effective use of Structures and Unions to know the advantages.
26. To calculate the size of a structure or a union
27. To create and read a text file
28. To count the characters, words, sentences from a text file.
29. To convert the text file into a cryptic code by changing the ASCII values.
30. To store and generate the list of the students from a file.
31. To create a random access file and implement a simple banking application
(To deposit/withdraw amount)



205- COMPUTER APPLICATIONS IN ACCOUNTING

(Common to M.Com and M.Com-Computer Applications - under CBCS)

Theory – 3 PPW

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Credits= 5

Unit-I: **Computerized Accounting** – Need, Features and merits – Distinction between Manual Accounting and Computerized Accounting – Limitations of Computerized Accounting – Accounting Packages – Tally, Wings and Ex- integration of Accounting Packages with ERP – Features of Tally – Gateway of Tally –Shortcut keys.

Unit-II: **Creation of Account groups** – Creation Ledgers – With inventory and without inventory – Voucher Types – Payment voucher – Receipt Voucher – Contra Voucher – Sales Voucher – Purchase Voucher – VAT voucher – Credit Note Voucher – Debit Note Voucher – Other types of Voucher – Reversing Journal Voucher. **Inventory Management in Tally** – Stock groups, Categories, items – Inventory Masters – Stock Ledgers – Invoicing – Inventory Vouchers _ Inventory Journals – Purchase and Sales Order Processing – Delivery Notes – Treatment and posting of Sales, Tax, VAT, and other related Taxes.

Unit- III: **Payroll in Tally** - Exploring Payroll in Tally.ERP9 – Working with Payroll vouchers – Defining Payroll Reports – Working with Statement of Payroll Report – Describing Salary Disbursement – Create a Tax Ledger – TDS Vouchers – Printing a TDS Challan – Tax Collected at Source in Tally.ERP9 – TCS Reports in Tally.ERP9.

Unit-IV: **Financial Reporting** - Day Book – Cash/Bank Book – Bank Reconciliation Statement – Cash Flow and Fund Flow – Sales Book _ Purchase Book – Statement of Accounts – Trial Balance – Treatment and Accounting for Depreciation – Profit and Loss Accounts – Balance Sheet – Generation of Financial Reports other than Financial Statements – Treatment of Income Tax and TDS.

Unit-V: **Special Features in Tally** - Tally Vault – Import and Export of Data – ODBC Connectivity – Web enabled Financial Reporting – Split Financial year, Income and Expenses Statement – Tax Ledgers – Financial Audit – Security in Accounting Packages – Data integrity and Security – Virus Problems – Overcoming Security issues – Security Protocols for Accounting Packages – Backup and Restore.

Suggested Readings

1. Namrata Agarwal, **Financial Accounting on Computers using Tally**, Dreamtech Press, 2000.
2. Ashok K Nadhani., **Tally.ERP 9 Made Simple Basic Financial Accounting**, BPB Publications, 2012.

References:

1. Kongent Learning Solutions Inc., **Tally.ERP 9 in Simple Steps**, Dreamtech Press, 2002.
2. Nadhani. A.K., and Nadhani .K.K. , **Implementing Tally 9**, BPB Publications, 2007.
3. Shraddha Singh and Navneet Mehra., **Tally ERP 9**, V&S Publishers, 2005.
4. Tally Work Book.



LAB: COMPUTER APPLICATIONS IN ACCOUNTING
(Common to M.Com and M.Com-Computer Applications - under CBCS)

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Lab – Students are required to undergo Lab Sessions with Tally Software.

1. Gateway of Tally and Shortcut Keys
2. Creation of Company, Account Groups, Ledgers, with Inventory and without Inventory
3. Creation of different types of Vouchers, Reversing Journal Voucher
4. Creation of Stock Groups, Categories, Items – Inventory Master
5. Inventory Vouchers, Receipt Note, Return Out, Return In, Inventory Journals
6. Purchase and Sales Order Processing, Treatment of Sales Tax, VAT and other related taxes Entries into Day Book, Cash/Bank Book, Bank Reconciliation Statement, Cash Flow and Fund Flow Statements
7. Sales Book, Purchase Book
8. Statement of Accounts, Trial Balance, Treatment of Depreciation
9. Profit and Loss Account and Balance Sheet
10. Generation of Financial Reports other than Financial Statements
11. Payroll Vouchers, Statement of Payroll
12. Creation of Tax Ledger, TDS Vouchers, Printing TDS Challan
13. TCS Reports



**MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER
301 -RESEARCH METHODOLOGY AND STATISTICAL ANALYSIS**

(Common to M.Com and M.Com- Financial Accounting - under CBCS)

Class Hours: 5 ppw

Credits: 5

- Unit-I:** **INTRODUCTION:** Quantitative Techniques: Meaning, Need and Importance - Classification: Statistical Techniques - Operations Research techniques - Role of Quantitative Techniques in Business and Industry - Quantitative Techniques in Decision making - Limitations.
Research: Meaning, Purpose, Characteristics and Types - Process of Research: Formulation of objectives - Formulation of Hypotheses: Types of Hypotheses - Methods of testing Hypotheses - Research plan and its components - Methods of Research: Survey, Observation, Case study, experimental, historical and comparative methods - Difficulties in Business research.
- UNIT-II:** **COLLECTION, PRESENTATION & ANALYSIS OF DATA:** Sources of Data: Primary and Secondary Sources - Methods of collecting Primary Data - Designing Questionnaires/Schedules in functional areas like Marketing, Finance, Industrial Economics, Organizational Behavioral and Entrepreneurship (Practically students should be able to design questionnaires for given problem/cases in these areas). Census vs. Sampling - Methods of Sampling Random and Non-Random Sampling methods - Measurement and scaling techniques.
Processing and Presentation of Data: Editing, coding, classification, and tabulation - Graphic and diagrammatic presentation (Theory only). Statistical analysis of Data: Types of analysis (Descriptive analysis and inferential analysis) – Tools: Measures of Central Tendency, Measures of Variation, Skewness, Time series, Index numbers, Correlation and Regression (theory only).
- UNIT-III:** **INTERPRETATION AND REPORT WRITING:** Interpretation: Introduction - Essentials for Interpretation, Precautions in interpretation - Conclusions and generalization - Methods of generalization. Statistical fallacies: bias, inconsistency in definitions, inappropriate comparisons, faulty generalizations, drawing wrong inferences, misuse of statistical tools, failure to comprehend the data. (including small cases).
Report Writing: Meaning and types of reports - Stages in preparation of Report - Characteristics of a good report - Structure of the report'-Documentation: Footnotes and Bibliography - Checklist for the report.
- UNIT-IV:** **PROBABILITY AND PROBABILITY DISTRIBUTIONS:** Probability: Meaning - Fundamental Concepts - Approaches to measurement of Probability -Classical, Relative frequency, subjective and axiomatic approaches - Addition theorem - Multiplication theorems- Bayesian theorem and its simple applications - Mathematical expectation (including problems).
Probability Distributions: Meaning and importance of theoretical frequency distributions Binomial, Poisson and Normal distributions - Properties and uses - fitting Binomial, Poisson and Normal, Distributions (areas method only) (including problems).
- UNIT-V:** **ASSOCIATION OF ATTRIBUTES & CHI SQUARE TEST:** Association of Attributes: Meaning - Distinction between correlation and association Methods of studying Association - interpretation of results.
Chi Square Test: Definition - Conditions for applying Chi square test, Yates's correction - Uses and limitations of Chi square test - Chi square test for testing the independence of Attributes - Chi square test for goodness of fit (including problems).

SUGGESTED READINGS:

1. Krishna Swamy:Methodology of Research in Social Sciences
2. Kothari:Research Methodology
3. Zikmund:Business Research Methods
4. SC.Gupta:Fundamentals of Statistics
5. SP.Gupta:Statistical Methods
7. Sanchetty & Kapoor: Business Statistics



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER

302 – E- BUSINESS

(For M.Com - under CBCS)

Class Hours: 5 ppw

Credits: 5

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- Unit-I: Introduction to E-Business:** E-Business: Meaning, significance – Opportunities and Risks – E-Business Models: B2B: Meaning and implementation, B2C: Meaning and implementation, B2G: Meaning and implementation, C2G: Meaning and implementation and C2B: Meaning and implementation – Advantages and Limitations – Mobile Commerce: Meaning, Framework and Models – E- Business Trade: Bookshops, grocery, software, newspaper, banking auction, share dealing.
- Unit-II: E-Business Infrastructure:** Internet: Meaning, Issues, Problems and Prospects, ISP – Intranets: Trends, Growth and Applications – Extranet: Applications, VPN – EDI: Definitions and Benefits – Technology and Implementation - Portals.
- Unit-III: E-Business Applications:** E-Business Strategy: Definition, Objectives, Analysis and Implementation - E-Marketing: Meaning, Areas, Planning, Strategy and implementation – Internet Advertising - E-CRM: Meaning, Technology for CRM and application - E-Procurement: Meaning, Drivers, Risks and implementation – E-SCM: Meaning, Focus and implementation – E-Payment Systems: Meaning, Pre and Post paid payments systems – E-Cash.
- Unit-IV: E-Security -** Security Meaning, Attacking methods, SET and SSL, Hacking Security Tools: Cryptology and Encryption – Password – Authentication: Keys and Kerberos – Digital Signatures – Security Protocols – Firewall Security – E- Commerce Law: Information Technology Act, 2000 – Government Policy and Recommendations.
- Unit-V: E-Business Web Technologies:** Web site meaning – Types – Planning and Organizing – Web page Designing, Essentials in designing good web site – Web page development tools – Testing and evaluating web site – Creating Web site using MS Front Page: Using Wizard – Viewing and closing web sites – HTML: Basics, Syntax, HTML Editors – Multimedia: Graphics, web image formats, VRML.

Suggested Readings

1. Albert Napier H, Rivers N Ollie, Wagner W Stuart and Napier JB, **E-Business – Creating a Winning**, 2nd Edition, Cengage learning India Private Limited, New Delhi, 2008.
2. Murthy C S V, **E-Commerce – Concepts, Models, Strategies**, Himalaya Publishing House, Mumbai, 2009.

References

1. Gary P Schneider, **E-Commerce**, Cengage Learning, New Delhi, 2011.
2. David Whiteley, **E-Commerce Strategy, Technologies and Applications**, Tat McGraw Hill Publishing Company Limited, New Delhi, 2009
3. Ravi Kalakoda, **Frontiers of Electronic Commerce**, Pearson Education, New Delhi, 2010.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER
303- SOFTWARE PROJECT MANAGEMENT
(for M.Com-Computer Applications - under CBCS)

Class Hours: 3 ppw

Credits: 5

- Unit-I:** **Introduction to Software Project Management:** Introduction to Software Projects versus other types of Projects, Contract Management and Technical Project Management. **Project Management-** Problems with Software Projects, Setting Objectives, Stakeholders, The business case, Requirement specification, Management Control. **Project Planning-** Introduction. Selection, scope and objectives, infrastructure, characteristics, products and activities. **Project Evaluation:** Introduction to different types of evaluation.
- Unit-II:** **Selection of an appropriate Project Approach:** Choosing technologies, Technical plan contents list, process models, Structure vs speed of delivery, The waterfall model, The V-process model, The Spiral Model, Prototyping. Categorizing prototypes, controlling changes, incremental delivery, dynamic systems, and development methods. Extreme programming, managing iterative process, selecting the most appropriate process model. **Software effort estimation:** Need of estimation, over-and under-estimates. The basis for software estimating, estimating techniques, expert judgment, estimating by analogy, Albrecht function point analysis, function points Mark II, object points, a procedural code-oriented approach, COCOMO: a parametric model.
- Unit-III:** **Activity Planning:** Objectives. When to plan, Project schedules, Projects and activities, Sequencing and scheduling activities, Network planning models, Formulating a network model, Adding the time dimension, The forward pass, backward pass, critical path, Activity float, shortening the project duration, critical activities, Activity-on-arrow networks. **Risk Management:** The nature of risk, Types of risk, Managing risk, Hazard identification, Hazard analysis, Risk planning and control, evaluating risks to the schedule. **Resource Allocation:** The nature of resources, Identifying resource requirement, Scheduling resources, Creating critical paths, counting the cost, being specific, publishing the resource schedule, Cost scheduling sequence.
- Unit-IV:** **Monitoring and Control:** Creating the framework, Collecting the data, Visualizing process, Cost monitoring, Earned value, Prioritizing monitoring, Getting the project back to target, Charge control. **Managing contracts:** Types of contracts, Stages in contract placement, typical terms of a contract, Contract management, Acceptance.
- Unit-V:** **Managing People and Organizing Teams:** Understanding behavior, organizational background, Selecting the right person, Instruction in the best methods, motivation, The Oldham-Hack man job characteristics model. Working in groups, Becoming a team, Decision making, Leadership, Organizational structures, Stress, Health and safety. **Software quality:** Importance of software quality, defining software quality, ISO 9126, practical software quality measures, Product vs Process quality management, External standards, Techniques to help enhance software quality, Quality plans.

Suggested Readings

1. Bole Hughes and Mike Cotterell, **Software Project Management**, Tata McGraw Hill, Third Edition, New Delhi, 2007.
2. Roger S. Prenman, **Software Engineering A Practitioner's Approach**, McGraw Hill International Edition, New Delhi, 2008.

References

1. Andrew Stellman and Jennifer Greene, **Applied Software Project Management**, O'Reilly Media, Bebsryal, CA, 2006.
2. Murali Chemuturi and Thomas M Cagley Jr, **Mastering Software Project Management: Best Practices, Tools and Techniques**, J.Ross Publishing, USA, 2010.
3. Ashfaque Ahmed, **Software Project Management**, A process driven approach, CRC Press, New York, 2011.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER
303-LAB: SOFTWARE PROJECT MANAGEMENT
(For M.Com-Computer Applications - under CBCS)

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Lab – Students are required to undergo Lab Sessions with Microsoft Project (Preferably the recent version) List of Experiments:

AIM: Defining a project and the activities to be considered therein. For example, building an auditorium, has several tasks to be performed may be in a sequence (one after another), or in parallel. Using MS project the student needs to have an idea to represent them as project activities. While representing them, the student may also estimate the activity duration and the same may be represented as a tool.

LIST OF EXPERIMENTS

- i. Organizing a Common Entrance Test by a University. For example ICET/EAMCET/LAWCET
- ii. Software Project being undertaken by an organization, for example, software to be developed for conducting online examination, Automation of Kakatiya University Examination Branch activities starting from question paper setting to the declaration of result of all courses of all disciplines.
- iii. Online admission process of an University
- iv. Two more case-studies of above type
- v. Computation of Critical Path Method(CPM) for any project with activities and their durations
- vi. Estimation of project completion time using the concept of PERT (with the consideration of optimistic, most-likely and pessimistic activity durations)
- vii. Computing NPV and IRR using suitable formulas in the Excel environment.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER
304- SOFTWARE TESTING TOOLS

(For M.Com-Computer Applications - under CBCS)

Class Hours: 3 ppw

Credits: 5

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- Unit-I:** **Software Engineering Evaluation**-Introduction, Software Project, Software Product vs. Software Application, Types of development models. Requirements management-Requirement vs. Specification, Roles and Responsibilities, Entry Criteria, Input, Tasks, Output, Exit Criteria, Measurements/Metrics, PIN Document Format, Software Requirements Specification, Data collection Sheet , Software design- purpose of Design Phase, Design Levels-External Design, Internal Design, Roles and Responsibilities, Coding-Coding Process, Roles and Responsibilities, Entry Criteria Input, Tasks, Output, Exit Criteria, Measurements and metrics.
- Unit-II:** **Introduction** : What is software testing and why it is so hard?, Error, Fault, Failure, Incident, Test Cases, Testing Process, Limitations of Testing, No absolute proof of correctness. Testing Fundamentals: Principles of testing – Types of testing – White box testing – Black box testing – Integration Testing – System and Acceptance testing – Performance testing – Regression testing.
- Unit-III:** **Software Testing Tools:** Selecting and Installing Software Testing tools, Automation and Testing Tools Over view of win runner: testing an application using win runner, Test script language (TSL), GUI MAP file, Synchronization of test cases, Data-driven testing, Rapid Test Script Wizard, mapping custom object to a Standard class, checking GUI objects, Load Runner, Win Runner and Rational Testing Tools, Silk test.
- Unit-IV:** **Testing Process: Seven step Testing Process - I:** Overview of the Software Testing process, Organizing of Testing. Developing the Test Plan, Verification Testing, Validation Testing.
- Unit-V:** **Seven Step Testing Process – II:** Analyzing and Reporting Test Results, Acceptance and Operational Testing, Post – Implementation Analysis. Specialized Testing Responsibilities-Testing Client/Server Systems.

Suggested Readings

1. Nageswara Rao Pusuluri, **Software Testing Concepts and Tools**, Dream Tech Press, New Delhi, 2006.
2. William E. Perry, **Effective Method for Software Testing**, Third Edition, , Wiley India, New Delhi, 2006.

References:

1. Kanglin Li and Mengqui Wu, **Effective Software Test Automation: Developing an Automated Software Testing**, Wiley Publishers, USA, 2013.
2. Cerald D Everett and Raymond Mc Leod Jr., **Software Testing: Testing Across the Entire Software Development Life Cycle**, Wiley Publishers, USA, 2014.
3. Boris Beizer, **Software Testing Techniques**, Dream Tech Press, New Delhi, 2009.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER
304: LAB: SOFTWARE TESTING TOOLS
(For M.Com-Computer Applications - under CBCS)

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Lab – Students are required to undergo Lab Sessions with Win Runner

1. Perform a context sensitive for opening order using flight reservation application.
2. Perform test for processing of sending a fax.
3. Perform a batch test to execute series of test using calculator application.
4. Perform context sensitive test on flight 1A application, insert GUI check points for single property.
5. Perform context sensitive test on flight 1A application, insert GUI check points for multiple objects.
6. Perform context sensitive test on flight 1A application, insert GUI check points for object/window.
7. Perform context sensitive test on flight 1A application insert bitmap checkpoint for object/window.
8. Perform context sensitive test on flight 1A application insert bitmap checkpoint for screen area.
9. Perform a test for default checkpoint on flight reservation.
10. Perform a test for custom checkpoint on flight reservation.
11. Perform a test for Runtime record checkpoint on flight reservation.
12. Perform a Data Driven test for flight reservation application.
13. Perform a Data Driven test for flight reservation application to open multiple order numbers using data driven Wizard.
14. Perform a Data Driven test for flight reservation application to open multiple order numbers using for loop to dynamically display order.
15. Perform a test using flight application for synchronization for object/window bitmap.
16. Perform a test using flight application for synchronization for object/window.
17. Perform GUI regression test using Rapid Test Script Wizard (RTSW) for calculator application.
Perform Bit map Regression test using RTSW for calculator application
18. Perform User Interface test using RTSW for calculator application.
19. Perform Test template test using RTSW for calculator application.
20. Perform GUI checkpoint for single property for calculator application.
21. Perform checkpoint for single property for calculator application.
22. Perform GUI check point for multiple objects for calculator application
23. Perform Bitmap checkpoint for object/window for calculator application.
24. Perform Bitmap checkpoint for screen area for calculator application.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER
305- WEB PROGRAMMING

(for M.Com-Computer Applications - under CBCS)

Class Hours: 3 ppw

Credits: 5

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- Unit-I: Fundamentals of Web:** Internet, WWW, Web Browsers, and Web Servers, URLs, MIME, HTTP, Security, The Web Programmers Toolbox. XHTML: Origins and evolution of HTML and XHTML, Basic syntax, Standard XHTML document structure, Basic text markup, Images, Hypertext Links, Lists, and Tables.
- Unit-II: HTML and XHTML:** Forms, Frames in HTML and XHTML, Syntactic differences between HTML and XHTML. CSS: Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The Box model, Background images, The and <div> tags, Conflict resolution.
- Unit-III: Java Script:** Overview of JavaScript; Object orientation and JavaScript; General syntactic characteristics; Primitives, Operations, and expressions; Screen output and keyboard input; Control statements; Object creation and Modification; Arrays; Functions; Constructor; Pattern matching using expressions; Errors in scripts; Examples.
- Unit-IV: Java Script and HTML Documents:** The JavaScript execution environment; The Document Object Model; Element access in JavaScript; Events and event handling; Handling events from the Body elements, Button elements, Text box and Password elements.
- Unit-V: Dynamic Documents with Java Script:** Introduction to dynamic documents; Positioning elements; Moving elements; Element visibility; Changing colors and fonts; Dynamic content; Stacking elements; Locating the mouse cursor; Reacting to a mouse click; Slow movement of elements; Dragging and dropping elements. XML: Introduction; Syntax; Document structure; Document Type definitions; Namespaces; XML schemas; Displaying raw XML documents; Displaying XML documents with CSS.

Suggested Readings

1. Robert W Sebesta, **Programming the World Wide Web**, Pearson Education, New Delhi, 2012.
2. Chris Bates, **Web Programming Building Internet Applications**, Wiley India, New Delhi, 2006.

References

1. Chris Bates, **Web Programming: Building internet applications**, Wiley India, 3rd Edition, New Delhi, 2006.
2. Deven N Shah, **A complete Guide to Internet and Web Programming**, Dream Tech Pres, New Delhi, 2009.
3. John Duckett, **Web Programming with HTML, XHTML and CSS**, Wiley Publishers, USA, 2007.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - THIRD SEMESTER
305- LAB: WEB PROGRAMMING
(for M.Com-Computer Applications - under CBCS)

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

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1. Create an html page with 7 separate lines in different sizes. State size and colour of each line in its text.
 2. Create a background image called myimage.jpg by using any picture creating tool. Type a sample html program in the text editor and view it through the browser. Modify it to include some blinking text.
 3. Create an html page with all the different text styles (bold, italic and underlined) and its Combinations on separate lines. State style of each line in its text.
 4. Create an html page containing the polynomial expression as follows $ao + a1x + a2x2 + a3 x3$
 5. Create an html page with red background with a message “warning” in large size blinking. Add scrolling text “read the message” below it.
 6. Create an html page with following specifications
 - a. Title should be about my self
 - b. Colour the background with pink colour
 - c. Place your name at the top of the page in large text and centred
 - d. Add names of your family members each in a different size, colour, and style
 - e. Add scrolling text with a message of your choice
 - f. Add your image at the bottom
 7. Create an html page with following specifications
 - a. Title should be about my college
 - b. Put the windows Logo image in the background
 - c. Place your College name at the top of the page in large text followed by address in smaller size
 - d. Add names of courses offered each in a different colour, style and typeface
 - e. Add scrolling text with a message of your choice
 - f. Add college image at the bottom
 8. Create an html page with following specifications
 - a. Title should be about my City
 - b. Place your City name at the top of the page in large text and in blue colour
 - c. Add names of landmarks in your city each in a different colour, style and Typeface
 - d. One of the landmarks, your college name should be blinking
 - e. Add scrolling text with a message of your choice
 - f. Add some image at the bottom



9. Create a new file called index. HTML Put the normal HTML document structure tags in the file. Give it a title. At the bottom of the page (i.e. the last thing between the body tags) put the following:
 - a. A horizontal rule.
 - b. A Link to your email Address (With your name between the tag)
 - c. A line break.
 - d. The date. (I have this same structure at the bottom of this page).
 - e. Above this block (which is called the footer), put a title in heading tags.
 - f. Add some text describing yourself (you can split this into multiple headings and Paragraphs if you wish).
10. Create an html program using the body given in the example for ordered list. Modify it to change the colour of the item text to and reduce the size of text one smaller than the heading.
11. Create an html program using the body given in the example for unordered list. Modify it to change the shape of the bullet to and also reduce the size bulleted items one smaller than the heading.
12. Type the sample HTML program using tables. Modify it to remove Rs and paise column and specify price as 500.50
13. Type the sample HTML program using frames. Create the required html files with appropriate messages. Modify it to change to a different frame structure.
14. Create an html page with appropriate frames containing Heading and other information. Add a bulleted list of your favourite subjects. For each subject make a nested list that contains, teacher name, the start and end time. Add your photograph and message in a separate frame Add link to teacher or college web site wherever teacher name appears
15. Create an html page with appropriate frames containing Heading and other information. Add an ordered list of your educational qualifications. For each course make a nested list that contains, university or board name, the year and the percentage scored. Add link to university site where university name appears. Add your college photograph and message in a separate frame.
16. Create a HTML page that displays the XML data using XML document.
17. Create a XML document and its DTD.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - FOURTH SEMESTER
401 – STRATEGIC MANAGEMENT

(Common for M.Com and M.Com Financial Accounting - under CBCS)

Class Hours: 5 ppw

Credits: 5

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- Unit-I:** **Introduction** – Concept of Strategic management – Characteristics of Strategic management – Significance of Strategic Management – Dimensions of Strategic management – Tasks of Strategic Management – Developing – Vision – Mission – Objectives – Goals – Elements in Strategic Management Process – Benefits of Strategic Management.
- Unit-II:** **Environmental and Organizational Appraisal.** : Concept and Characteristics of Environment – External and Internal Environment – Environmental Scanning – Factors Effecting Environmental Scanning – Organizational Capability – Factors Effecting Organizational Appraisal – Methods and Techniques used for Organizational Appraisal.
- Unit-III:** **Strategy Formulation:** Corporate Level: Grand strategies – Stability Strategy – Expansion Strategy – Retrenchment Strategy – Turnaround strategy – Combination Strategy – Business Level: Cost Leadership Strategy – Differentiation Strategy – Focus Strategy.
- Unit-IV:** **Strategy Implementation:** Project Implementation – Resource Allocation – Approaches of Resource Allocation – Structural Implementation – Types of Structures – Strategy and structure – Leadership implementation – Role of Leader – New paradigms of Leadership.
- Unit-V:** **Strategy Evaluation and Control:** Nature and Importance of Strategic evaluation – Participants of strategic evaluation and barriers in strategic evaluation – Evaluation Techniques for strategic control – Evaluation Techniques for Operational Control – Role of Organizational System in Evaluation.

Suggested Readings

1. Azhar Kazmi, **Strategic Management and Business Policy**, Tata McGraw Hill Company Limited, New Delhi, 2008.
2. Thomas L., Wheelen, J.David Hunger & Krish Rangarajan, **Concepts in Strategic Management and Business Policy**, Pearson Education, 2011.

References

1. Subba Rao, P, Business Policy and strategic Management, Himalaya Publishing House, Mumbai, 2003.
2. Vipin Gupta, Kamala and Srivasam R, **Business Policy and strategic Management**, Prentice Hall of India Private Limited, New Delhi, 2006.
3. Barney & Hesterly, **Strategic Management and Competitive Advantage Concepts**, Prentice Hall of India Private Limited, New Delhi, 2009.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - FOURTH SEMESTER
402 – INTERNATIONAL BUSINESS
(for M.Com - under CBCS)

Class Hours: 5 ppw

Credits: 5

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- Unit-I: Introduction:** International Business – Meaning – Different stages in International Business – Drivers for growth of International Business – Barriers and Problems – Theories of International Business – Modes of entry into International Business.
- Unit-II: International Business Environment:** Economic Environment – International Economic Reforms – Technological Environment – Socio-Cultural Environment – Political – Legal Environment – Recent Trends in International Business – Liberalization, Privatization, Marketization and Globalization.
- Unit-III: International Agencies, Agreements and Institutions:** Trade Blocks – GATT – GATS – WTO – Objectives, Functions and Organisation Structure – Objectives, Functions and Organizational Structure of IMF and World Bank – Impact of IMF and World Bank in Developing Countries.
- Unit-IV: Multi National Corporations (MNCs):** Definition and Concepts – Growth of MNCs – Advantages and Disadvantages to Home Countries and Host Countries – Organisation Structure of MNCs – Indian MNCs – Foreign Direct Investment – Recent Trends in FDI – FDI in India.
- Unit-V: International Business Management Operations:** International HR Strategies – Global Selection Process – Expatriates – training and Development – Compensation and Benefits – International Financial Management Strategies – Global Capital Structure – Foreign Exchange Markets – Convertibility – International risk Management – International Marketing Strategies – Globalization Markets and Demands, Pricing, Distribution and Promotion.

Suggested Readings

1. K Ashwathappa, **International Business**, Tata McGraw Hill Company Limited, New Delhi, 2006.
2. P Subba Rao, **International Business – Text & Cases**, Himalaya Publishing House, New Delhi, 2009.

References

1. Justin Paul, **International Business**, Prentice Hall of India Private Limited, New Delhi, 2008.
2. Manab Adhikary, **Global Business Management**, South -Western Cengage Learning, New Delhi, 2008.
3. Michael R Czinkota, Iikka A Ronakainen and Michael H Moffett, **International Business**, Cengage Learning, New Delhi, 2011.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - FOURTH SEMESTER
403- MANAGEMENT INFORMATION SYSTEMS
(For M.Com-Computer Applications - under CBCS)

Class Hours: 5 ppw

Credits: 5

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- Unit-I: Introduction:** Information System – Types –Major Roles Benefits, Functions of Management Information Systems, Components of Information Systems - Hardware-Software-Data Base -Solving Business Problems with Information System– Information Systems for Managerial Decision Support– Organisation of Information System-Implementing Business Change with IT
- Unit II: Organisations, Competitive advantage and synergies:** Executive Support Systems - Expert systems – Office Automation Systems –Organisations & Information Systems – Economic impacts – Organisational & Behavioural Impacts – Using Information Systems to achieve Competitive advantage – Porter’s Competitive forces model – The Value Chain and Strategic Information System – Enterprise Business Systems-CRM-ERP-SCM-Benefits and Challenges
- Unit III: Information Systems Planning:** Information Systems Planning Strategies – System Analysis & Design – Systems Development Life Cycles – Security & Ethical Issues of Information System.
- Unit IV: Applications of Information Systems to Functional Business Areas:** Decision Support Systems –Components- Management Reporting Alternatives- Operational Information Systems to Business – Financial Accounting System – General Ledger System – Account Receivable System – Accounts Payable, Inventory Control, Sales & Order Processing System, , Payroll System, Marketing Information System,
- Unit V: Enterprise and Global Management of Information** -Information Resource Management - Managing Information Technology-Information Technology Architecture-Organizing IT-Human Resource Management of IT-Issues in Managing International Data Communications-Global System Development.

Suggested Readings

1. James A O’Brien, George M Marakas and Ramesh Behl, **Management Information System**, 7th Edition McGraw-Hill Company Limited, New Delhi, 2009
2. T Robert Schultheis & Mary Sumner, **Management Information Systems – The Manager’s View**, Tata McGraw-hill Company Limited, New Delhi, 1991.

References:

5. C.S.V. Murthy, **Management Information Systems (Text and Applications)**, Himalaya Publishing House, New Delhi, 2009.
6. Kenneth C. Laudon & Jane P. Laudon, **Management Information Systems – Managing the Digital Firm**, Pearson Prentice Hall, Pearson Education, New Delhi, 2002.
7. Robert G. Murdick, Joel E. Ross & James R. Claggett, **Information Systems for Modern Management**, Prentice Hall, New Delhi, 1996.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - FOURTH SEMESTER
404- RELATIONAL DATABASE MANAGEMENT SYSTEMS
(For M.Com-Computer Applications - under CBCS)

Class Hours: 3 ppw

Credits: 5

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- Unit-I:** **Introduction:** Data Vs Information , Database and Database Users, Characteristics of the Database Approach, Implications of Database Approach, Advantages of using DBMS, Database System Concepts, Data Models, Schemas, and Instances. - DBMS Architecture and Data Independence. The Database System Environment, Classification of DBMS.
- Unit-II:** **Data Modeling Using the Entity-Relationship Model:** Entity types, Entity sets, attributes, and Keys, ER Model Concepts, Notation for ER Diagrams, Proper naming of Schema Constructs, Relationship types, degrees and cardinalities . Business Rules, Enhanced ER Model – Representing Super type Sub types, Representing Generalization and Specialization, Specifying constraints.
- Unit-III:** **The Relational Model:** Integrity constraints, Relational tables, transforming EER diagrams into relations, Functional Dependencies and Normalization for Relational Database: Functional Dependencies, Normal Forms Based on Primary Keys, General Definitions of Second and Third Normal Forms Based on Primary Keys, Boyce-Codd Normal Form, Denormalization Relational Algebra, File Organization techniques.
- Unit-IV:** **Relational Database Language:** Data definition in SQL, Queries in SQL, Insert, Delete and Update Statements in SQL, Views, joins in SQL, sorting and grouping in SQL, specifying indexes, Query optimization - strategies – Query decomposition.
- Unit-V:** **Transaction Processing Concepts:** Introduction, Transaction and System Concepts, Desirable properties of transaction, Schedules and Recoverability, Serializability of Schedules, Transaction Support in SQL, Locking Techniques for Concurrency Control, Concurrency Control based on time stamp ordering, Overview of distributed data bases – Overview of access control mechanism.

Suggested Readings

1. Jeffrey A Hoffer, Mary B. Prescott and Fred R McFadden, **Modem Database Management**, Pearson Education, New Delhi, 2010.
2. Abrahamsi. Silberschatz, Henry. F. Korth, S. Sudarshan, **Database System Concepts**, McGraw Hill, New Delhi, 2013.

References

1. Gerald V. Post, **Data Base Management Systems- Designing and Business Application**, Tata Mc Graw Hill Company Limited, New Delhi, 2002.
2. Bipin C Desai, **An Introduction to Database System**, Galgotia Publications Private Limited, New Delhi, 2010.
3. CJ Date, **An Introduction to Database Systems**, Pearson/Addison Wesley Publishers, New Delhi, 2004.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - FOURTH SEMESTER
404-LAB: RELATIONAL DATABASE MANAGEMENT SYSTEMS
(For M.Com-Computer Applications - under CBCS)

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Lab – Students are required to undergo Lab Sessions with SQL.

1. The STUDENT DETAIL databases have a table with the following attributes.
STUDENT (regno: int, name: string, dob: date, marks: int)
 - i) Create the above table.
 - ii) Remove the existing attributes from the table.
 - iii) Change the data type of regno from integer to string.
 - iv) Add a new attribute phone number to the existing table.
 - v) Enter five tuples into the table.
 - vi) Display all the tuples of student table.

2. A LIBRARY database has a table with the following attributes.
LIBRARY (bookid:int, title:string, author:string, publication:string, yearpub:int, price:real)
 - i) Create the above table. Enter five tuples into the table
 - ii) Display all the tuples in student table.
 - iii) Display the different publishers from the list.
 - iv) Arrange the tuples in the alphabetical order of the book titles.
 - v) List the details of all the books whose price ranges between Rs. 100 and Rs. 300

3. The SALARY database of an organization has a table with the following attributes.
EMPSALARY (empcode: int, empname: string, dob: date, department: string, salary:real)
 - i) Create the above table. Enter five tuples into the table
 - ii) Display all the number of employees working in each department.
 - iii) Find the sum of the salaries of all employees.
 - iv) Find the sum and average of the salaries of employees of a particular department.
 - v) Find the least and highest salaries that an employee draws.

4. Consider the insurance database given below.
PERSON (driver-id-no: string, name: string, address: string)
CAR (regno: string, model: string, year: int)
ACCIDENT (report-no: int, date: date, location: String)
OWNS (driver-id-no: string, regno: string)
PARTICIPATED (driver-id-no: string, regno: string, report-no: int, damage-amount: int)
 - i) Create the above tables by properly specifying the primary keys and the foreign keys. Enter at least five tuples for each relation.
 - ii) Demonstrate how you
 - a) Update the damage amount for the car with a specific regno in the accident with Report no 12 to 25000.
 - b) Add a new accident to the database.
 - iii) Find total number of people who owned cars that were involved in accidents in 2012
 - iv) Find the number of accidents in which cars belonging to a specific model were involved

5. Consider the following database of students enrollment in courses and books adopted for each course.
STUDENT (regno: string, name: string, major: string, bdate: date)
COURSE (course-no: int cname: string, dept: string)
ENROLL (reg-no: string, course-no: int, sem: int, marks: int)
BOOK-ADOPTION (course-no: int, sem: int, book-isbn: int)
TEXT (book-isbn: int, book-title: string, publisher: string, author: string)



- i) Create the above tables by properly specifying the primary keys and the foreign keys, Enter atleast five tuples for each relation.
 - ii) Demonstrate how you add a new text book to the database and make this book be adopted by some department.
 - iii) Produce a list of text books (include Course-no, book-isbn, book-title) in the alphabetical order for Courses offered by the 'Computer Science' department that use more than two books.
 - iv) List any department that has all its adopted books published by a specific publisher.
6. The following tables are maintained by a book dealer
- AUTHOR (author-id: int, name: string, city: string, country: string)
PUBLISHER (publisher-id: int name: string, city: string, country: string)
CATLOG (book-id: int, title : string, author-id: int, publisher-id: int, category: int, year: int, price: int)
CATEGORY (category-id: int, description: string)
ORDER-DETAILS (order-no: int, book-id: int, quantity: int)
- i) Create above tables by properly specifying the primary keys and the foreign keys. Enter atleast five tuples for each relation.
 - ii) Give the details of the authors who have 2 or more books in the catalog and the price of the books is greater than the average price of the books in the catalog and the year of publication is after 2010.
 - iii) Find the author of the book which has maximum sales.
 - iv) Demonstrate how to increase price of books published by specific publisher by 10%
7. Consider the following database for BANK.
- BRANCH (branch-name: string, branch-city: string, assets: real)
ACCOUNT (accno: int, branch-name: string, balance: real)
DEPOSITOR (customer-name: string, accno: int)
CUSTOMER (customer-name: string, customer-street: string, customer-city: string)
LOAN (loan-no: int, branch-name: string, amount: real)
BORROWER (customer-name: string, loan-no: int)
- i) Create the above tables by properly specifying the primary keys and foreign keys. Enter at least five tuples for each relation.
 - ii) Find all the customers who have at least two accounts at the main branch.
 - iii) Find all customers who have an account at all the branches located in a specific city.
 - iv) Demonstrate how to delete all account tuples at every branch located in specific city.
8. Consider the following database for ORDER PROCEESING.
- CUSTOMER (cust-no: int, cname: string, city: string)
ORDER (orderno: int, odate: date, ord-amt: real)
ORDER_ITEM (orderno: int, itemno:int, qty: int)
ITEM (itemno: int, unit price: real)
SHIPMENT (orderno: int, warehouseno: int, ship-date: date)
WAREHOUSE (warehouseno: int, city: string)
- i) Create the above tables by properly specifying the primary keys and the foreign keys. Enter at least five tuples for each relation.
 - ii) List the order number and ship date for all orders shipped from particular warehouse.
 - iii) Produce a listing: customer name, no of orders, average order amount.
 - iv) List the orders that were not shipped within 30 days of ordering.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - FOURTH SEMESTER
405 – DATA ANALYSIS WITH SPSS

(For M.Com-Computer Applications - under CBCS)

Class Hours: 3 ppw

Credits: 5

- Unit-I:** **SPSS Window Processes:** Menu Bar – File Menu, Edit Menu, View Menu, Data Menu, Transform Menu, Analyze Menu, Graphs Menu, Utilities Menu, Add-ons Menu, Window Menu and Help Menu – **Creating and Editing a Data File:** Structure of Data View and Variable View – Name, Type, Width, Decimals, Label, Values, Missing, Columns, Align, Measure and Role - **Managing Data:** Dropping and Adding Variables – Listing Cases – Replacing Cases - Missing Cases — Computing New Variables – Recoding Variables – Selecting Cases – Sorting Cases and Merging and Importing Files.
- Unit-II:** **Constructing Variables** – Recoding Existing Variables – Computing the Variables - **Univariate Analysis:** Descriptive Statistics – Frequencies: Listing, summarizing and Sorting Cases – Mean, Media, Mode, Variance and Standard Deviation, Skewness, Maximum, Minimum, Range, Sum and Standard Error - **Creating and Editing Graphs and Charts:** Bar, 3-D Bar, Line, Area, Pie, Box-plot, Scatter Dot and Histogram.
- Unit-III:** **Bi-variate Analysis:** Hypothesis and Significance Tests – Concept of p value - Significance Levels – Relationships between Two Variables – Cross Tabulations – Bar Charts – Correlation – Simple Linear Regression - Scatter plots – **Comparing Means through Bi-variate Analysis:** One-way Analysis of Variance – **t-tests** – Independent Sample t-test – Paired Sample t-test
- Unit-IV:** **Non-parametric Procedures:** Two Independent Sample Tests: Mann-Whitney U-test – Two related Samples Test: Wilcoxon Test, Sign Test – The Runs Test – One-sample Test: Kolmogorov-Smirnov Test – One-Sample Chi-Square Test – Test for Several Related Samples: Friedman One-way ANOVA - K-Sample Median Test.
- Unit-V:** **Multivariate Analysis:** Factor Analysis – Opening Dialog Window – Descriptive Window – Kaiser-Meyer – Olkin(KMO) Measure of Sampling Adequacy – Bartlett’s Test of Sphericity – Extraction of Factors – Principle Component Analysis – Communalities – Total Variance Explained – Eigen Values – Scree Plot –Component Transformation Matrix - Rotated Component Matrix– Interpretation of Output.

Suggested Readings

1. Darren George and Paul Mallery, **SPSS for Windows Step by Step – A Simple Guide and Reference**, 7th Edition, Pearson Education, New Delhi, 2007
2. Sabine Landau and Brian S Everitt, **A Handbook of Statistical Analyses using SPSS**, Chapman & Hall/CRC, Washington DC, 2014 - (for e-book: http://www.academia.dk/BiologiskAntropologi/Epidemiology/PDF/SPSS_Statistical_Analyses_using_SPSS.pdf)

References

1. Stephen Sweet and Karen Grace-Martin, **Data Analysis with SPSS – A First Course in Applied Statistics**, Newyork, 2010.
2. Arthur Griffith, **SPSS for Dummies**, Wiley Publishing, Hoboken, New Jersey, 2007.
3. Robert B Burns and Richard A Burns, **Business Research Methods and Statistics using SPSS**, Sage Publications, New Delhi, 2008.



MASTER OF COMMERCE (COMPUTER APPLICATIONS) - FOURTH SEMESTER
405: DATA ANALYSIS WITH SPSS
(For M.Com-Computer Applications - under CBCS)

Lab: 2 PPW

One Period Lab means 2 hours of Lab Session

Lab – Students are required to undergo Lab Sessions with SPSS Software

1. Exercise on Understanding SPSS menus
2. Exercise on Understanding Structure of Data and Variable View
3. Exercise on Creating and Editing a Data File
4. Exercise on Adding and Dropping Variables
5. Exercise on Recoding Variables
6. Exercise on Sorting Cases
7. Exercise on Merging Files is
8. Exercise on Importing Files
9. Exercise on Computing Variable
10. Exercise on Computation of Mean, Median and Mode
11. Exercise on Computation of Standard Deviation, Variance and Skewness
12. Exercise on Computation of Range, Sum, Minimum and Maximum
13. Exercise on Creating Bar and Line Diagrams
14. Exercise on Creating Histogram, Pie-Chart and Area Chart
15. Exercise on Cross Tabulations
16. Exercise on Computing Correlation
17. Exercise on Computing Linear Regression
18. Exercise on Comparing Means
19. Exercise on One-way Analysis of Variance
20. Exercise on Computation of Independent Sample t-test
21. Exercise on Computation of Paired t-test
22. Exercise on Mann-Whitney U-test
23. Exercise on Wilcoxon Test
24. Exercise on Sign Test
25. Exercise on Runs Test
26. Exercise on Kolmogorov-Smirnov Test
27. Exercise on One-Sample Chi-Square Test
28. Exercise on Friedman One-way ANOVA
29. Exercise on K-Sample Median Test
30. Exercise on Factor Analysis
31. Exercise on Interpretation of Output of Factor Analysis
