

PSGR KRISHNAMMAL COLLEGE FOR WOMEN



College with Potential for Excellence
(An Autonomous Institution, Affiliated to Bharathiar University)
(Reaccredited with 'A' Grade by NAAC, An ISO 9001:2008 Certified Institution)
Peelamedu, Coimbatore-641004



DEPARTMENT OF B.COM (BUSINESS ANALYTICS)

CHOICE BASED CREDIT SYSTEM

BACHELOR OF COMMERCE (BUSINESS ANALYTICS)

2015-2018

PSGR KRISHNAMMAL COLLEGE FOR WOMEN



College with Potential for Excellence
 (An Autonomous Institution, Affiliated to Bharathiar University)
 (Reaccredited with 'A' Grade by NAAC, An ISO 9001:2008 Certified Institution)
 Peelamedu, Coimbatore-641004



DEPARTMENT OF B.COM (BUSINESS ANALYTICS)
2015-2018

Sem	Part	Sub.Code	Title of the Paper	Instr. Hrs. / Week	Contact Hrs.	Tutorial Hrs	Durati on	CIA	ESE	Total	Cre dits
I	I	TAM1401 / HIN1401/ FRE1401	Language I – Tamil I/ Hindi I/ French I	6	86	4	3	25	75	100	3
I	II	ENG1501/ ENG15F1	Language Through Literature Level I/ Language Through Literature Functional Level I	6	86	4	3	25	75	100	3
I	III	DA15C01	Financial Accounting I	4	56	4	3	25	75	100	5
I	III	DA15C02	Fundamentals of Business Analytics	4	56	4	3	25	75	100	4
I	III	TH13A11 B TH13A11 A	Allied – Numerical Methods for Data Analytics (Sampling, Probability and Numerical Methods)	6	86	4	3	25	75	100	5

I	III	DA15CP1	Computer Application Practical I – Office Package	2	30	--	--	--	--	--	--
I	IV	NME14B1/ NME14A1/ NME12WS /NME12AS /ME12GS	Basic Tamil I/ Advanced Tamil I/ Women Studies / Ambedkar Studies/ Gandian studies	2	29	1	3	50 25 100 100 100	50 75 -- -- --	100 100 100 100 100	2
II	I	TAM1402 /HIN1402/ FRE1402	Language II – Tamil II/ Hindi II/ French II	6	86	4	3	25	75	100	3
II	II	ENG1502/ ENG15F2	Language Through Literature Level II/ Language Through Literature Functional Level II	6	86	4	3	25	75	100	3
II	III	DA15C03	Financial Accounting II	6	86	4	3	25	75	100	5
II	III	TH13A16 B/ TH13A16 A	Allied - Statistical Methods for Data Analytics(Optimization, simulation, decision making, modeling)	6	86	4	3	25	75	100	5
II	III	DA15CP1	Computer Application Practical I – Accounting Package	4	57	3	3	40	60	100	3

II	IV	NME14B2 /NME14A 2	Basic Tamil I/ Advanced Tamil I/ Open Course	2	29	1	3	50 25 50	50 75 50	100 100 100	2
II	VI	NM12GA W	General Awareness – Self Study	--	--	--	1	100	--	100	Gr.
III	III	DA15C04	Business Data Mining	6	86	4	3	25	75	100	4
III	III	DA15C05	Cost Accounting	6	86	4	3	25	75	100	5
III	III	DA15C06	Management Accounting	5	71	4	3	25	75	100	4
III	III	DA15A01 DA15A02	Allied Group 1. Econometrics 2. Business Environment	5	71	4	3	25	75	100	5
III	III	DA15CP2	SpreadSheet Modelling I – Financial Analytics	3	45	--	--	--	--	--	--
III	IV	NM14VHR	Value Education	2	26	4	3	100	--	100	2
III	IV	NM10EVS	Environmental Studies	--	--	--	--	--	--	--	--
III	IV	SB15OA01 SB15OAP1	Skill Based Subject Theory Practical	2 1	28 15	2 -	-	--	--	--	--
IV	III	DA15C07	Marketing and Marketing Analytics	5	71	4	3	25	75	100	4
IV	III	DA15C08	Financial Management	6	86	4	3	25	75	100	5
IV	III	DA15C09	Security Analysis and Portfolio	5	71	4	3	25	75	100	4

			Management								
IV	III	DA15A03 DA15A04	Allied Group Enterprise Resource Planning Operations and Supply Chain Analytics	5	71	4	3	25	75	100	5
IV	III	DA15CP2	SpreadSheet Modelling II- Marketing and Portfolio Analytics	4	57	3	3	40	60	100	3
IV	IV	NM10EVS	Environmental Studies	2	26	4	3	100	--	100	2
IV	IV	SB15OA01 SB15OAP1	Skill Based Subject Theory Practical	2 1	28 12	2 3	3 3	25 40	75 60	100 100	4 2
IV	IV		Internship Training(2 Weeks) – submission of certificate	--	--	--	--	100	--	100	2
IV	V		NSS, NCC, YRC and Sports & Games, Eco Watch, YI Net, Rotaract	--	--	--	--	100	--	100	1
V	III	DA15C10	Business Intelligence and Logical Analytics	5	71	4	3	25	75	100	4
V	III	DA15C11	Income Tax	5	71	4	3	25	75	100	4
V	III	DA15C12	Relational Database	5	71	4	3	25	75	100	4

			Management System								
V	III	DA15E01 DA15E02	Elective I e - COMMERCE Operations Management	6	86	4	3	25	75	100	5
V	III	DA15CP3	Computer Applications Practical III – SQL	4	60	--	--	--	--	--	--
V		NM13IS2	Information Security (Level II)	2	26	4	-	100	-	100	Gr.
V	IV	SB15OA02 SB15OAP2	Skill Based Subject Theory Practical	2 1	28 15	2 -	-	--	--	--	--
V	III	DA15AC1 DA15AC2	Advanced Learners Course Business Communication/ Business Management & Ethics – Self Study	--	--	--	3	--	100	100	5*
V	VI		Personality Development	--	--	--	--	--	--	--	--
V	III	DA15CE	Online Comprehensive Examination	--	--	--	--	--	100	--	Gr.
VI	III	DA15C13	Company Law	6	86	4	3	25	75	100	5
VI	III	DA15C14	R Programming	5	71	4	3	25	75	100	4

VI	III	DA15E03 DA15E04	Elective II Total Quality Management Project Management	6	86	4	3	25	75	100	5
VI	IV	SB15OA02 SB15OAP2	Skill Based Subject Theory Practical	2 1	28 12	2 3	3 3	25 40	75 60	100 100	4 2
VI	III	DA15CP3	Computer Application Practical III – R Programming	4	57	3	3	40	60	100	3
VI	III	DA15PROJ	Project Viva Voce	6	--	--	--	25	75	100	5
VI	III	DA15AC3 DA15AC4	Advanced Learners Course Human Resource Management Knowledge Management System – Self Study	--	--	--	3	--	100	100	5*
			Total							3800	140

* Credits applicable to candidates who take up Advanced level Course examination

COMPUTER APPLICATIONS PRACTICAL

The computer application practical is spread over all the six semesters. The faculty in charge of the practical will decide the practical list. A minimum of 10 exercises will be worked out in each semester relevant to areas of Commerce. During the end semester practical examinations, the internal and external examiners will be setting the question paper from the list of practical in the record.

INTERNSHIP TRAINING

The practical training is essential to expose the students to the real life work situation and to strengthen the conceptual knowledge gained in the classroom. 2 weeks internship is to be arranged during the summer vacation after the fourth semester. The training shall be in banking, financial institution, or an industrial enterprise or consultancy organizations. Candidates should maintain a work diary and submit a report at the end of the study. The department to conduct a viva-voce. The Principal of the college and the Head of the Department shall issue a certificate to the effect that the student had satisfactorily undergone the internship training for the prescribed period. The report should contain a minimum of 40 pages.

Evaluation:

Work diary	15 marks
Attendance	10 marks
Report	50 marks
Viva voce	25 marks

PROJECT VIVA VOCE

Project work, which is compulsory, carries 100 marks. A student should select a topic for the project work in the fifth semester itself and submit the project report (dissertation) at the end of the sixth semester. There is viva for project work carrying 25 marks. The guide and an external examiner shall evaluate the project report and conduct the viva. The project work shall be related to commerce with computer applications in business or it may involve software development.

OPEN COURSE

Students who have not opted Basic Tamil / Advance Tamil Course in Semester II can opt open courses offered by various departments. (Inter disciplinary). End semester examination will be conducted at the end of Semester II. The duration of the end semester examination will be 2 hours for a maximum of 50 marks. The ESE marks secured by the candidate will be equated to a maximum of 75 marks.

SKILL BASED SUBJECT

Students have to select any one of the following skill based subject in the III Semester and the papers will be spread over four semesters (III, IV, V, VI semester). The exams will be conducted for these papers in the end of the IV and VI semester.

ALLIED PAPERS

Six options are given for the students in the allied papers in the III and IV semester and they have to choose any one paper. Exams will be conducted in the respective semesters.

ELECTIVE PAPERS

Three options are given for the elective papers in the V and VI semester and they have to choose any one paper. Exams will be conducted in the respective semesters.

QUESTION PAPER PATTERN FOR PROBLEM PAPERS

B.Com (CA); B.Com (e-commerce); B.Com (Actuarial Management); BCA; B.Sc (Computer Science) Question Paper Pattern for all Accountancy papers, Management Accounting, Cost Accounting and Income Tax.

Duration : 3 hrs

Marks : 75 marks

Section A 8 questions with open choice (5/8)
(short answers, definition etc.,)

5 x 3 = 15 marks

Section B 4 questions out of 6 questions

4 x 5 = 20 marks

Section C 4 questions out of 6 questions 4 x 10 = 40 marks

Section B and C – At least One Question from each unit

QUESTION PAPER PATTERN FOR THEORY PAPERS

Duration: 3 hrs Marks: 75 marks

Section A 8 questions with open choice (5/8) 5 x 2 = 10 marks
(short answers, definition etc.,)

Section B 5 questions with either or choice 5 x 5 = 25 marks

Section C 5 questions out of 7 5 x 8 = 40 marks

QUESTION PAPER PATTERN FOR OPEN COURSE

Basics of Marketing

Duration: 2Hrs Marks: 50

Section A 4 Questions out of 6 questions 4*5= 20

Section B 2 Questions out of 3 questions 2*15=30

Section A and B –At least One Question from each unit

QUESTION PAPER PATTERN FOR SKILL BASED SUBJECT

Duration: 3Hrs **Marks:**50

Section A 4 Questions out of 6 questions 4*5= 20

Section B 2 Questions out of 3 questions 2*15=30

QUESTION PAPER PATTERN FOR ADVANCED LEARNERS COURSE

Duration: 3Hrs **Marks:**75

Section A 5 Questions out of 8 questions 5*5= 25

Section B 5 Questions out of 8 questions 5*10=50

SEMESTER I –PART III
CORE I – FINANCIAL ACCOUNTING I
SUBJECT CODE: DA15C01

Credits: 5

Hours: 56

Objectives:

- To have a good working knowledge to enable the students to practically strike a trial balance and prepare the final accounts
- To Strengthen the basic concepts and conventions of accounting practices

Unit I (DL hrs=11)

Accounting concepts and conventions - Preparation of Journal – Ledger - Trial balance- Rectification of errors

Unit II (DL hrs=11)

Depreciation: (Introduction - Methods)* – straight line method -written down value method-annuity method- Reserves and Provisions. Preparation of Final Statement of Accounts- Apportionment of Capital and Revenue expenditure

Unit III(DL hrs=11)

Bank Reconciliation statement- Bills of Exchange

Unit IV (DL hrs=12)

Consignment – Joint Venture

Unit V (DL hrs=11)

Accounting for Non Trading concerns

*** Self Study**

Distribution of marks – theory 20% problems 80%

Text Book:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Jain. S .P & Narang K.L.	Principles of Accountancy	Kalyani Publishers	reprinted 2012, Fourth Edition

Books for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Nagarajan.K.L,Vinayagam.N & P.L.Mani	Financial Accounting	Sultan Chand & Sons	2007 fifth Edition
2.	Reddy.T.S & A.Murthy	Financial Accounting	Margham Publications	reprinted 2013, Sixth revised

SEMESTER I –PART III
CORE II – FUNDAMENTALS OF BUSINESS ANALYTICS
SUBJECT CODE: DA15C02

Credits: 4

Hours: 56

Objective

- To equip analytical skills to acquire and interpret data
- To build the knowledge and technical expertise in statistical thinking

Unit I(DL hrs=11)

Introduction to the BA Role: Business Analyst - The evolving role of the Business Analyst - The BA roadmap - different levels of business analysis - The basic rules of Business Analysis - IT and non-IT change Basic Principles of Business Analysis - Classical Requirements Engineering and Business Analysis -Tasks performed by Business Analysts.

Project Definition and Scoping:Aspects of a project - The importance of understanding and defining objectives and scope and identifying stakeholders - Projects phases and deliverables- The role of the BA across the project lifecycle - Project approaches (and how they affect the BA) – Waterfall, Agile, Iterative, Incremental.

Unit II(DL hrs=11)

Interviewing and Fact Finding:The user perception of IT and projects - Interview different types of user and to capture and assimilate information. **Requirements Definition:**Requirements - Different techniques for documenting requirements -Types of requirement including Business, Functional and Non-Functional - The importance of defining requirements at a high and low

level of detail –*The difference between requirements and solutions*– Identifying requirements - Business stakeholders to drive out high quality requirements

Unit III(DL hrs=12)

Process Modelling: Examines business process modelling - Introduces the industry standard process modelling technique – BPMN - Diagram levelling (how much detail to show in a diagram) - Process modelling as a requirements definition tool. **Business Analysis Planning &**

Monitoring: Plan Business Analysis Approach - Conduct Stakeholder Analysis - Plan Business Analysis Activities - Plan BA Communication -Plan Requirements Management Process - Manage Business Analysis Performance

Unit IV(DL hrs=11)

Data Modelling: Data modeling - Entity relationship diagrams and define attributes.**Elicitation** - Prepare for Elicitation - Conduct Elicitation Activity - Document and confirm Elicitation Results. **Ensuring Requirements Quality:** Development of Use Cases and scenarios - Requirements quality criteria.

Unit V(DL hrs=11)

Managing Delivery: Getting to solutions - the role of the BA beyond the requirements definition phase. Defining detailed requirements - Identifying business impact - Supporting business implementation. **Requirements Engineering Techniques:** Production of a Requirements Catalogue - Requirements Databases and CASE tools - Knowledge Types and Investigative Techniques – Prototyping - Structured Walkthroughs - Requirements Management.

* Self Study

Text Book:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Haydn Thomas - Demonoid	Business Analysis Fundamentals	Kalyani Publishers	reprinted 2012, Fourth Edition

Book for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Thomas Frisendal	Design Thinking Business Analysis: Business Concept Mapping.	Educational Publishing	1999 ISBN: 0324015658

MODEL LIST FOR COMPUTER APPLICATION PRACTICAL I
SEMESTER I - OFFICE PACKAGE
SUBJECT CODE: DA15CP1

Credits: 3

Hours: 30

WORD

1. Type a paragraph and Perform:
 - a. Font using font size, font style, line spacing tc.
 - b. Insert page numbers at the bottom right alignment
 - c. Insert header consisting of date and time, insert footer consisting of page
 - d. Numbers.
 - e. Change the paragraph into two or three columns
 - f. Check the spelling and grammar
 - g. Use bullets and numbering
 - h. Use drop cap
 - i. Find and replace a word
2. Prepare a class timetable using table option and merging cells.
3. Prepare an application for a job with the bio-data using auto text.
4. Prepare a college day invitation using borders and shading option, word art and pictures.
5. Using mail merge, draft a shareholder's meeting letter for 5 members.

EXCEL

1. Enter the data with following fields:
 - a) Serial no
 - b) Name
 - c) Address
 - d) City
 - e) Date of Joining
 - f) Salary
 - g) Course

- h) Duration
- i) No of students
- j) Total fees

Perform the following:

- a. Change font as bold
 - b. Arrange the alignment as center
 - c. Rename the sheet
 - d. Insert a new sheet
 - e. Move a sheet
 - f. Delete a sheet
 - g. Hide/Unhide Column
 - h. Change Column Width
 - i. Usage of sorting option for the “Name” field.
 - j. Usage of filter for the field “City” and “Salary”
2. Draw different graphs for a sample data.
 3. Calculate Simple and Compound Interest.
 4. Enter the semester marks and calculate total auto-sum and average using function wizard.
Calculate Mean, Median, Mode, Standard Deviation and Correlation.
 5. Calculate Current Ratio, Liquid Ratio, Stock Turnover Ratio, Return on Net Capital Employed, Operating Ratio.
1. Creating Pivot Table to analyse sales report
 2. Advance Filter with Multi Criteria using Lookup functions
 3. Basic concepts related with user defined Macros by automating recording a Macro
 4. Depreciation Case Study as financial model
 5. EMI calculation as financial model

POWERPOINT

1. Create different slides in PowerPoint advertising a product with audio connection and present a slideshow using Custom animation and slide transition.

ACCESS

1. Create a table using Design view with the given fields:
S.no, Name, Address, City, Country, Date of Join, Department and Salary.

2. Create a table using Table Wizard called 'Student Marks' and create form using wizard.

3. Create a table called 'Books' with the following fields:

- S.no
- Title of the Book
- Author name
- Category
- Price
- Availability

Do the following queries:

- a) Sort the table in the ascending order of author's name
- b) Find the author of a particular book and its price
- c) Find the details of the books which are available in the library
- d) Find if a particular book is available or not .
- e) Find the price of a particular book
- f) Find the no of books in Commerce category and arrange it in descending order of price

4. Create a database called ' Bank' with tables - Deposits and Loans. Perform the following:

- i) Find all loans made at Coimbatore branch with loan amount greater than 10000.
- ii) List in alphabetical order the names of the customers whose loans are made at Coimbatore branch.
- iii) Find the loans with amounts between 10000 and 50000.

The Deposits table should have the following fields

account no, branch name, customer name, balance amount.

The Loans table should have the followings fields

loans no, branch name, customer name, loan amount.

SEMESTER II – PART III
CORE III – FINANCIAL ACCOUNTING II
SUBJECT CODE: DA15C03

Objectives:

- To enhance students knowledge in Partnership and Company Accounts
- To give them adequate knowledge regarding Hire system and Branch accounts

Credits: 5

Hours: 86

UNIT I (DL hrs = 17)

Branch accounts excluding foreign branches – Hire purchase and Installment system including hire purchase trading accounts

UNIT II (DL hrs = 17)

Partnership Accounts – division of profits-fixed and fluctuating capital- past adjustments-guarantee of profits.

UNIT III (DL hrs= 18)

Partnership Accounts – Admission – Retirement – Death – Dissolution.

UNIT IV (DL hrs = 17)

Issue, Forfeiture and Reissue of Shares – Final Accounts of Companies under the provisions of the Companies Act– (Managerial Remuneration)*

UNIT V (DL hrs= 17)

Valuation of Goodwill and Shares – Liquidation of Companies – Statement of Affairs – Deficiency a/c.

***Self Study**

Text Books:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Jain and Narang	Advanced Accountancy-I	Kalyani publications	reprint 2012, 18 th Edition
2.	Jain and Narang	Advanced	Kalyani	2012, 19 th Edition

		Accountancy- II(IV&V unit)	publications	
--	--	-------------------------------	--------------	--

Book for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Gupta R.L. and Radhaswamy	Advanced Accountancy-I	Sultan Chand & Sons	13 th Edition 2010
2.	Reddy and Murthy	Financial Accounting	Margham publication	7 th revised Edition, reprint 2012

**MODEL LIST FOR COMPUTER APPLICATION PRACTICAL I
SEMESTER-II- ACCOUNTING PACKAGE
SUBJECT CODE: DA15CP1**

Credits: 3

Hours: 57

ACCOUNTING PACKAGE

1. To Create Company, Groups and Ledgers
2. To prepare Receipt & Payment voucher entries
3. To prepare Purchase Order, Purchase voucher and Debit Note for a given list of transactions
4. To prepare Sales Order, Sale voucher and Credit Note for a given list of transactions
5. To prepare Contra and Journal vouchers
6. To prepare simple Payroll voucher and to display payroll report(pay slip report, pay sheet report and payroll statements report)
7. To calculate TDS, VAT
8. To prepare final accounts for a given trial balance
9. To Prepare BRS

10. To prepare accounts with inventory
11. To prepare Stock Summary and Godown wise summary.

SEMESTER III – PART III
CORE IV – BUSINESS DATA MINING
SUBJECT CODE: DA15C04

Objectives:

- To introduce students to the basic concepts and techniques of Data Mining.
- To develop skills of using recent data mining software for solving practical problems.
- To gain experience of doing independent study and research.

Credits: 4

Hours: 86

Unit I

Introduction to Data Mining: Data mining - Related technologies - Machine Learning, DBMS, OLAP, Statistics -Data Mining Goals - Stages of the Data Mining Process - Data Mining Techniques - Knowledge Representation Methods - Applications. **Data Warehouse and OLAP** - Data Warehouse and DBMS - Multidimensional data model - OLAP operations.

Unit II

Data preprocessing: Data cleaning - Data transformation - Data reduction - Discretization and generating concept hierarchies - Installing Weka 3 Data Mining System. **Data mining knowledge representation** - Task relevant data - *Background knowledge* - Interestingness measures - Representing input data and output knowledge - Visualization techniques.

Unit III

Attribute-oriented analysis - Attribute generalization - Attribute relevance - Class comparison - Statistical measures. **Data mining algorithms:** Association rules - Motivation and terminology - Basic learning/mining tasks - Inferring rudimentary rules: 1R algorithm - Decision trees - Covering rules - Prediction - The prediction task - Statistical (Bayesian) classification - Bayesian networks - Instance-based methods (nearest neighbor) - Linear models.

Unit IV

Evaluating: Basic issues - Training and testing - Estimating classifier accuracy (holdout, cross-validation, leave-one-out) - Combining multiple models (bagging, boosting, stacking) - Minimum Description Length Principle (MLD). **Mining real data:** Preprocessing data from a

real medical domain - Applying various data mining techniques to create a comprehensive and accurate model of the data.

Unit V

Clustering: Basic issues in clustering - First conceptual clustering system: Cluster/2 - Partitioning methods: k-means, expectation maximization (EM) - Hierarchical methods: distance-based agglomerative and divisible clustering - Conceptual clustering: Cobweb.

Advanced techniques, Data Mining software and applications: Text mining: extracting attributes (keywords), structural approaches (parsing, soft parsing) - Bayesian approach to classifying text - Web mining: classifying web pages, extracting knowledge from the web - Data Mining software and applications.

*Self Study

Text Book:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Ian H. Witten and Eibe Frank	Data Mining: Practical Machine Learning Tools and Techniques	Morgan Kaufmann publications	(Second Edition), 2005, ISBN: 0-12-088407-0

Book for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	J. Han and M. Kamber	Data Mining: Concepts and Techniques	Morgan Kaufman	2nd Ed. 2006
2.	M. H. Dunham	Data Mining: Introductory and Advanced Topics	Pearson Education	2 nd Ed. 2001

SEMESTER III –PART III
CORE V - COST ACCOUNTING
SUBJECT CODE – DA15C05

Objectives:

- To have practical application on costing
- To understand the basics on material, labor and overheads

Credits: 5

Hours: 86

UNIT I(DL hrs = 17)

Cost Accounting – Definition, Meaning & Scope – Relationship of Cost Accounting with Financial Accounting and Management Accounting – Methods of Costing – Cost Analysis, Concepts and Classifications — Costing as an Aid to Management – (Limitations and Objections Against Cost Accounting)*. Elements of Cost, Preparation of Cost Sheet and Tender.

UNIT II (DL hrs = 17)

Materials – Material control – Techniques of material control - Maximum, Minimum & Reordering Levels – EOQ – Purchasing of Materials, Procedure and Documentation involved in Purchasing – Requisitioning for Stores – Methods of Valuing Material Issues.

UNIT III(DL hrs = 17)

Labor – Computation of Labor cost - Idle Time - over time - Labor Turnover – Remuneration and incentives.

Overhead – Classification of Overhead – Allocation, Apportionment and Absorption of Overhead – Computation of Machine Hour Rate

UNIT IV(DL hrs = 18)

Process Costing – Features – Process Losses, Waste, Scrap, Normal Process Loss, Abnormal Process Loss, Abnormal Gain and Inter-process Profit (Excluding Equivalent Production) - Costing of Joint Products and By-Products.

UNIT V(DL hrs = 17)

Operating Costing – Contract Costing - Reconciliation of Costs and Financial Accounts. Emerging trends in Activity based costing and Activity based management

***Self Study portion**

Distribution of Marks Theory 40% and Problems 60%.

Text Book:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Jain S.P. and Narang K.L.	Cost Accounting	Kalyani Publishers	Reprint 2010, Fourth Edition

Books for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Iyengar	Cost Accounting	Sultan Chand	2009, 7 th Edition
2.	Maheswari S N	Principles of Cost Accounting	Sultan Chand	Reprint 2010, Sixth Edition
3.	Pillai R.S.N.and Bagawathi	Cost Accounting	S. Chand	2010, Fourth Edition
4.	Shukla M.C.,Grewal T.S	Cost Accounting	S.Chand	2009, Sixth Edition

SEMESTER III- PART III
CORE VI -MANAGEMENT ACCOUNTING
SUBJECT CODE: DA15C06

Objectives:

- To study the managerial aspect of accounting
- To know the tools and techniques of financial analysis
- To learn the techniques of management of current assets

Credits: 4

Hours: 71

Unit-I: (DL hrs = 14)

Management accounting-Meaning, objectives, functions and scope - Relationship between Management Accounting, Cost Accounting and Financial Accounting - Tools and Techniques – (Limitations)* – Financial Statement Analysis – Importance - Tools for Analysis and Interpretation - Common size statements, Comparative statements, Trend Analysis.

Unit-II (DL hrs = 15)

Ratio Analysis-Meaning, nature, significance and limitations-Analysis of financial position- profitability ratios-leverage ratios-construction of Balance Sheet.

Unit-III (DL hrs = 14)

Fund flow Analysis – Cash Flow Analysis

Unit-IV (DL hrs = 14)

Cost-Volume-Profit Analysis-Marginal Costing and Break-even Analysis-Managerial applications of marginal costing-Arm's length Costing-Significance and limitations of Marginal Costing.

Unit-V (DL hrs = 14)

Budgeting and Budgetary Control-Definition, Importance, Essentials and Classification of Budgets-Preparation of Budgets - Production, Purchase, Cash and flexible budget (problems) – Zero Base Budgeting.

Distribution of Marks-Theory 40% and Problems 60%

*** Self Study**

Text Book:

S.No	Author Name	Title of the Book	Publishers	Year and Edition
1.	Sharma R.K.,Sashi Gupta. K,Neeti Gupta	Management Accounting	Kalyani Publishers	Second Revised Edition,2009

Books for Reference:

S.No	Author Name	Title of the Book	Publishers	Year and Edition
1.	Jain and Narang	Cost and Management Accounting	Kalyani Publishers	Third Edition, Reprint 2008
2.	Maheswari S.N	Management Accounting	Sultan Chand & Sons	Second Edition Reprint 2009
3.	Reddy T.S, and Reddy H.P	Management Accounting	Margham Publications	Fourth Edition, Reprint 2009

SEMESTER III –PART III
ALLIED I–ECONOMETRICS
SUBJECT CODE: DA15A01

Credits: 5

Hours: 71

Objective:

- To have basic knowledge in the concepts involved in economics
- To acquire expert knowledge in the principles of economics

UNIT I (DL 14 Hrs)

Introduction to Economics – Wealth, Welfare and Scarcity Views on Economics - Positive and Normative Economics. *Definition – Scope and Importance of Business Economics*. Concepts: Production Possibility frontiers – Opportunity Cost – Accounting Profit and Economic Profit – Incremental and Marginal Concepts – Time and Discounting Principles – Concept of Efficiency

UNIT II (DL 14 Hrs)

Demand and Supply Functions: Meaning of Demand – Determinants and Distinctions of demand – Law of Demand – Elasticity of Demand – Demand Forecasting – Supply concept and Equilibrium. Consumer Behaviour: Law of Diminishing Marginal utility – Equimarginal Utility – Indifference Curve – Definition, Properties and equilibrium

UNIT III (DL 14 Hrs)

Production: Law of Variable Proportion – Laws of Returns to Scale – Producer's equilibrium – Economies of Scale. Cost Classification – Break Even Analysis. Product Pricing: Price and Output Determination under Perfect Competition, Monopoly – Discriminating monopoly – Monopolistic Competition – Oligopoly – Pricing objectives and Methods

UNIT IV (DL 14 Hrs)

National Income - Gross National Product -Net National Product - Measurement of National Income - Consumptions, savings and investments. Theory of Employment- Type of unemployment- Labour and Population theories- Definition of capital and growth of capital-

Steps in capital formation. Money - Definition and functions of money- Quantity theory of money. Public Finance-Direct and indirect taxes-Principle of taxation-Effect of taxation on production and distribution-Deficit financing system.

UNIT V (DL 15 Hrs)

Monetary and Fiscal Policies– measures of money stock – policy and money supply – instruments of monetary policy – fiscal policy – the union budget – state budgets – finances of the union and the states – the Finance commission – importance of the budget.

***Self study**

Text Books:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Francis Cherunilam	Business Environment(Unit V)	Himalaya Publishing House, Mumbai – 04.	2010 V edition
2	Shankaran S	Business Economics (Unit IV)	Margham Publications Ch -17	2009 V edition
3	Sundharam KPM Sundharam EN	Business Economics (Unit I-IV)	Sultan Chand & Sons - New Delhi – 02.	Reprint 2008

Books for Reference:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Chaudhary C.M	Business Economics	RBSA Publishers - Jaipur - 03.	2009,V edition
2	Mehta P.L	Managerial Economics–Analysis, Problems & Cases	Sultan Chand & Sons - New Delhi – 02.	2008,X edition

SEMESTER III - PART III
ALLIED I – BUSINESS ENVIRONMENT
SUBJECT CODE: DA15A02

Credits: 5

Hours: 71

Objective:

- To have basic knowledge in the concepts involved in management
- To acquire expert knowledge in the functions of management

UNIT I (14Hrs)

Theoretical Framework of Business Environment - Concept-Significance & Nature of Business Environment -Elements of Business Environment - Levels of Environment - Internal and external - Changing Dimensions of Business Environment- Economic System Interface - Environmental Scanning and Monitoring.

UNIT II (14 Hrs)

Economic Environment of Business - Economic Planning in India - Industrial Policy - Fiscal Policy - Monetary Policy - Export and Import Policy - Public Sector and Economic Development- Economic Reforms -Liberalization and Structural Adjustment Programmes.

UNIT III (14 Hrs)

Social Environment – Socio - Cultural Environment - Critical Elements of Socio Cultural Environment - Social Institutions and System social Values and Attitude social Groups - Middle Class - Emerging Rural Sector in India - Consumerism in India - Social Responsibility of Business - Social Audit - Corporate Governance.

UNIT IV (15 Hrs)

Financial Environment of Business - Indian Money Market - Monetary and Fiscal policies -Financial Market structure - Growth of capital-Money and Capital Markets - Industrial Finance -Industrial Financial Institutions.

UNIT V (14 Hrs)

Labour Environment - Labour Legislation in India- Labour Welfare and Social Security-Industrial Relations-Trade Unions-Social Responsibilities of Trade Unions- Limitations and Problems of Trade Unionism in India.

Text Book

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Francis Cherunilam	Business Environment	Himalaya Publishing House	2011, 20thedition

Reference Book

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
--------	-------------	-------------------	-----------	------------------

1	Adhikary M	Economic Environment of Business	Sultan Chand & Co New Delhi,	2010,12 th revised edition
2	Aswathappa	Essentials of Business Environment	Himalaya Publishing House	2011 ,11 th edition

MODEL LIST FOR COMPUTER APPLICATION PRACTICAL II
SEMESTER-III- SPREADSHEET MODELING I – FINANCIAL ANALYTICS
SUBJECT CODE: DA15CP2

Credits: 3

Hours: 57

1. Preparation of Income Statement:

Input: Receipts & Payments. **Functions to be used:** Data validation, Audit Toolbar, 'fx' – functions, Conditional Formatting, Combo Boxes, Controls, Scenarios, Goal Seek, Auto Correct.

Expected Output: Income Statement

2. Time Value of money:

Input: Cash Flows. **Functions to be used:** FV, NPER, PMT, PV, TYPE,

Expected Output: NPV, IRR, ROI

3. Estimating the share price:

Input: Share Prices. **Functions to be used:** Graph, Trend Setting.

Expected Output: Trend line

4. Calculation of Risk Adjusted Rate

Input: Share Prices.**Functions to be used:** CAPM Functions

Expected Output: Beta value and Trend line

5. Capital Rationing.

Input: Cash Flows.

Functions to be used: Solver Parameters

Expected Output: Ranking based on Pay-back period

6. Leverage

Input: Various Costs.

Functions to be used: Goal Seek.

Expected Output: DOL, DFL and DCL; BEP graph

7. Designing Capital Structure

Input: Summarized Income Statement.

Functions to be used: Goal Seek

Expected Output: EPS, EPS growth rate.

8. Inventory Management

Input: Inventory data. **Functions to be used:** Scenarios

Expected Output: EOQ, Max level, Min level, Graph.

9. Credit Policy

Input: Opening and Closing Receivables.

Functions to be used: Min, Max.

Expected Output: Aging Schedule

10. Cash flow Estimation

Input: Cash flows.

Functions to be used: Auto correct

Expected Output: Cash Budget

Note: Theory combined with problems using formulas are taught simultaneously in Computer lab using MS Excel software.

Book Recommended:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Bodhanwala.R.J	Financial Management using Excel Spreadsheet	Taxmann Publication	2010 3 rd ed.

SEMESTER IV –PART III
CORE VII - MARKETING AND MARKETING ANALYTICS
SUBJECT CODE: BB15C07

Credits: 4

Hours: 71

Objective:

- To develop marketing strategies and resource allocation decisions driven by quantitative analysis.
- To understand issues related to integrated marketing communications, pricing, digital marketing, and quantitative analysis.

UNIT I (DL hrs=14)

Market: - Meaning, Definition, Classification of Markets. Marketing: - Meaning, Definition, Features, Importance, Evolution and Functions of Marketing- Difference between Marketing and Selling. Marketing Environment: -Micro and Macro Marketing Environment, Controllable and Uncontrollable Factors- Modern Marketing Concepts – Marketing Mix – Definition and Elements – Market Segmentation. Segmentation and Positioning Analysis using Ranking Techniques.

UNIT II(DL hrs=14)

Product: - Meaning, Definitions – Elements of Product Policy and Branding Strategies – Product Life Cycle and New Product Planning. Price: - Meaning, Definition, Importance, Factors affecting pricing decisions, Kinds of Pricing – Product and Pricing Analytics using Statistical Techniques.

UNIT III (DL hrs=15)

Promotion Mix: - Sales Promotion, Meaning, Definition, Objectives, Advantages and Kinds of Sales Promotion. Advertising: - Meaning, Definition, Functions, Objectives, Advantages, Kinds of Advertising Media. Personal Selling: - Meaning, Definition, Objectives, Importance, Qualities of a Good Sales Man, Features and Process of Personal Selling. Channels

of Distribution:- Meaning, Definition, Importance, Types, Factors Determining Choice of Channel of Distribution. Promotion and Distribution Analytics using Statistical Techniques.

UNIT IV (DL hrs=14)

Agricultural Marketing in India – Problems and Remedies, Regulated Markets-Functions and Advantages. Organized Markets- Characteristics, Commodity Exchange- Future Contracts – Hedging. Co-operative Marketing - Objectives – Features - Functions-Advantages and Limitations. Commodity related analysis using Con-Joint Analysis.

UNIT V (DL hrs=14)

E-Marketing – (Difference between e-marketing and e-business)* – E-Marketing past, present and future. Strategic e-marketing: Strategic planning – e-business models. E-Marketing plan: overview – creating- steps in e-marketing plan. Planning using Decision Trees.

***Self Study**

Text Books:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Add El Ansary, Raymond frost	E-Marketing	Prentice hall of India Pvt Ltd, New Delhi	4 th Edition, 2008.
2.	Pillai R.S.N. and Bagavathi	Modern Marketing Principles and Practices	S.Chand & Co. New Delhi	Reprint 2011, 4 th Edition

Books for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Gupta C.B., Rajan Nair N.	Marketing Management	Sultan Chand and Sons, New Delhi	12 th Edition Reprint : 2010
2.	Lilien, Gary L. and Arvind Rangaswamy	Marketing Engineering:	Trafford Publishing.	Revised Second Edition, (ISBN

		Computer-Assisted Marketing Analysis and Planning		141202252-5), 2004
--	--	---	--	-----------------------

SEMESTER IV –PART III

CORE VIII - FINANCIAL MANAGEMENT

SUBJECT CODE: DA15C08

Objectives:

- This learning path examines the fundamental concepts of financial management with an emphasis on the cost of capital, leverages, working capital management and dividend theories.

Credits: 4

Hours: 71

UNIT I (DL=14 hrs)

Nature and scope of financial management-objectives-financial decisions-relationship between Risk and return-role and (functions of financial manager)*-time value of money

UNIT II (DL=15 hrs)

Cost of capital meaning and importance-cost of debt, preference, equity and retained earnings-weighted average cost of capital-capital budgeting-techniques-ROI pay back and discounted Cash Flow.

UNIT III (DL=14 hrs)

Financial leverages-measures-EBIT-EPS analysis-operating leverage-financial, business and operating risks-theories of capital structure-net income approach-net-operating income approach MM hypothesis-determinants of capital structure.

UNIT IV(DL=14 hrs)

(Working capital management concepts -need- determinants)* - estimating working capital needs-computation of working capital.

UNIT V (DL=14 hrs)

Dividend theories-Walter's model-Gordon and MM's model-dividend policy -forms of dividend-Determinants of dividend policy.

***Self Study** Theory – 60% Problems – 40%

Text Book:

S.No	Author name	Title of the Book	Publisher	Year &Edition
1.	Shashi .K.Gupta R.K.Sharma	Financial Management	Kalyani Publishers	7 th Edition, reprint 2013

Books for reference:

S.No	Author name	Title of the Book	Publisher	Year &Edition
1.	Khan&Jain	Financial Management	Tata McGraw Hill	4 th Ed 2004
2.	Maheshwari S.N.	Financial Management	Sultan Chand & Sons	13 th Ed 2007
3.	Pandey I. M.	Financial Management	Vikas publishing House Ltd	6 th Reprint 2003
4.	Prasanna Chandra	Financial Management	Tata McGraw Hill	5 th Edition 2003

SEMESTER IV –PART III
CORE IX – SECURITY ANALYSIS & PORTFOLIO MANAGEMENT
SUBJECT CODE – DA15C09

Objectives:

- To know about the behavior of security market
- To understand to use our own approach to valuation and portfolio management.

Credits: 4

Hours: 71

UNIT I (DL 14 Hrs)

Investments: Nature and scope-Investment and Speculation – Feature of an investment programme - Investment Process – Stages in investment – Element of investment – Approaches to Investment. Returns - Risk: Risk Classification – systematic, unsystematic risk Measurement - investor's attitude towards return and risk.

UNIT II (DL 15 Hrs)

Investment Alternatives: Investor Classification-Corporate Bonds – Bond indenture-features of Bonds – Types, Classification , Convertible bonds – Evaluation – Analysis of Preference Shares – Equity Shares – Options, Warrants.Government Securities-Types .Life insurance, investment in units, investment in land, Gold, Silver, Diamonds, Stamps, Antiques.

UNIT III (DL 14 Hrs)

Fundamental Analysis: Economic analysis - Industry analysis – Company Analysis – Company Financial Statement – Ratio Analysis – Book value – Market Value of Shares – Growth Share, Income Shares. Technical Analysis: Assumptions – Dow theory Charts and Signals – Technical Indicators.

UNIT IV(DL 14 Hrs)

Efficient Market Theory: Theory – Weak Form – Semi Strong form-Strong form of Market-Experiments and Analysis of theory. Portfolio Analysis: Traditional Vs Portfolio

Analysis - Markowitzs theory – Efficient Frontiers – Sharp Ideal Index Illustrations – Foreign security investments – affecting the Indian investors- opportunities.

UNIT V(DL 14 Hrs)

Portfolio Selection: Efficient Frontiers and Portfolio Selection – Borrowing and lending factor and efficient frontier – Internal Diversification. Techniques of Portfolio revision: Formula Plans- Constant Rupee Value – Constant Ratio – Variable Ratio – Rupee Cost Averaging.

* **Self Study**

Text Book:

Sl.No.	Title of the Book	Author Name	Publisher	Year and Edition
1.	Investment Management- Security Analysis & Portfolio Management	Preeti Singh	Sultan Chand & Sons, New Delhi	2007 Edition

Books For Reference:

Sl.No.	Title of the Book	Author Name	Publisher	Year and Edition
1.	Security Analysis & Portfolio Management	Donald & Fischer	Prentice hall, Delhi	2007
2.	Portfolio Management.	K. Bhalla	S.chand Publishers	2007
3.	Portfolio Management	Prasanna Chandra	Tata MC grawhill Publishers	11 th Edition 2004
4.	Security Analysis & Portfolio Management	Punithavathy Pandian	Vikas Publishers	2008

SEMESTER IV -PART III
ALLIED II-ENTERPRISE RESOURCE PLANNING
SUBJECT CODE – DA15A03

Objectives:

- To understand the concepts of Enterprise Resource Planning
- To understand the Enterprise Resource Planning techniques

Credits: 5

Hours: 71

UNIT I(DL hrs = 14)

Introduction to ERP: Introduction – Evolution of ERP – Meaning – Growth – Advantages of ERP – Importance- Characteristics of ERP-Components of ERP system-Scope of ERP- Benefits of ERP

UNIT II(DL hrs = 15)

ERP related technologies to business: Introduction – Business Process Reengineering (BPR) – Management Information System (MIS) – Data warehousing – Data mining – On-line Analytical Processing (OLAP) – (Supply Chain Management)*-Product life cycle management (PLCM)-Customer relationship management (CRM)

UNIT III(DL hrs = 14)

ERP-A Manufacturing Perspective: Introduction – CAD/CAM – Materials Requirement Planning (MRP I, II) – CAD/CAM-JIT and Kanban- Distribution Requirement Planning (DRP)

UNIT IV (DL hrs = 14)

ERP Modules: Functional modules of ERP software

UNIT V (DL hrs = 14)

ERP implementation: basics-ERP implementation life cycle - Success and Failure factors of an ERP implementation.

***Self study**

Text Book

S.No	Author Name	Book Name	Publisher	Year and edition
1.	Alexis Leon	Enterprise Resource Planning	Tata McGraw Hill Company Limited	2007, Second edition

Books for reference

S.No	Author Name	Book Name	Publisher	Year and edition
1.	Brady, Monk, Wagner	Enterprise Resource Planning.	Thomson course Technology,	2005.2 nd edition
2.	Goyal S P	Enterprise Resource Planning.	Tata McGraw Hill Company Limited	2011, 3 rd edition
3.	Pankaj Sharma	Enterprise Resource Planning	APH Publishing Corporation	2004, 1 st edition

SEMESTER IV –PART III
ALLIED II–OPERATIONS AND SUPPLY CHAIN ANALYTICS
SUBJECT CODE: DA15A04

Credits: 5

Hours: 71

Objective:

- To introduce the basics of Operations and Supply Chain Management.
- To equip the basic concepts on quantitative modeling of the various decision problems.

Unit I(DL hrs = 14)

Forecasting: Need for forecasting - Quantitative methods. **Facility layout and location** - Qualitative aspects - Quantitative models for layout – decisions - c. Product, process fixed position, group layout. Location decisions-quantitativemodels.

Unit II(DL hrs = 14)

Capacity and aggregate planning: Capacity measurement, Long-term and short term strategies. Aggregate planning. Inventory management: Various costs in inventory management and need - Deterministic models and discounts - Probabilistic inventory management.

Unit III(DL hrs = 14)

Scheduling models and applications: Scheduling in MRP system - Sequencing rules and applications - Batch production sequencing and scheduling. **Introduction to supply chain:** Definition, complexity, key issues - Centralized vs. decentralized systems.

Unit IV(DL hrs = 14)

Value of information and supply chain integration: Bullwhip effect - Push-based, pull based systems. **Outsourcing** : Make or buy decisions. **Transportation decision:** Driver of the decision - Network design decisions - Cross-docking, transshipment.

Unit V(DL hrs = 15)

Distribution and logistics in supply chains: Direct shipment/intermediate storage Policies - Vehicle routing models - Third-party logistics. **Information technology in supply chain:** Enabling supply chain through IT - ERP vendor platforms - Service oriented architecture (SOA) - RFID.

Text Book:

S.No	Author Name	Title of the Book	Publishers	Year and Edition
1.	David Collier, James Evans	Operations Management	South-Western Cengage Learning	Second Edition,2012
2.	Janat Shah	Supply Chain Management	University of Nottingham, UK.	First Edition, 2004

Books for Reference:

S.No	Author Name	Title of the Book	Publishers	Year and Edition
1.	Heizer and Render	Operations Management	Pearson	Second Edition, 2011
2.	Chopra and Meindl.	Supply Chain Management	Prentice Hall Publishing	Second Edition 2010

MODEL LIST FOR COMPUTER APPLICATION PRACTICAL II
SEMESTER-III- SPREADSHEET MODELING II – MARKETING AND PORTFOLIO
ANALYTICS

SUBJECT CODE: DA15CP2

Credits: 3

Hours: 57

1. Market Segmentation
 2. Marketing Mix
 3. Marketing strategies and planning
 4. Business operations
 5. Promotion and Distribution analytics
 6. Price, Sales Analytics
 7. Product and Service analytics
 8. Organization and functioning of various securities markets
 9. Security-market indicator series and the source and direction of potential biases
 10. Security valuation, stock-market analysis, industry analysis, technical analysis, and discounted cash-flow applications
 11. Futures, options and swaps markets
 12. Portfolio management and common asset-pricing models

SEMESTER V –PART III

CORE X –BUSINESS INTELLIGENCE AND LOGICAL ANALYTICS

SUBJECT CODE – DA15C10

Credits: 4

Hours: 71

Objectives:

- To equip knowledge on how technical components of Business Intelligence
- To develop an ability to transfer and relate the formal knowledge of theory to practice.

UNIT I

Introduction to Business Intelligence: Framework for Business Intelligence – Intelligence Creation – Transaction Processing Versus Analytic Processing – Major Tools and Techniques of BI.

UNIT II

Data Warehousing – Data Warehousing Definition – Process – Architecture – Data Integration – Data Warehouse Development – Data Warehousing Implementation – Real Time Data Warehousing – Data Warehouse Administration, Security Issues and Future Trends

Unit III

Business Performance Management - Strategize – Plan – Monitor – Performance Measurement – BPM Methodologies – Performance Dashboards and Scorecards.

Unit IV

Data Mining for Business Intelligence – Concepts and Definition – Applications – Process – Methods – Artificial Neural Networks – Data Mining Software Tools. Text and Web Mining – Concepts – Natural Language Processing – Text Mining Applications – Process – Tools – Web Mining overview – Web content Mining and Web structure – Web usage Mining

Unit V

Business Intelligence Implementation: Integration and Emerging Trends – Implementation BI – BI and Integration – Connecting BI systems to Databases and other enterprise systems – On-Demand BI – Issues of Legality, Privacy and Ethics – Emerging Topics in BI.

Text Book:

S.No	Author Name	Title of the Book	Publishers	Year and Edition
1.	Efraim Turban Ramesh Sharda Dursun Delen David King	Business Intelligence A Managerial Approach	Pearson	Second Edition, 2012

Books for Reference:

S.No	Author Name	Title of the Book	Publishers	Year and Edition
1.	Galit Shmueli Nitin R. Patel Peter C. Bruce	Data Mining for Business Intelligence	Wiley – India Pvt. Ltd.,	Reprint 2011

SEMESTER V –PART III
CORE XI - INCOME TAX
SUBJECT CODE – DA15C11

Credits: 4

Hours: 71

Objectives:

- To enhance the students knowledge about the income tax laws and Procedures.
- To enhance the revised provisions of The Income Tax Act of 1961.
- To compute the gross total income, rebate and the total tax liability of an individual assessee.

UNIT I (DL hrs = 14)

The Income Tax Act - Definition of Income - Assessment Year - Previous Year – Assessee - Assessee in default - Scope of income - Charge of tax - Residential status - Incomes which do not form part total income- Heads of Income.

UNIT II (DL hrs = 14)

Salaries –Income from House property - Computation of Salaries and Income from House Properties - Rates of taxes for Individual - Rebate of tax for savings.

UNIT III (DL hrs = 15)

Profits and Gains of Business or Profession - Meaning of Business or Profession- Computation of Profits and Gains of Business or Profession of an Individual – (Expenses expressly allowed - Expenses expressly Disallowed). *

UNIT IV(DL hrs = 14)

Capital Gains and Income from Other Sources.

UNIT V (DL hrs = 14)

Deductions to be made in computing Total Income –Set off and Carry Forward - Set off losses -Computation of Gross Total Income -Assessment of Individuals. Introduction to e-Filing

Note: 40% theory and 60% for problems.

***Self Study**

Text Book:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Gaur V.P. and Narang D.B.	Income Tax and Practice	Kalyani Publishers	Current Edition

Books for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Dinkar Pagare	Income Tax and Practice	Sultan chand & Sons	Current Edition
2.	Mehrothra	Income Tax and Practice	Sultan chand & Sons	Current Edition

SEMESTER V -PART III**CORE X11- RELATIONAL DATABASE MANAGEMENT SYSTEM****SUBJECT CODE – DA15C12****Objectives:**

- The paper focuses primarily on the fundamental concepts of the database.
- The query language provides the base for Relational database management system.

Credits: 4

Hours: 71

UNIT I(DL hrs = 15)

Database System architecture – Database system-Definition, purpose, View of Data: operational data, data abstraction and data independence, Instance and Schema - Architecture for a database system – Data Models (Relational Approach, Hierarchical approach, Network approach.)

UNIT II(DL hrs =14)

Entity Relationship model-Basic Concepts: Keys, Entities and Attributes- Relationships: one to one, many to many, one to many. – DDL.

UNIT III(DL hrs = 14)

Data Manipulation Languages-Insert, Select, Delete, Update tables, View-defining and manipulating view; Access control in SQL -Transaction control-Embedded SQL-Cursors.

UNIT IV(DL hrs = 14)

Relational Database concepts- Relational database management system-Definition of Relation. Relational Algebra: Relational operators-Set operations on Relations. Queries-Join Operators.

UNIT V(DL hrs = 14)

Normalization process - Introduction- Functional dependency-1 NF-2 NF-3 NF-Boyce-code NF. Normalizing the model- (Table Instance charts)*

***Self Study**

Text Book:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Madhulika Jain&	Introduction to	BPB Publications,	Reprint 2008,

	Vineeta Pillai	Database Management	New Delhi.	fourth Edition
--	----------------	---------------------	------------	----------------

Books for Reference:

S.No	Author Name	Title of the Book	Publisher	Year and Edition
1.	Abraham Silberschatz Henry F.Korth S.Sudharshan	Database system concepts	Tata McGraw Hill New Delhi.	5 th Edition,2009
2.	Ramon A.Mata Pauline K.Cushman	Fundamentals of Relational databases	Tata McGraw Hill New Delhi.	Reprint 2009. 6 th Edition.

SEMESTER V- PART- III
ELECTIVE I- e - COMMERCE
SUBJECT CODE: DA15E01

Credits: 5

Hours: 86

Objectives:

- To understand the technological changes and various business strategies
- To impart knowledge about E-Commerce working models
- To provide clear idea about, how business are performed in the Internet

UNIT I(DL 17 Hrs)

Introduction to E – Commerce – Defining E – Commerce – Features, Importance, Objectives of E-Commerce - E- Commerce industry framework – Types of E- Commerce – Levels – Reasons for growth of E-Commerce – applications of E-Commerce – Obstacles in adopting E-Commerce application – E-Commerce and E-Business – Future of E-Commerce – Introduction to cloud and grid computing – Android applications

UNIT II(DL 17 Hrs)

Defining E-Business Idea – Entrepreneurial process – factors affecting e-Business success – Advantages of E-Business- Electronic payment methods – Overview of EPS – modes of E-payment – (electronic Debit and Credit card payment)*-E-cash-E-Cheque- Smart cards-|E-money/cash

UNIT III(DL 18 Hrs)

E-Banking Introduction concepts and meaning-Need for computerization – Electronic delivery channels – (Automated teller Machine)* - Electronic Fund Transfer (EFT) – Uses – Computerization in clearing houses – Tele banking – Electronic money Transfer (EMT) – Computer Bank Branches – E-Cheque-MICR cheques-e-Banking in India

UNIT IV(DL 17 Hrs)

E-Commerce security – Cyber crimes – Areas of Internet security – Types of Security – Encryption – meaning – Encryption process – Cryptography – Types – Digital and Electronic signature – E-locking techniques – Security precautions in E -Commerce

UNIT V(DL 17 Hrs)

E-Business communication – Importance of E-Technology – E- Business conferencing – Audio conferencing – Tele conferencing – video Conferencing – Advantages and disadvantages of types of conferencing- Need for Electronic mail – Meaning – Nature – Application and uses of E-Mail – E-Business advertising – Marketing an E-Business

Self Study*Text Book:**

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Rayudu C.S	Ecommerce – E-Business	Himalaya Publishing House	2008 5 th edition

Books for Reference:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Joseph PT	E commerce, an Indian Perspective	Margham Publications	16 th printin, 3 rd edition, August 2010
2	Murthy CSV	E-Commerce – Concepts, Models, Strategies	Himalaya Publishing House	2007, third edition

SEMESTER V- PART- III
ELECTIVE II- OPERATION RESEARCH
SUBJECT CODE: DA15E02

Credits: 5

Hours: 86

Objectives

- To understand the mathematical models for analysis

UNIT I(DL 18 Hrs)

Introduction to Operations Research: Basics definition, Scope, Objectives, Phases, modles and limitations of Operations |Research. Linear programming problem – Formulation of LPP, Graphical solution of LPP. Simple Method, Artificial Variables, big-M method, two-phase method, degeneracy and unbound solutions.

UNIT II(DL 17 Hrs)

Assignment model. Formulation. Hungarian method for optimal solution. Solving unbalanced problem. Traveling salesman problem and assignment problem.

Sequencing models. Solution of sequencing problem – Processing in jobs through 2 machines – Processing n jobs through 3 machines – Processing 2 jobs through m machines – Processing n jobs through m machines.

UNIT III(DL 17 Hrs)

Dynamic programming. Characteristics of dynamic programming. Dynamic programming approach for priority management employment smoothening, capital budgeting, stage coach/Shortest path, cargo loading and reliability problems.

Games Theory. Competitive games, rectangular game, saddle point, minimax (maximin) method of optimal strategies, value of the game. Solution of games with saddle points, dominance principle. Rectangular games without saddle point – mixed strategy for 2 X 2 games.

UNIT IV(DL 18 Hrs)

Replacement Models. Replacement of items that deteriorate whose maintenance costs increase with time without change in the money value. Replacement of items that fail suddenly: individual replacement policy, group replacement policy.

UNIT V(DL 17 Hrs)

Inventory models. Inventory costs. Models with deterministic demand – model (a) demand rate uniform and production rate infinite, model (b) demand rate non-uniform and production rate infinite, model (c) demand rate uniform and production rate finite

Text Book:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	P.Sanakara Iyer	Operations Research	Tata McGraw-Hill	Revised Edition
2	A.M. Natarajan,P. Balasubramani, A.Tamilarasi	Operations Research	Pearson Education	Revised Edition

Books for Reference:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	J K Sharma	Operations Research theory & Application	Macmillan India Ltd	Revised Edition
2	P.K. Gupta and D.S Hira	Operations Research	S.Chand & co	Revised Edition

SEMESTER V – PART III
COMPUTER APPLICATION PRACTICAL III - SQL
SUBJECT CODE-DA15CP3

Hours: 45

1) Data Definition Language

Table: Student

Regno number (5) primary key

Studname varchar2 (15)

Gender char (6)

Deptname char (15)

Address char (25)

Percentage number (4, 2)

Queries:

- a) To create a table
- b) To describe a table
- c) To alter a table
- d) To drop a table
- e) To truncate a table

2) Data Manipulation Language

Table: Student

Regno number (5) primary key

Studname varchar2 (15)

Gender char (6)

Deptname char (15)

Address char (25)

Percentage number (4, 2)

Queries:

- a. To insert values
- b. To retrieve records
- c. To update records
- d. To delete records

3) Create an Employee table with following field.

Eno number (5) primary key

Ename varchar2 (20) not null

Deptno number (2) not null

Desig char (10) not null

Sal number (9, 2) not null

Comm. Number (7, 2) null

Queries:

- a) Insert values and display the records
- b) Display sum, maximum amount of basic pay
- c) List the name of the clerks working in the department 20
- d) Display name that begins with 'G'
- e) List the names having 'I' as the second character
- f) List the names of employees whose designation are 'Analyst' and 'Salesman'
- g) List the different designation available in the Employee table without duplication
(distinct)

4) Create a table "Company" with the following fields and insert the values for 10 employees.

Compid number (6) primary key

Compname varchar2 (15) not null

Proprietor varchar2 (15) not null

Address varchar2 (25) not null

Supname varchar2 (15)

Noofempl number (4)

GPPercent number (6, 2)

Queries:

a) Display all the records of the company which are in the ascending order of GP percent.

b) Display the name of the company whose supplier name is "Telco".

c) Display the details of the company whose GP percent is greater than 20 and

Order by GP Percent.

d) Display the detail of the company having the employee ranging from 300 to 1000.

e) Display the name of the company whose supplier is same as the Tata's.

5) Create a student table with the following fields

Stuno number (5) primary key

Stunm Varchar2 (20)

Age number (2)

Mark1 number (3)

Mark2 number (3)

Mark3 number (3)

Queries:

a) Insert values and display the records

b) List the names and age of the student whose age is more than 12

c) Display total and average of marks

d) Display the names of the maximum total & minimum total student

e) List the names of the student that ends with 'A'

f) List the names of student whose names have exactly 5 characters

6) Create a table "Product" with the following fields and insert the values:

Prodno number (6)

Prodname varchar2 (15)

Unitofmeasure varchar2 (15)

Qty number (6, 2)

Totamt number (8, 2)

Queries:

- a) Using update statements calculate the total amount and then select the record.
- b) Select the records whose unit of measure is "Kg".
- c) Select the records whose quantity is greater than 10 and less than or equal to 20.
- d) Calculate the entire total amount by using sum operation.
- e) Calculate the number of records whose unit price is greater than 50 with count operation.

7) Create the table PAYROLL with the following fields and insert the values:

Emplno number (8)
Emplname varchar2 (8)
Dept varchar2 (10)
Baspay number (8, 2)
HRA number (6, 2)
DA number (6, 2)
Pf number (6, 2)
Netpay number (8, 2)

Queries:

- a) Update the records to calculate the net pay.
- b) Arrange the records of the employees in ascending order of their net pay.
- c) Display the details of the employees whose department is "Sales".
- d) Select the details of employees whose HRA \geq 1000 and DA \leq 900.
- e) Select the records in descending order.

8) Create a Table Publisher and Book with the following fields:

Table: publisher

Pubcode Varchar2 (5)
Pubname Varchar2 (10)
Pubcity Varchar2 (12)
PubState Varchar2 (10)
Bookcode Varchar2 (5)

Table: Book

Booktitle Varchar2 (15)
Bookcode Varchar2 (5)
Bookprice Varchar2 (5)

Queries:

- a) Insert the records into the table publisher and book.
- b) Describe the structure of the tables.
- c) Show the details of the book with the title "DBMS".
- d) Show the details of the book with price>300.
- e) Show the details of the book with publisher name "Kalyani".
- f) Select the book code, book title; publisher city is "Delhi".
- g) Select the book code, book title and sort by book price.
- h) Count the number of books of publisher starts with "Sultan chand".
- i) Find the name of the publisher starting with "S".

9) Create a table Deposit and loan with the following fields:

Table: Deposit

Accno number (3)
Account varchar2 (6)
Branch Name varchar2 (15)
Custname varchar2 (20)
Balanceamt varchar2 (10)

Table: Loan

Loanno number (5)
Branchnm varchar2 (15)
Custnm varchar2 (30)
Loanamt number (10)

Queries:

- a) Insert the records into the table.
- b) Describe the structure of the table.
- c) Display the records of Deposit and Loan.
- d) Find the number of loans with amount between 10000 and 50000.

- e) List in the alphabetical order the names of all customers who have a loan at the Coimbatore branch.
- f) Find the average account balance at the Coimbatore branch.
- g) Update deposits to add interest at 5% to the balance.
- h) Arrange the records in descending order of the loan amount.
- i) Find the total amount of deposit in 'Erode' branch.

10) Create a Route chart with the following fields

Routeno number(2) unique

Origin varchar2(15)

Destn varchar2(15)

Fare number (5)

Distance number (5)

Queries:

- a) Insert values and display the records
- b) List the details whose origin are Chennai, Kerala, Coimbatore(use in operator)
- c) Display the records whose distance >20
- d) List the details not belonging to the origin Mumbai, Calcutta, Goa (use not in operator)
- e) List Routeno, Origin where fare between 1000 and 2000

11) Create the course and batch table with following fields

Table: Course

Courseno number (5) primary key

Coursename varchar2(20)

Syllabus varchar2(25)

Table: Batch

Batchno number (5) primary key

Courseno number (5) foreign key

Startingdt date

Duration varchar2 (15)

Income number (5)

Queries:

- a) Insert values and display the records
- b) Display the records from batch table whose Courseno is '9'
- c) Display the Courseno, Coursename for the batch starting from '25 June 2000'
- d) List Batchno for the batch starting before '30th June 2001' and after 'December 2001'
- e) List the details of the batch who have joined before the end of 'September 2001'

12) Create Employee and Department table with following fields

Table: Employee

Eno number (5) primary key
 Ename varchar2 (20) not null
 Deptno number (2) not null
 Desig char (10) not null
 Sal number (9, 2) not null
 Comm. Number (7, 2) null

Table: Department

Deptno varchar2 (15) primary key
 Deptnm varchar2 (15)

Queries:

- a) Display the details of department table
- b) List the name, salary and PF amount of all the employees(PF is calculated as 10% of salary)
- c) List the department numbers and number of employees in each department(Group by)
- d) List the average salary from each job excluding managers
- e) List the jobs and the number of employees in each job. The result should be in descending order of the number of employees
- f) List the employees who are eligible for commission
- g) List the names of the employees who are not 'managers'

13) Create Employee and Department table with following fields

Table: Employee

Eno number (5) primary key
 Ename varchar2 (20) not null
 Deptno number (2) not null

Desig char (10) not null
Sal number (9, 2) not null
Comm. Number (7, 2) null

Table: Department

Deptno varchar2 (15) primary key
Deptnm varchar2 (15)

Queries:

- a) List the department number and the total salary payable in each department
- b) List the total salary, maximum and minimum salary and the average salary of employees designation wise
- c) Display the empno, name whose shift is morning
- d) List average salary for all departments employing more than five people (having)
- e) List jobs of all the employees where maximum salary is greater than or equal to 5000 (having)
- f) Raise employee salary by 0.15 for the employees working as 'programmers'
- g) Delete the records where commission is 'null'
- h) List the average salary and number of employees working in the department '20'

14) Create Library with the following fields

Bookno	number (5)
Booknm	varchar2 (10)
Authornm	varchar2 (10)
Price	number (3, 8)
Status	varchar2 (5)
Category	varchar2 (5)

Queries:

- a) Display the author name, price of tax book
- b) Display the price of book banking
- c) Display the count of category commerce
- d) List the book details in ascending order of price (order by)
- e) List the book details in descending order of book no and price (order by)

15. Create Hospital details with the following fields

Pid number (5) primary key

Pnm varchar2 (20) not null

Wardno number (5)

Doa date

Dod date

Disease varchar2 (25)

Fees number (9,2)

Queries:

- a) Insert values into the table
- b) Append patient name and disease
- c) Capitalise the first character of patient name to convert into upper and lower case
- d) Display the records having phonetic representation like 'Jai'
- e) Select four characters from the third position of patient name
- f) Display the current date
- g) Display date of discharge and add 7 months to it and deduct 7 months from it
- h) To calculate number of days patient admitted
- i) Display corresponding day of discharge of patient

SEMESTER V

ADVANCED LEARNERS PAPER- SELF STUDY

BUSINESS COMMUNICATION

SUBJECT CODE – DA15AC1

Objectives:

- To enhance the student's knowledge with regard to effective communication
- To improve letter writing skills

Credits: 5

UNIT I

Introduction to Communication – Objectives – Importance – Elements of Communication process – Internal and External Communication – Media of Communication –Electronic media- Barriers to Communication – Principles of Communication- Formal and Informal

Communication – Upward, Downward, Lateral and Diagonal Communication – Communication network.

UNIT II

Essentials of Business Letters – Enquiries and replies – Orders and execution – Credit and Status letters

UNIT III

Complaints and Adjustments- Collection letters- Circular and Sales letters – Application Letters

UNIT IV

Report Writing – Importance of report – Types of business reports – Characteristics of good report – Notice, Agenda and Minutes, Resolutions of company meetings.

UNIT V

Public Speaking – Conference and Committee – Essentials of effective conference – Listening – Meaning, significance and obstacles.

Text book

Book Name	Author Name	Publisher	Year and edition
Essentials of Business Communication	Rajendra Pal & J.S.Korlahalli	Sultan Chand & Sons, New Delhi	Reprint 2006, 9 th edition

Books for Reference:

Book Name	Author Name	Publisher	Year and edition
Business Communication	V.K.Jain Omprakash Biyani	Sultan Chand & Company Ltd, New Delhi	Reprint 2009, 1 st edition
Modern Commercial	R.S.N.Pillai & Bagavathi	Sultan Chand & Company Ltd, New	Reprint 2006, 1 st edition

Correspondence		Delhi	
Business Communication practices- Modern trends	Uma Narula	Atlantic Publishers and distributors	2006, First edition

SEMESTER V-PART III
ADVANCED LEARNERS PAPER- SELF STUDY
BUSINESS MANAGEMNT & ETHICS
SUBJECT CODE – DA15AC2

Objective:

- To have basic knowledge in the concepts involved in management.
- To acquire expert knowledge in the functions of management

Credits: 5

UNIT-I

Management– Definition-Nature and Scope-Functions-Contributions by Henry Fayol, FW Taylor, Peter F Drucker, McGregor-Management as a Science, Art, Profession- Management and Administration - Principles of Management – Planning-Meaning – Nature – Importance- purpose of planning-planning process - Methods and Types of Plans- Advantages and Limitations

UNIT – II

Decision Making- Steps in Decision Making. Organization – Meaning- Nature and Importance-Process of Organization – Structure- Departmentation – Delegation – Centralization – Decentralization – Authority- Responsibility Relationship-Line, Line & Staff – Functional- Span of Control - Charts and Manuals - MBO & MBE – Group Dynamics and Organizational Climate

UNIT – III

Leadership – **Meaning – Importance-Functions of Leadership-Leadership Styles-Qualities of A Good Leader – Motivation – Meaning-Need for Motivation-Theories of Motivation-Maslow, X, Y, Z Theory, Hygiene Theory.**

UNIT-IV

Coordination – Meaning – Definition – Principles-Advantages and Disadvantages – Control – Meaning – Importance- Process & Techniques of Control.

UNIT – V

Business Ethics: Ethics – Meaning, Importance, Nature and Relevance – Values and Attitudes of Professional Accountants - Seven Principles of Public – Ethics in Business.

Text book

Book Name	Author Name	Publisher	Year and edition
Dinkar Pagre	Principles of Management (Unit I – III)	Sultan Chand & Sons, New Delhi	2009, 5th edition
Rajendra Pal & Korlahalli J.S	Essentials of Business Communication (Unit IV, V)	Sultan Chand & Sons, New Delhi	2008, 11th edition

Books for Reference:

Book Name	Author Name	Publisher	Year and edition
Bhushan Y.K	Business Organization and Management	Sultan Chand & Sons	2009, 5th edition
Jain V.K Omprakash Biyani	Business Communication	Sultan Chand & Company Ltd, New Delhi	2009, 1 st edition

SEMESTER VI- PART III
CORE XIII - COMPANY LAW
SUBJECT CODE: DA15C13

Objectives:

- To know about company law procedures and proceedings

- To understand various kinds of companies.

Credits: 5

Hours: 86

UNIT I (DL 17 Hrs)

Definition of a company – Characteristics - Kinds of companies - Private and Public companies-Privileges of a private company - Deemed public company – Promoter - Functions of promoters -Position of promoters - Liabilities of promoters - Remuneration of promoters – Incorporation-Certificate of incorporation - Capital subscription - Preliminary contract - Commencement of business duties of secretary - Before and after incorporation.

UNIT II (DL 17 Hrs)

Memorandum of Association - Purpose and contents of memorandum - Doctrine of Ultra Vires and its Exception - Alteration of Memorandum - Company law board powers - Articles of Association-Definition-forms and contents - Effect of Memorandum and Articles - Alteration of articles -distinguish between Memorandum and Articles - Constructive notice of memorandum And articles and its exception -Table A

UNIT III (DL 17 Hrs)

Prospectus: Definition-Dating of Prospectus-Registration of Prospectus-Content of Prospectus-Shelf Prospectus-Deemed Prospectus-Misstatement in Prospectus and its consequences-Statement in lieu of Prospectus-Share Capital: Meaning-Kinds of Share Capital – Alteration-Reduction-Further issue of Share Capital. (Qualifications-Liabilities. Directors – Appointment)* -Rights, Duties, Powers & Liabilities

UNIT IV(DL 18 Hrs)

Meeting of Company- General Meeting of Shareholders- Statutory Meeting- statutory report - Annual General Meeting - extraordinary General meeting – Class Meeting - Requisites of a valid meeting – Proper authority-Notice of the meeting – Ordinary and special meeting- Quorum for the meeting - Proxies – Voting and Poll. Resolutions: Ordinary Resolution-Special resolution-Resolution requiring special notice-resolution by postal ballot- Minutes - Kinds of Minutes.

UNIT V(DL 17 Hrs)

Winding Up: Meaning of Winding up-Modes of Winding Up-Winding up by the court-Grounds for Compulsory Winding Up- Winding up of Private Company-Petition-Commencement of Winding Up-Consequences of Winding up Order. Official Liquidator-Liquidator- Provisional Liquidator-Liquidator’s rights and Duties.

***Self Study #(Updation as per Recent amendments)**

Text Book:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Kapoor N.D	Company Law	Sultan Chand & Sons, New Delhi	2012, Sixth reprint

Books for Reference:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Bahi J.C	Secretarial Practice in India practices	N.M.Tripathi(p) Ltd	11 th edition 2007
2	Danl L.M, Tripathi R.N, Shrihatti M.G	Secretarial Practice	Orient Long man	Reprint 2008
3	Jain S.P & Triloknath Chhabra	Secretarial Practice	Dhanpat Rai & Sons.	2 nd edition 2006
4	Kapoor N.D	Elements Of Company Law	Sultan Chand & Company Ltd, New Delhi	Reprint 2014

**SEMESTER VI – PART III
CORE XIV –R PROGRAMMING
SUBJECT CODE –DA15C14**

Objectives:

- To introduce R programming concepts.
- To develop programming skills in R programming concepts.

Credits: 4

Hours: 71

UNIT I (DL 14 Hrs)

An overview of R: Introduction to R expressions, variables, and functions-
 Vectors: Grouping values into vectors, then doing arithmetic and graphs with them-
 Matrices: Creating and graphing two-dimensional data sets- Calculating and plotting some basic
 statistics: mean, median, and standard deviation- Factors: Creating and plotting categorized data.

UNIT II

(DL 15 Hrs)

Data Frames: Organizing values into data frames, loading frames from files and merging
 them-Working With Real-World Data: Testing for correlation between data sets, linear models
 and installing additional packages.

UNIT III

(DL 14 Hrs)

Data manipulations: Overview of how to connect database from R-How to run SQL
 queries from R to fetch data- Data manipulation using SQL to prepare data for analysis (like
 creating time series vectors for millions of records, or storing data in a matrix format and using it
 as variable for “xreg” parameter.

UNIT IV

(DL 14 Hrs)

Reading and writing of csv file- Importing and exporting of data set-Merging of file
 having same or different number of column-Reading a file involving date and converting this
 date into different format-clustering-Use of SQL query-Plotting two series on one graph-one
 with a left y axis and another with a right y axis-histogram-Multivariate Statistical Techniques
 like Discriminant Analysis, Factor Analysis.

UNIT V

(DL 14 Hrs)

Regression and time series: Doing OLS- Standard tests-Least squares dummy variable’
 (LSDV) or ‘fixed effects’ model- Linear and Nonlinear regression-ARMA estimation,
 diagnostics, forecasting-Time-series plot-Multivariate Time Series Analysis.

*** Self Study**

Text Book:

Book Name	Author	Publisher	Year & Edition
Beginning R: The Statistical Programming Language(Wrox)	Dr. Mark Gardener	John Wiley & Sons, Inc.,	2012

Books for Reference:

Book Name	Author	Publisher	Year & Edition
Statistical Analysis with R.	M. John	Tata McGraw Hill Publishing Co. Ltd	October 2010
Learning R	Richard Cotton	O'Reilly Media	September 2013

SEMESTER VI-PART III
ELECTIVE II – TOTAL QUALITY MANAGMENT
SUBJECT CODE – DA15E03

Objectives:

- To have basic knowledge total quality management
- To enhance knowledge in ISO standards

Credits: 5

Hours: 86

Unit-I(DL 17 Hrs)

Introduction - Need for quality - Evolution of quality - Definition of quality - Dimensions of manufacturing and service quality - Basic concepts of TQM - Definition of TQM – TQM Framework - Contributions of Deming, Juran and Crosby – Barriers to TQM

Unit-II(DL 17 Hrs)

Leadership – Strategic quality planning, Quality statements - Customer focus – Customer orientation, Customer satisfaction, Customer complaints, Customer retention - Employee involvement– Motivation, Empowerment, Team and Teamwork, Recognition and Reward, Performance appraisal - Continuous process improvement – PDSA cycle, 5s, Kaizen - Supplier partnership – Partnering, Supplier selection, Supplier Rating

Unit III(DL 17 Hrs)

The seven traditional tools of quality – New management tools – Six-sigma: Concepts, methodology, applications to manufacturing, service sector including IT – Bench marking– Reason to bench mark, Bench marking process – FMEA – Stages, Types.

Unit IV(DL 17 Hrs)

Quality circles – Quality Function Deployment (QFD) – Taguchi quality loss function – TPM Concepts, improvement needs – Cost of Quality – Performance measures.

Unit V(DL 18 Hrs)

Need for ISO 9000- ISO 9000-2000 Quality System – Elements, Documentation, Quality auditing- QS 9000 – ISO 14000 – Concepts, Requirements and Benefits – Case studies of TQM implementation in manufacturing and service sectors including IT.

Text Book:

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Total Quality Management	Dale H.Besterfield,	Pearson	Fourth Edition, 2016

Books for References:

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	The Management and Control of Quality,	James R. Evans and William M. Lindsay	Pearson Education Asia,	6th Edition, South-Western (Thomson Learning), 2005.
2.	TQM – Text with Cases	Oakland, J.S	Butterworth – Heinemann Ltd	3Oxford, 3rd Edition, 2003.
3.	Total Quality Management	Suganthi,L and Anand Samuel	Prentice Hall (India) Pvt. Ltd	Reprint 2004

SEMESTER III –PART III
ELECTIVE II – PROJECT MANAGEMNT
SUBJECT CODE: DA15E04

Objectives:

- To equip students with knowledge of project management

Credits: 5

Hours: 86

UNIT I (DL 17 Hrs)

Basics of Project Management: Introduction, Need for project Management, Project management knowledge areas and processes, The project life cycle, The project manager (PM), Phases of project management Life Cycle, Project Management process, Impact of delays in project completions, Essentials of project management philosophy, project management principles

UNIT II (DL 17 Hrs)

Project Identification and Selection: Introduction, Project Identification process, Project Initiation, Pre-Feasibility study, Feasibility studies, Project Breakeven point. Project Planning: Introduction, Project Planning, Need of project planning, Project Life Cycle, Roles, Responsibility and team work, Project planning process, Work Breakdown structure (WBS)

UNIT III (DL 17 Hrs)

Organisational Structure and organizational issues: Introduction, Concept of Organizational Structure, Roles and Responsibilities of project leader, Relationship between project manager and Line manager, Leadership styles for project managers, conflict resolution, Team management and Diversity management, Change management

UNIT IV

(DL 17 Hrs)

PERT and CPM: Introduction, Development of project network, Time Estimation, Determination of the critical path, PERT model, Measures of variability, CPM model, Network cost system. Resources considerations in projects: Introduction, Resource Allocation, Scheduling, Project cost Estimates and budget, Cost forecast.

UNIT V (DL 18 Hrs)

Project Risk Management: Introduction, Risk, Risk Management, Role of Risk management in overall project management, steps in Risk Management, Risk identification, Risk Analysis, Reducing Risks. Project Quality management and Value Engineering: Introduction, Quality, Quality concepts, Value Engineering

Text Book :

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Project management : Engineering, Technology and implementation	Shtub bard and Globerson	PHI	revised edition
2	Project Management	Lock Gower	PHI	revised edition

	Handbook			
--	----------	--	--	--

Books for Reference :

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Project manage business and tec principles and pra	John M Nicholas	Prentice Hall of India	revised edition

SEMESTER VI – PART III
COMPUTER APPLICATION PRACTICAL II R PROGRAMMING
SUBJECT CODE – DA15CP3

Credits: 3

Hours: 57

1. Creating Vectors, Matrices, Factors and plotting graphs
2. Import Data, copy data from Excel to R
3. Working with variables and Data in R
4. Logic statements, Cbind/Rbind command in R
5. Working with variables and data in R
6. Setting up Directories and importing packages
7. Bar charts and piecharts in R
8. Histograms in R
9. Summary statistics in R: Mean, Standard Deviation, Frequencies, t-Test
10. Mann-Whitney U-test, Ranking Test, ANOVA, Chi-Square

SEMESTER VI-PART III
ADVANCED LEARNERS PAPER- SELF STUDY
HUMAN RESOURCE MANAGEMENT
SUBJECT CODE – DA15AC3

Objectives:

- To enable the students to acquire knowledge on Human Resource Management in General.

Credits: 5**UNIT I (DL 6 Hrs)**

Nature and Scope of HRM : Concept-Characteristics-Objectives-Importance – Functions – Scope – History – Evolution. Organising the Human Resource Function: Role of Human Resource Manager.

UNIT II (DL 6 Hrs)

HR Planning : Concept- Objective - Need and Importance – Process. Job Analysis and Job Design: Concept-Objectives-uses-Process.

UNIT III (DL 6 Hrs)

Recruitment and Selection: Meaning-Process-Policy-Sources. Employee Training; Concept - Need – Importance – Types. – Identifying Training Needs – Objectives.

UNIT IV(DL 6 Hrs)

HRD: Concept - Difference – Need and significance – Qualities.Performance Appraisal: Concept- Objectives – Uses –Process – Problems –Essentials – Methods – 360 Degree Appraisal Technique.

UNIT V(DL 6 Hrs)

Job Evaluation: Concept - Objectives – Process – Advantages – Limitations – Essentials. Morale: Meaning-Importance. Job Satisfaction: Concept-Measurement.

*** Self Study****Text Book:**

Sl.No.	Title of the Book	Author Name	Publisher	Year and Edition
1.	Human Resource Management	C.B.Gupta	Sultan Chand & Sons, New Delhi	2009, Twelfth Edition

Books for Reference:

Sl.No.	Title of the Book	Author Name	Publisher	Year and Edition
1.	Human Resource & Personal Management	Aswathappa	Tata McGraw Hill	Fourth Edition
2.	HRM and Human Relations	V.P.Michael	Publishing house	First Edition

SEMESTER VI-PART III
ADVANCED LEARNER COURSE – SELF STUDY PAPER
KNOWLEDGE MANAGEMNET SYSTEM
SUBJECT CODE: DA15AC4

Credits : 5

UNIT I

Knowledge Management: KM Myths – KM Life Cycle – Understanding Knowledge – Knowledge, intelligence – Experience – Common Sense – Cognition and KM – Types of Knowledge – Expert Knowledge – Human Thinking and Learning.

UNIT II

Knowledge Management System Life Cycle :Challenges in Building KM Systems – Conventional Vrs KM System Life Cycle (KMSLS) – Knowledge Creation and Knowledge Architecture – Nonaka’s Model of Knowledge Creation and Transformation. Knowledge Architecture.

UNIT III

Capturing Knowledge :Evaluating the Expert – Developing a Relationship with Experts – Fuzzy Reasoning and the Quality of Knowledge – Knowledge Capturing Techniques, Brain Storming – Protocol Analysis – Consensus Decision Making – Repertory Grid- Concept Mapping – Black boarding.

UNIT IV

Knowledge Codification :Modes of Knowledge Conversion – Codification Tools and Procedures – Knowledge Developer’s Skill Sets – System Testing and Deployment – Knowledge Testing – Approaches to Logical Testing, User Acceptance Testing – KM System Deployment Issues – User Training – Post implementation.

UNIT V

Knowledge Transfer And Sharing :Transfer Methods – Role of the Internet – Knowledge Transferine-world–KMSystemTools–NeuralNetwork–AssociationRules– Classification Trees – Data Mining and Business Intelligence – Decision Making Architecture – Data Management – Knowledge Management Protocols – Managing KnowledgeWorkers.

Text Books:

S. No	Author	Title of Book	Publisher	Year of Publication
1	Elias.M. Award & Hassan M. Ghaziri	Knowledge Management	Pearson Education	2003 Edition

Books for Reference:

Book Name	Author Name	Publisher	Year and edition
Knowledge Engineering and Management	Guus Schreiber, Hans Akkermans, Anjo Anjewierden, Robert deHoog, Nigel Shadbolt, Walter Van de Velde and Bob Wielinga	Universities Press	2001 Edition
Handbooks on	C.W. Holsapple	International	Vol 1 and 2, 2003

Knowledge Management		Handbooks on Information Systems	edition
----------------------	--	----------------------------------	---------

SKILL BASED SUBJECT- ONLINE ANALYTICAL PROCESSING

Sem	Sub code	Title of paper	Hrs/week	Duration	CI A	ES E	Total	Credits
III& IV	SB15OA01	Hadoop	2	3	25	75	100	4
III& IV	SB15OAP1	Practical I – Hadoop	1	3	40	60	100	2
V& VI	SB15OA02	SAS	2	3	25	75	100	4
V& VI	SB15OAP2	Practical II - SAS	1	3	40	60	100	2

ONLINE ANALYTICAL PROCESSING SEMESTER III&IV- PAPER-I - HADOOP SUBJECT CODE- SB15OA01

Objective:

- ❖ To enhance knowledge in Hadoop, PIG and HIVE

Credits: 4

Hours: 56

Unit I (DL 11 Hrs)

Hadoop: Introduction – Architecture – HDFS characteristics – HDFS architecture – MAPREDUCE characteristics – limitations of hadoop – Hadoop Yarn – infrastructure – comparison.

Unit II (DL 11 Hrs)

Hadoop Ecosystem: Components.

Unit III (DL 11 Hrs)

NoSQL Databases – HBASE: Ideology – Types – Advantages – SQL vs. NoSQL – Architecture – Components.

Unit IV(DL 12 Hrs)

PIG: Features – modes – modes – PIG Latin – Dataset – Commands and Functions – Operators – Evaluation Functions – Batch Mode – Embedded Mode – PIG vs. SQL.

Unit V(DL 11 Hrs)

HIVE: Features – Architecture – Data Units – HIVE Quesry Languages – Database Operations – Tables – Joins – HIVE vs. PIG

* **Self Study**

Text Books:

Sl.No.	Author Name	Title of the book	Publisher	Year and Edition
1	Tom White	Hadoop: The Definitive Guide	O'Reilley	4 th Edition, 2015

Books for Reference:

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Randy Bartlett	A Practitioners Guide to Business Analytics	Mc-Graw Hill	Revised Edition

ONLINE ANALYTICAL PROCESSING**SEMESTER III & IV – PRACTICAL - I – HADOOP, PIG & HIVE****SUBJECT CODE: SB15OAP1**

Credits: 2

Hours: 28

1. Simple Map Reduce Program
2. Health care Analysis
3. Production management system
4. Order management system
5. Marketing and advertising database
6. CRM systems
7. Social media input and process
8. Data processing using cloud

ONLINE ANALYTICAL PROCESSING
SEMESTER V&VI - PAPER-II - SAS
SUBJECT CODE- SB15OA02

Objective:

- To enable students to program SAS

Credits: 4

Hours: 56

UNIT I (DL 11 Hrs)

Accessing Data : Use FORMATTED, LIST and COLUMN input to read raw data files - Use INFILE statement options to control processing when reading raw data files - Use various components of an INPUT statement to process raw data files including column and line pointer controls, and trailing @ controls - Combine SAS data sets using the DATA step.

UNIT II (DL 11 Hrs)

Creating Data Structures: Create temporary and permanent SAS data sets - Create and manipulate SAS date values - Use DATA Step statements to export data to standard and comma delimited raw data files - Control which observations and variables in a SAS data set are processed and output.

UNIT III(DL 11 Hrs)

Managing Data: Investigate SAS data libraries using base SAS utility procedures - Sort observations in a SAS data set - Conditionally execute SAS statements - Use assignment statements in the DATA step - Modify variable attributes using options and statements in the DATA step - Accumulate sub-totals and totals using DATA step statements.

UNIT IV(DL 12 Hrs)

Use SAS functions to manipulate character data, numeric data, and SAS date values - Use SAS functions to convert character data to numeric and vice versa - Process data using DO LOOPS - Process data using SAS arrays. **Generating Reports:** Generate list reports using the PRINT and REPORT procedures - Generate summary reports and frequency tables using base SAS procedures.

UNIT V(DL 11 Hrs)

Enhance reports through the use of labels, SAS formats, user-defined formats, titles, footnotes and SAS System reporting options - Generate HTML reports using ODS statements.

Handling Errors: Identify and resolve programming logic errors - Recognize and correct syntax errors - Examine and resolve data errors.

Books Recommended

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Mervyn G. Marasinghe William J. Kennedy	SAS for business analytics	Springer	Revised edition

Reference

Sl.No.	Author Name	Title of the book	Publisher	Year and edition
1	Venkat Reddy Konasani, <u>Shailendra Kadre</u>	Practical Business Analytics Using SAS: A Hands-on Guide	Apress	Revised Edition

**ONLINE ANALYTICAL PROCESSING
SEMESTER V&VI - PRACTICAL II – SAS
SUBJECT CODE: SB15OAP2**

Credits: 2

Hours: 28

1. Writing a Basic SAS Program Accessing Data in SAS Libraries
2. Creating a SAS Table from a CSV File
3. Reading and Generating CSV Files Using Snippets in SAS Studio
4. Using the Import Data Utility in SAS Studio
5. Creating a New Column in SAS, Performing Conditional Logic in SAS
6. Formatting Values in SAS, Using the Filter Data Task in SAS Studio
7. Creating a Scatter Plot, Series Plot Using SAS Studio
8. Creating a Histogram, Bar Chart, Bar-Line Chart Using SAS Studio
9. Summary Statistics ,Distribution Analysis Using SAS Studio
10. One-Way Frequency Analysis, Table Analysis Using SAS Studio
11. Correlation Analysis, One-Way ANOVA Using SAS Studio

12. Analysis of Covariance Using SAS Studio

13. Time Series Modeling and Forecasting Using SAS Studio

Semester : V of UG programme / III of PG programme

Title : Information Security (Level II)* NM13IS2

Credits :2 **Lecture Hours: 26**

Objective

This course aims on introducing the theory and practice of designing and building secure computer systems that protect information and resist attacks. It covers all aspects of cyber security including network security, computer security and information security.

UNIT I (5HRS)

Information security: History of IS-What is security?-characteristic of IS-components of I system –security system life cycle model.

UNIT II (6HRS)

Cryptography: Concepts and techniques- plain text and cipher text- Encryption principles- Cryptanalysis-cryptograph algorithm- Cryptograph tools
Authentication methods-passwords-keys versus passwords-Attacking Systems via passwords- Password verification

UNIT III (5HRS)

Fire walls: Viruses and worms- Digital rights management--What is firewalls- Types of Fire wall-Design Principles of Firewall

UNIT IV (5HRS)

Hacking: Hacker hierarchy-password cracking-Phishing- Network Hacking- Wireless hacking.-Windows hacking- Web hacking- Ethical hacking

UNIT V (5 Hrs)

Case studies: DNS, IP SEC- Social media

Applicable to

*B.Sc Mathematics & B. sc & M. Sc Physics have the option to choose any of the courses- level 1/ level2. All UG Computer Science courses

Course material will be supplied

TEXT BOOK:

S.no	Author	Title of book	Publisher	Year of publication
1	Dr.Michael E. Whitman, Herbert J. Mattord	Principles and Practices of Information Security	Course Technology Cengage Learning	4 th edition, 2012
2	Atul Kahato	Cryptography and Network Security	McGraw Hill Education	3 rd Edition 2012
3	William Stallings	Network Security Essential Applications and standard	Prentice Hall	2 nd Edition 2009
4	Devan N. Shah	Information Security Principles and Practice	Wiley India	2009

Hours allotted – 2hrs / week

There will be only internal evaluation for these papers. Two internal tests in two units each (Unit 1 &2 for the CA I and Unit 3 &4 for the CA II) . The duration of the test will be 2hours for a maximum of 40 marks. There will be no credits awarded. Marks secured will be converted into grades .

Evaluation (Internal)

Tests	2x40 = 80 marks.
Quiz	10 marks
Assignment	10 marks
Total	100marks

Question paper pattern**Section A**

Answer in two sentences 2x5= 10 marks (5 out of 8)

Section B

Answers in one page 5x6= 30 marks (6 out of 8)

Total **40 marks**

