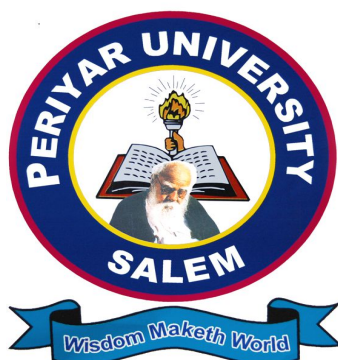


**PERIYAR UNIVERSITY
PERIYAR PALKALAI NAGAR
SALEM – 636 011**



**DEGREE OF MASTER OF SCIENCE
CHOICE BASED CREDIT SYSTEM
SYLLABUS FOR M.SC. SOFTWARE SCIENCE
(FIVE YEAR INTEGRATED PROGRAMME)**

**REGULATIONS AND SYLLABUS
FOR AFFILIATED COLLEGES**

Effective From The Academic Year 2017 – 2018 Onwards

PERIYAR UNIVERSITY, SALEM - 636 011
M.SC. SOFTWARE SCIENCE
(FIVE YEAR INTEGRATED PROGRAMME)

Regulations

Effective from the Academic year 2017 - 2018

1. OBJECTIVE OF THE PROGRAMME

To produce postgraduates in software science with research experience in-order to fill the gap between the academic and industry.

2. CONDITION FOR ADMISSION

Candidates seeking admission to first year of the integrated M.Sc., Software Science shall be required to have passed the Higher Secondary Board of Examination, Tamil Nadu or any three year diploma in any Branch of Engineering in Tamil Nadu or equivalent thereto by the Syndicate, subject to such other conditions as may be prescribed therefor.

3. DURATION OF THE COURSE

The course for the degree of Master of science in Software Science shall consist of five Academic years divided into ten semesters.

4. EXAMINATIONS

The examination shall be of three hours duration for each course at the end of each semester. The candidate failing in any subject(s) will be permitted to appear in the subsequent examination.

The practical / software development / project should be an individual work. The University examination for practical / software development / project work will be conducted by the internal and external examiners jointly at the end of each semester.

5. STRUCTURE OF M. Sc (Software Science) FIVE YEAR INTEGRATED PROGRAMME UNDER CBCS PATTERN FOR AFFILIATED COLLEGES (FROM 2017 AND THEREAFTER)

CURRICULUM AND SCHEME OF EXAMINATIONS

Courses	Number of Credits	Hours Per Week	Exam Duration (hrs)	Marks		
				CIA	EA	Total
Semester-I						
English Course-I-17PSSE01-English	3	6	3	25	75	100
Allied Course-I-17PSSA01-Algebra and Calculus	4	5	3	25	75	100
Allied Course-II-17PSSA02-Applied Physics	4	5	3	25	75	100
Core Course-I - 17PSS01 - Analog and Digital Electronics	5	6	3	25	75	100
Core Course - II -17PSSP01 - Lab - I Office Automation Lab	3	5	3	40	60	100
17UVE01 - Value Education	2	2	3	25	75	100
17UES01 - Environmental Studies	-	1	-	-	-	-
Semester-II						
Allied Course-III-17PSSA03 - Numerical Methods	4	5	3	25	75	100
Allied Course-IV - 17PSSA04-Accounting and Financial Management	4	5	3	25	75	100
Core Course-III-17PSS02-Programming in C	5	6	3	25	75	100
Core Course - IV - 17PSS03 - Data Structures	5	6	3	25	75	100
Core Course - V - 17PSSP02 - Lab-II C Programming Lab	3	6	3	40	60	100
17UES01 - Environmental Studies	2	2	3	25	75	100

EDC-EXTRA DISCIPLINARY COURSE

Students are expected to opt EDC (Non major elective) offered by other departments.

1. Principles of Information Technology
2. Fundamentals of Computers and Communications
3. E-Commerce

CIA – CONTINUOUS INTERNAL ASSESSMENT

EA – EXTERNAL ASSESSMENT

6. EXAMINATIONS

6.1 THEORY

6.1.1 EVALUATION OF CONTINUOUS INTERNAL ASSESSMENT

Test	:	10 Marks
Seminar	:	05 Marks
Assignment	:	05 Marks
Attendance	:	05 Marks

Total	:	25 Marks

(No passing minimum)

6.1.2 EVALUATION OF EXTERNAL ASSESMENT

QUESTION PAPER PATTERN

Time: 3 Hours

Max. Marks: 75

PART- A: 5x5 = 25 marks

Answer all the questions

One question from each unit (either or type)

PART- B: 5x10 = 50 marks

Answer all the questions

One question from each unit (either or type)

The Passing minimum shall be 50% out of 75 marks (38 marks)

6.2 PRACTICAL / SOFTWARE DEVELOPMENT

6.2.1 EVALUATION OF CONTINUOUS INTERNAL ASSESSMENT

Test 1	:	15 Marks
Test 2	:	15 Marks
Record	:	10 Marks

Total	:	40 Marks

(No passing minimum)

6.2.2 EVALUATION OF EXTERNAL ASSESSMENT

I) PRACTICAL

QUESTION PAPER PATTERN

Time: 3 Hours

Max. Marks: 60

There will be two questions with or without subsections to be asked for the practical examination. Every question should be chosen from the question bank prepared by the examiner(s). Every sixth student should get a new question i.e. each question may be used for at most five students.

Distribution of Marks

Each question : 30 Marks

Problem Understanding	: 05 Marks
Program writing	: 10 Marks
Debugging	: 10 Marks
For Correct Results	: 05 Marks

II) SOFTWARE DEVELOPMENT

Viva-voce (jointly)	: 30 Marks
Modification	: 30 Marks

Students should write about their software development briefly.

- i. Aim
- ii. Features
- iii. Modules
- iv. Modification

III) PROJECT WORK

Continuous Internal Assessment	: 50 Marks
Evaluation (External)	: 50 Marks
Viva-voce (jointly)	: 100 Marks

7. REGULATIONS OF PROJECT WORK

- Students should do their Project work in Company / Institutions.
- The Candidate should submit the filled in format as given in Annexure-I to the department for approval during the 1st Week of December.
- Periodically the project should be reviewed.
- The Student should submit three copies of their Project work.
- A Sample format is enclosed in Annexure-II.
- Format of the Title page and Certificate are enclosed in Annexure III.
- The students may use power point presentation during their viva voce examination.

8. PASSING MINIMUM

The candidate shall be declared to have passed in the Theory / Practical / Software Development / Project Work examination, if the candidate secures not less than 50% marks in EA and also in Total of the prescribed marks. However submission of a record notebook is a must.

9. CLASSIFICATION OF SUCCESSFUL CANDIDATES

Candidates who obtain 75% and above in the aggregate shall be deemed to have passed the examination in **First Class with Distinction** provided they pass all the examinations prescribed for the programme at the first appearance. Candidates, other than the above, who secure not less than 60% of the aggregate marks in the whole examinations shall be declared to have passed the examination in **First Class**. The remaining successful candidates shall be declared to have passed in **Second Class**.

Candidates who pass all the examinations prescribed for the programme in first instance and within a period of two academic years from the year of admission are only eligible for **University Ranking**.

10. MAXIMUM DURATION FOR THE COMPLETION OF THE PROGRAMME

The maximum duration to complete the programme shall be three academic years after normal completion of the programme.

11. COMMENCEMENT OF THIS REGULATION

These regulations shall take effect from the academic year 2017-18, that is, for students who are admitted to the first year of the programme during the academic year 2017-18 and thereafter.

12. TRANSITORY PROVISION

Candidates who were admitted to the MSc Software Science five year integrated programme of study before 2017-2018 shall be permitted to appear for the examinations under those regulations for a period of three years after completion of the programme. Thereafter, they will be permitted to appear for the examination only under the regulations then in force.

ANNEXURE - I

PERIYAR UNIVERSITY

Name of the College :
Programme :
Name of the Student :
Register Number :
Title of the Project Work :
Address of Organization / Institution :

Name of the External Guide :
Designation :

Place :

Date :

Signature of External Guide
(with seal)

Name of the Internal Guide :
Qualification :
Teaching Experience :

Place :

Date :

Signature of Internal Guide

Principal

[Approved or not Approved]

[University Use]

CONTENTS

Chapter	Page No.
COLLEGE BONAFIDE CERTIFICATE	
COMPANY ATTENDANCE CERTIFICATE	
ACKNOWLEDGEMENT	
SYNOPSIS	
1. INTRODUCTION	
1.1 ORGANIZATION PROFILE	
1.2 SYSTEM SPECIFICATION	
1.2.1 HARDWARE CONFIGURATION	
1.2.2 SOFTWARE SPECIFICATION	
2. SYSTEM STUDY	
2.1 EXISTING SYSTEM	
2.1.1 DESCRIPTION	
2.1.2 DRAWBACKS	
2.2 PROPOSED SYSTEM	
2.2.1 DESCRIPTION	
2.2.2 FEATURES	
3. SYSTEM DESIGN AND DEVELOPMENT	
3.1 FILE DESIGN	
3.2 INPUT DESIGN	
3.3 OUTPUT DESIGN	
3.4 CODE DESIGN	
3.5 DATABASE DESIGN	
3.6 SYSTEM DEVELOPMENT	
3.6.1 DESCRIPTION OF MODULES	
(Detailed explanation about the project work)	
4. TESTING AND IMPLEMENTATION	
CONCLUSION	
BIBLIOGRAPHY	
APPENDICES	
A. DATA FLOW DIAGRAM	
B. TABLE STRUCTURE	
C. SAMPLE CODING	
D. SAMPLE INPUT	
E. SAMPLE OUTPUT	

A. Format of the title page

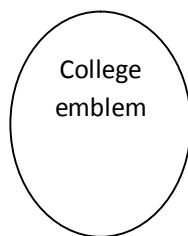
TITLE OF THE PROJECT WORK

A Project Work submitted in partial fulfillment of
the requirements for the degree of
Master of Science in Software Science
to the
Periyar University, Salem - 11

By

NAME OF THE STUDENT

REG. NO.



COLLEGE NAME
(AFFILIATED TO PERIYAR UNIVERSITY)
PLACE with Pin Code

MONTH – YEAR

B. Format of the Certificate

Name and Address of the Internal Guide

Place

Date

CERTIFICATE

This is to certify that the Project Work entitled
..... submitted in partial fulfillment of the requirements
of the degree of Master of Science in Software Sciences to the Periyar University, Salem is a
record of bonafide work carried out by Reg. No. under my
supervision and guidance.

Internal Guide

Head of the Department

Date of Viva-voice:

Internal Examiner

External Examiner

SEMESTER I
17PSSE01 ENGLISH

Hours: 6

Credits: 3

UNIT – I

The following lessons from the prescribed Text :-

1. Global Environmental Concerns - Arvind Gupta.
2. Robots – Irena M. Kunni & Otis Prot.
3. Towards a Wireless World – Ganesh Kollegan.
4. Within Sight of Cyber Cinema – Anand Parthasarathy.
5. Occupational Stress in IT Job – Hema Natarajan.
6. Seven Steps to Successful Managing – S.Ramanujacharya.

The exercise at the end of each lesson on vocabulary – Technical, idioms and phrases Grammar and spoken English are to be carefully studied to strengthen vocabulary and pronunciation.

UNIT – II

Grammar

Articles and Prepositions - Prefix and Suffix - Fill in the blanks with appropriate words - Comparison of Adjectives and Adverbs - Sequence of Tenses - Conditional Sentences - Voice - Concord - Infinitive and Gerund - Correction of Sentences - Idioms and Phrases - Transcription of individual words.

UNIT – III

Reading Comprehension. Lessons not prescribed for detailed study may be used to teach Reading Comprehension. - Dialogue Writing.

UNIT – IV

Letter Writing - Formal and Informal - Job Application with C.V.

UNIT – V

Organize the given information in the form of a Laboratory Report - Design a Technical Report - Transcribing the given diagram / chart into a report.

TEXT BOOK:

1. T.M.Farhathullah, Effective English For Technical Communication, Emerald Publishers.

17PSSA01- ALGEBRA AND CALCULUS

Hours: 5

Credits: 4

UNIT – I

Algebra: Binomial, Exponential, Logarithmic Series – Summation of Series using Binomial, exponential, Logarithmic Series – finding Coefficients of X^n in power series Expansion-approximation using binomial, exponential, logarithmic series. Theory of Equations: Relations between Roots and Coefficients of polynomial - Formation of Equations – Decreasing and Increasing of Roots – Reciprocal Equations. Horner's Method of finding the roots of polynomial Equations.

UNIT - II

Trigonometry, Expansion of $\sin nx$, $\cos nx$ in terms of $\sin x$, $\cos x$ expansion of $\tan x$, Expansion of $\sin^m(x)$, $\cos^m(x)$ in terms of series of sines or cosines of multiples of power series expansion for $\sin x$, $\cos x$, $\tan x$ – hyperbolic and inverse hyperbolic functions – Logarithms of complex numbers.

UNIT – III

Curvature in cartesian and polar coordinates – Circles of curvature. Envelopes and evaluates – Statement of Taylor's series for a function of two variables – Maxima and Minima of two variables – (proof not required). Constrained Maxima and Minima – Lagrange's multiplier methods.

UNIT – IV

Multiple Integrals: Evaluation of multiple integrals – changes of order of integration – application of multiple integral to find area and volume of solid. Beta and Gamma Integrals: Definition – Relation connecting Beta and Gamma integral – Properties- Evaluation of definite integral in terms of beta and gamma functions.

UNIT – V

Vector Calculus: Differentiation of Vectors – Gradient, Divergence of curl directional derivative – Line, Surface and volume integral – Statement of Green's theorem – Gauss Divergence theorem and Stokes's theorem – Applications.

Note: the question paper should consist of 100% problems.

TEXT BOOKS:

1. Venkata Subramanian, N.K., Lakshmi Narayanan, K.A., Sundaram, V. & Balasubramanian, R. Engineering Mathematics, J.J. Publishing Company, Madurai, 1996.
2. Venkataraman, N.K., Engineering Mathematics Vol I, II, The National Publishing Company, 1981.

REFERENCE BOOKS:

1. Narayanan, S, Manicka Vachagam Pillai, T.K. & Ramanaian, G. Advanced Mathematics for Engineering Students, Vol II S. Vishwanathan (Printers and Publishers Pvt Ltd., 1986).
2. Kandasamy, P. Thilagavathy, K. & Gunavathy, K. Engineering Mathematics Vol 1, 2, S. Chand & Co, New Delhi, Vol-I 1989, Vol-2- 1990.

17PSSA02-APPLIED PHYSICS

Hours: 5

Credits: 4

UNIT – I

Laser and Fiber Optics : Construction and working of He-Ne laser-CO₂ Laser – Ruby laser-Semiconductor Laser – Application. Types of Optical Fiber - Single and Bundled Fibre – Fibre Material - Attenuation – Fibre Optic Light Sources – Detectors – Fibre Optic Communication.

UNIT – II

Super Conductor: Qualitative study of the phenomenon – Critical Temperature and Critical Field. Meissner Effect – Josephson Effect – Type 1 and 2 Super Conductor. BCS theory of Super conductivity (Qualitative) – High Temperature Super Conductor.

UNIT – III

Electrical Properties: Free Electron theory of Drude and Lorentz – Weidmann – Franz Law – Distinction between Conductors, Semi Conductors and Insulators on the basis of Band Theory.

UNIT – IV

Semi Conducting Materials: Intrinsic, Extrinsic Semi conductors – Material Preparation: Czochralski Method – Zone Refining. Hall Effect in Semi Conductor – Applications. Physics of PN Junction diode – Junction transistor. Dielectrics: Permittivity – Dielectric Constant – Dielectric polarization. Types of polarization - Break Down Mechanisms.

UNIT – V

Magnetic Properties: Ferro Magnetism: Domine Theory – Hysteresis – Hard and Soft Magnetic Materials – Curie – Weiss Law – Magnetossniction. Ferrites: Preparation, Properties, Application - Magnetic Bubble Memory.

Note: The question paper should consist of 100% theory

TEXT BOOKS

1. Brijal and Subramanian, Optics S.Chand & Co., 1995
2. Raghvan, V. Material Science and Engineering – A First Course, PHI.
3. Srinivasan, M.R. Physics For Engineers, New Age International Pvt.Ltd., 1996.

REFERENCE BOOKS

1. Seth & Gupta, Course in Electrical Engineering Materials, Dhanpat Rai & Sons, 1990.
2. Arumugam.M, Material Science, New Age International Pvt Ltd, Publication 1996.
3. Rajendran.V & Marikani.A, Applied physics for Engineers, 2Ed, Tata McGraw-Hill Publishing Co.

17PSS01- ANALOG AND DIGITAL ELECTRONICS

Hours: 6

Credits: 5

UNIT – I

Number Systems: Introduction to Decimal, Binary, Octal, Hexadecimal Number Systems, BCD Codes, Inter – Conversions of Binary, Decimal and BCD Numbers, Excess 3 and Gray and Johnson's codes – Concepts of parity, ASCII codes. Boolean Arithmetic and Theorem: Basic Theorem and properties – Canonical Forms – Logical Operations – Simplification of Boolean Function.

UNIT – II

Logical Gates and Families: AND, OR, NOT, NAND, NOR, XOR, gates and truth tables. TTL, ECL, CMOS, logical Families. Parameter, Voltage level, Compatibility, Noise Margin Level.

UNIT – III

Combinational Logic Circuit: Encoders, Decoders, Demultiplexers, Ics from TTL, ECL and CD Families. Flipflops; RS, JK, Master slave, D, T Flipflops, Multivibrators – Astable – Monostable and Bistable Multivibrators. Shift Registers and Counters: Parallel / Serial / Inserial outshift registers. Ring Counters, Synchronous and asynchronous, Scaling Circuits, Stack.

UNIT – IV

Electronic components (Passive Elements): Working Principles, Symbols, Types Technical Specifications parameter value identification/ Measurement techniques and Application areas for Resistors, Inductors, Capacitors, Transformer, Relays, Switches, Batteries, Fuses.

UNIT – V

Electronic Components (Active Elements): Working Principles, Symbols, Types, Technical Specifications, parameter Value Identification and Application areas for PN Junction Diodes – Linear, Varactor, Photodiodes, LED, Zener diode, OPTP – Isolators, BJTs – Characteristics, Basic Configurations biasing, Operating Point load length, biasing for stabilization of operating point, UJT, JFET, MOSFET, SCR, DIAC, TRIAC.

Note : The Question Paper Should Consist Of 100% Theory.

TEXT BOOKS:

1. Sedha, R.S., "Textbook of Applied Electronics," 3/e S.Chand Publishing, 1990
2. Malvino Leach, "Digital Principles and Applications," 7/e TMH, 2011

REFERENCE BOOKS:

1. Millman and Halkias, Integrated Electronics, Tata McGraw – Hill publishing Co.Ltd.,
2. Bernard Grob, Basic Electronics, 8th Ed., McGraw-Hill.

17PSSP01-MS OFFICE LAB

Hours: 5

Credits: 3

MS-WORD :

1. a. Starting MS-Word, Creating, Saving, Printing (with options) Closing and Exiting.
b. Study of Word – Menu / Toolbars.
2. a. Create a document, save it and edit the document as follows:
 - i) Find and Replace options
 - ii) Cut, Copy, Paste Options
 - iii) Undo and Redo Optionsb. Format the document :
 - i) Using Bold, Underline and Italic.
 - ii) Change character size using the font dialog box.
 - iii) Formatting paragraph: Center, Left aligns & Right aligns.
 - iv) Changing paragraph and line spacing, using Bullets and Numbering in paragraphs.
 - v) Creating Hanging Paragraphs.
3. Using tab settings enhancing the documents (Header, Footer, Page setup, Border, opening & Closing Toolbars, Print Preview).
4. Creating Tables in a document, Selecting rows & columns sort the record by using tables, Format painter and Auto format.
5. Drawing flow chart using drawing toolbar, inserting picture and setting frames.
6. Mail Merge in word (Creating main document, data source, inserting merge fields and viewing merge data, viewing and printing merged letter, using mail merge to print envelope creating mailing labels).

MS-EXCEL :

1. a. Create a work sheet, moving / copying / inserting deleting rows & columns. (Usage of Cut, Paste commands, Copying a single cell, copying a range of data, Filling up a cell. Undo command, inserting a row and column, deleting rows and columns.)
b. Formatting worksheets
 1. Bold style
 2. Italic style
 3. Font size Changing
 4. Formatting numbers (Auto fill, selection command, currency format, currency syllabus)
 5. Specifying percentage (%) scientific notations.
 6. Drawing Border around cells
 7. Printing a worksheet (Print preview, Margin setting, Header, Footer)
2. a. Database concept : Database, record field and field name – creating and sorting a database and maintaining a database (data form)
 - b. Using auto filter, advanced filter.
 - c. Creating subtotals & grand totals – Using Database functions
3. Creating charts.

- i) Using chart wizard (5 steps)
 - ii) Changing the chart type (Pie, Bar, Line)
 - iii) Inserting titles for the Axes X,Y
 - iv) Changing colors.
 - v) Printing charts.
- 4. a. Using date, time and maths functions :
 - i) Entering current date
 - ii) Using date arithmetic (adding and subtracting dates)
 - iii) Date functions (Day, month, year)
 - iv) Using time functions (Hour, Minute, Second)
- b. Maths functions
 - i) SUM, COUNT, AVERAGE
 - ii) MAX, MIN
 - iii) STDEV, VAR
 - iv) ABS, EXP, INT
 - v) LOG 10 & LOG
 - vi) MOD, ROUND, SORT
 - vii) Using Auto sum.
- c. Logical and Financial functions.
 - Logical (IF / AND / OR / NOT)
 - Financial (PMT, FV, NPER, RATE)
- 5. i) Creating and Running a Macro.
 - ii) Assigning button to a defined macro.
 - iii) Editing a macro.

MS-POWER POINT:

- 1. Creating a presentation using auto content wizard.
- 2. Different views in power point presentation.
- 3. Setting animation effects / grouping / ungrouping / cropping power point objects.
- 4. Printing a presentation / Importing – Exporting files.
- 5. Creating an organization chart in Power Point.

MS-FRONT PAGE :

- 1. Creating Web Pages.

SEMESTER II **17PSSA03 – NUMERICAL METHODS** **(Proofs are not expected)**

Hours: 5

Credits: 4

UNIT – I

Definition and Elementary properties of Determinants – Cramer's Rule. Matrices – Properties – Rank – inverse – Consistency and Inconsistencies of systems of linear algebraic equations – Eigen Values and Eigen Vectors – Diagonalisation.

UNIT – II

Curve fitting by methods of least squares – Only curves of the form or reducible to the form $y=ax+b$, $y=ax^2+bx+c$. Finite difference operators – Difference table. Solution of First and Second order linear finite difference equation with constant coefficients.

UNIT – III

Newton's Forward and Backward Formulae – Lagrange's Interpolation Formula. Numerical Differentiation – Numerical Integration using Trapezoidal rule and Simpson's 1/3 rule.

UNIT – IV

Methods of False Position, Interactive method and Newton Raphson method for finding real roots for transcendental and polynomial equations – Graffe's root squaring method and bairstow's method for solving polynomial equations. Power method for finding eigen values and eigen vector of matrices. Methods for solving simultaneous linear algebraic equations – Gauss elimination method – Gauss Jordan elimination method – Gauss Jacobi and Gauss Seidel iterative methods.

UNIT – V

Numerical methods for solving ordinary differential equations. Tayler's series method, Euler's and modified Euler's (Heun's) method – Rungekutta methods of second and fourth order – Milne's predictor and corrector – Adam's predictor and corrector methods.

TEXT BOOKS:

1. Kandasamy. P & Others Engineering Mathematics Vol2, S.Chand & Co, New Delhi, 1987.
2. Venkataraman. N.K, Numerical Methods in Science and Engineering, The National Pub.Co., Chennai, 1986.
3. Gerald C.F., Applied Numerical Analysis, Addison Wesley, 1870.

REFERENCE BOOKS:

1. Balagurusamy.E., Theory & Applications of Numerical Computing, Tata McGraw-Hill.
2. Sastry.S.S., Introductory Methods of Numerical Analysis, PHI, 1975.
3. Chapra, Numerical Methods for Engineers, 3Ed (with 3.5 Dist), McGraw-Hill.

17PSSA04- ACCOUNTING AND FINANCIAL MANAGEMENT

Hours: 5

Credits: 4

UNIT I

Accounting: Definition – Objectives - Branches of Accounting - Accounting Concepts and Conventions - Groups Interested in Accounting Information - Accounting Rules – Journal - Ledger - Trial Balance – Preparation Final Accounts of Sole Trading Concerns.

UNIT II

Analysis and Interpretation of Financial Statements: Tools used - Comparative Statement - Common Size Statement and Trend Percentage. Ratio Analysis: Meaning - Advantages and Limitations - Classification of Ratios – Solvency – Profitability - Activity and Capital Structure Ratios.

UNIT III

Fund Flow Analysis: Concept of Funds - Fund Flow Statement - Uses and Limitation - Preparation of Fund Flow Statement. Cash Flow Analysis: Computation of Cash from operation and Preparation of Cash Flow Statement.

UNIT IV

Rate o Budget and Budgetary Control: Meaning – Advantages and limitations - Classification of Budgets - Preparation of Production - Sales - Cash and Flexible Budgets. Capital Budget: Meaning and Importance - Methods of Ranking Investment Proposals - Pay-Back - Average f Return and Discounted Cash Flow Methods.

UNIT V

Marginal Costing: Meaning - Advantages and Uses - Cost Volume - Profit Analysis - Break-even Concept - Uses and Assumptions - Decisions Involving Alternative Choices.

TEXT BOOKS:

1. Shukla M.C. & Grewal T.S., S.Chand, Advanced Accounts, 1991.(Unit I)
2. Dr.S.N.Maheswari, Principles of Management Accounting, Sultan Chand & sons, 2005.(Unit II to Unit V)

REFERENCE BOOKS:

1. S.P.Jain & K.L.Narang,Kalyani, Advanced Accountancy – Part-I , Publishers,1991.
2. Gupta R.L.& Radhasamy M., Advanced Accounts (Vol.II), S.Chand, 1991.
3. K.Sharma & Shasi K.Gupta, Management Accounting – Principles And Pratices , Kalyani publishers, 1992.
4. Man mohan & S.N.Goyal, Principles Of Management Accounting, Agra, Sahithya Bhawan, 1987.
5. Hingorani N.L. & Ramanathan A.R., Management Accounting, S. Chand, Edn.2, 1982.

17PSS02- PROGRAMMING IN C

Hours: 6

Credits: 5

UNIT – I

Overview Of C: History Of C – Importance Of C – Basic Structure Of C Programs. Constants, Variables And Data Types: Character Set – C Tokens – Keywords And Identifiers – Constants – Variables – Data Types – Declaration Of Variables – Declaration Of Storage Classes-Assigning Values To Variables-Defining Symbolic Constants. Operators And Expression: Arithmetic Operators -Relational Operators –Logical Operators –Assignment Operators –Increment And Decrement Operators –Conditional Operator –Bit wise Operators –Special Operators –Arithmetic Expressions-Evaluation Of Expressions-Precedence Of Arithmetic Operators –Type Conversions In Expressions- Operator Precedence And Associativity-Mathematical Functions. Managing Input And Output Operations: Reading And Writing A Character – Formatted Input And Output.

UNIT – II:

Decision Making And Branching: Simple IF, IF-Else, Nesting Of IF-ELSE,ELSE-IF Ladder, Switch Statements - GOTO Statements. Decision Making And Looping: WHILE Statement- DO Statement- FOR Statement – Jumps In Loops. Arrays: Definition – One - Dimensional Arrays –Declaration Of One -Dimensional Arrays-Initialization Of One - Dimensional Arrays- Two- Dimensional Arrays – Initializing Two Dimensional Arrays – Multidimensional Arrays-Dynamic Arrays.

UNIT – III:

Character Arrays And Strings: Introduction – Declaring And Initializing String Variables - Reading Strings From Terminal – Writing Strings To Screen – String Handling Functions-Table Of Strings. User-Defined Functions: Introduction-Need For User-Defined Function-A Multi-Function Program-Elements Of User-Defined Function-Definition Of Functions- Return Values And Their Types – Function Calls-Function Declaration- Category Of Functions: Functions With No Arguments And No Return Values – Functions With Arguments And No Return Values - Functions With Arguments And One Return Values - Functions With No Arguments But Return Values- Functions That Return Multiple Values – Nesting Of Functions- Recursion- Passing Arrays To Functions-Passing Strings To Functions– The Scope, Visibility And Lifetime Of Variables. Structures And Unions: Introduction-Defining A Structure-Declaring Structure Variables-Accessing Structure Members-Structure Initialization-Copying And Comparing Structure Variables-Operation On Individual Members-Arrays Of Structures-Arrays Within Structures-Structures Within Structures-Structures And Functions-Unions-Size Of Structures-Bit Fields .

UNIT – IV:

Pointers: Introduction-Understanding Pointers-Accessing The Address Of A Variable-Declaring Pointer Variables-Initialization Of Pointer Variables-Accessing A Variable Through Its Pointer-Chain Of Pointers-Pointer Expressions-Pointer Increments And Scale Factor-Pointers And Arrays-Pointers And Character Strings-Arrays Of Pointers-Pointers As Function Arguments - Functions Returning Pointers - Pointers To Functions - Pointers And Structures. File Management: Introduction-Defining And Opening A File-Closing A File-Input/Output Operations On Files-Error Handling During I/O Operations-Random Access Files-Command Line Arguments. The Preprocessor: Introduction – Macro Substitution – File Inclusion – Compiler Control Directives.

UNIT – V:

Case Studies: Programming Exercises: Producing Fibonacci Series, Finding Perfect Numbers, Find The Largest And Smallest Of Given Numbers, Pascal Triangle Preparation, To Find The Following Series: Sum Of N Numbers, Sum Of Odd And Even Numbers, Sum Of Square Of N Numbers, Sum Of Square Of Odd And Even Numbers, SIN Series, COS Series, Exponential Series, Finding Prime Numbers, Sorting Of Numbers In Ascending And Descending Order, Matrix Manipulation: Addition, Subtraction , Multiplication Of Two Matrices And Transpose Of A Matrix. Counting And Reversing A String, Calculating The Factorial Of N Numbers Using Recursive Function, Swapping Of Two Numbers Using Function and Pointers, Students Mark List Preparation, Pay Bill Preparation,

TEXT BOOK:

1. E.Balgurusamy - Programming in ANSI C, TMH , New Delhi, 3rd Edition.

REFERENCE BOOKS:

1. Ashok N.Kamthane, Programming with ANSI and Turbo C, Pearson Education Asia, 2003.
2. T.Jeyapoovan, A First Course in Programming with C, Vikas 2002.
3. Noel Kalicharan, C By Example , Cambridge, 1994.
4. Yeswanth Kanetkar , Let us C, BPB publications, 2001
5. Yeswanth Kanetkar , Pointers in C, BPB publications

17PSS03-DATA STRUCTURES

Hours: 6

Credits: 5

UNIT - I

Introduction: Definitions – Concept of Data Structures – Overview of Data Structures – Implementation. Arrays: Definition – Terminology – One-Dimensional Array – Multi-Dimensional Arrays – Pointer Arrays. Linked Lists: Definition – Single Linked List – Circular Linked List – Double Linked List – Circular Double Linked List – Memory Representation - Buddy System – Compaction.

UNIT - II

Stacks: Introduction – Definition – Representation of Stack – Operations on Stacks – Applications of Stacks – Evaluation of Arithmetic Expression – Implementation of Recursion. Queues: Introduction - Definition – Representation of Queues – Various Queue Structures. Tables: Rectangular Tables – Jagged Tables – Inverted Tables - Hashed Tables – Hashing Techniques.

UNIT - III

Trees: Definition – Binary Trees – Properties – Representation – Operations – Threaded Binary Trees – Trees and Forest. Graphs: Introduction – Terminologies – Representation - Linked Representation – Matrix Representation – Operations on Matrix Representation of Graphs.

UNIT - IV

Sorting: Insertion Sort - Shell Sort – Heap Sort – Merge Sort – Quick Sort - Sorting Large Structures – Bucket Sort – External Sorting: Needs – Model For External Sorting – The Simple Algorithm – Multiway Merge. Search trees: The Search Tree ADT-Binary Search Trees – AVL Trees – B-Trees.

UNIT - V

Application: Sparse Matrix Manipulation – Polynomial representation – Dynamic Storage Management – Tower of Hanoi Problem – Activation Record Management – Simulation – CPU Scheduling in Multiprogramming Environment – Shortest Path – Warshall's Algorithm.

TEXT BOOKS:

1. D.Samanta, Classic Data Structures, Prentice-Hall India Pvt Ltd, Sixth Printing, August 2005.
2. Mark Allen Weiss, Data Structures and Algorithm Analysis in C, Pearson Education, Second Edition, Reprint 2002.(Unit IV)

REFERENCE BOOKS:

1. John Paul Tremley and Paul G.Sorenson, An Introduction to Data Structures with Applications, TMH, 1995.
2. Horowitz.E. and Sahani, Fundamentals of Data Structures, Galgotia Pub-1982.

17PSSP02 – C PROGRAMMING LAB

Hours: 6

Credits: 3

Implement the following:

1. Perform various Operations on Single Dimensional Array.
2. Perform various Operations on Matrices
3. Perform String Operations using String Library Functions
4. Functions and recursive functions
5. Structures with array elements
6. Array of structures
7. Union
8. Accessing data using Pointers
9. Arrays of pointers and Pointer to arrays and structures
10. String Handling
11. Macros
12. Creation and Processing of sequential files
13. Create random file and perform various Operations
14. Pass Command line arguments to main function and use them
15. Graphics Primitives