I SEMESTER

S No	CODE	Subject	Hours	Credits	Internal Marks	External Marks
1	T1	Tamil	6	3	25	75
2	E1	English	6	3	25	75
3	CS1	Programming in C	4	4	25	75
4	CS2	**Lab 1** : Programming in C	6	4	40	60
5	AS1	Mathematical Foundations I	4	4	25	75
6	SBS1	**Lab 2**: Office Automation	2	2	40	60
7	NME1	Introduction to Computers and Office Automation	2	2	25	75
		Total	30	22		

Appendix – CS3 (Detailed Syllabus)

CS1: Programming in C (4 Hours - 4 credits)

Unit I:

Overview of C: History of C – Importance of C – Basic Structure of C Programs – Programming Style – Character Set – C Tokens – Keywords and Identifiers – Constants, Variables and Data Types – Declaration of Variables – Defining Symbolic Constants – Declaring a variable as a constant – overflow and underflow of data – Operators and Expressions: Arithmetic, relational, logical, assignment operators – increment and decrement operators, conditional operators, bitwise operators, special operators – Arithmetic Expressions- Evaluation of Expressions – Precedence of Arithmetic Operators – Type Conversions in Expressions – Operator Precedence and Associativity – Mathematical functions.

Unit II:

Managing I/O Operations: Reading and Writing a Character – Formatted Input, Output – Decision Making & Branching: if statement - if else statement - nesting

of if else statements - else if ladder – switch statement – the ?: operator – goto statement – the while statement – do statement – the for statement – jumps in loops.

Unit III:

Arrays: One-Dimensional Arrays – Declaration, Initialization – TwoDimensional Arrays – Multi-dimensional Arrays – Dynamic Arrays –361 Initialization. Strings: Declaration, Initialization of string variables– reading and writing strings – string handling functions.

Unit IV:

User-defined functions: Need – multi-function programs – elements of user defined functions – definition – return values and their types – function calls, declaration, category – all types of arguments and return values – nesting of functions – recursion – passing arrays, strings to functions – scope visibility and life time of variables. Structures and Unions: Defining a structure – declaring a structure variable – accessing structure members – initialization – copying and comparing – operation on individual members – array of structures – arrays within structures –

structures within structures – structures and functions – unions – size of structures – bit fields.

Unit V:

Pointers : Understanding Pointers, Accessing the address of a variable – declaring, initialization of pointer variables – accessing a variable through its pointer – chain of pointers – pointer increments and scale factors – pointers and character strings – pointers as function arguments – pointers and structures. Files: Defining, opening, closing a file – IO Operations on files – Error handling during IO operations – command line arguments.

Text Book:

Programming in ANSI C, E.Balagurusamy, 7 th Edition, Tata McGraw Hill Publishing Company, 2017.

Unit I : Chapters 1 (Except 1.3-1.7, 1.10-1.12), 2 (Except 2.9, 2.13), 3 (Except 3.13)

Unit II : Chapters 4 – 6

Unit III : Chapters 7, 8 (Except 8.5, 8.6, 8.7, 8.9, 8.10)

Unit IV : Chapters 9 (Except 9.20), 10

Unit V : Chapters 11 (Except 11.8, 11.10, 11.12, 11.14, 11.15, 11.17), 12 (Except 12.6)

Reference Books:

1. Programming with C, Schaum's Outline Series, Gottfried, TataMcGraw Hill, 2006

2. Programming with ANSI and Turbo C , Ashok N.Kamthane , Pearson Education, 2006

3. H. Schildt, C: The Complete Reference, 4th Edition, TMH Edition,2000.

4. Kanetkar Y., Let us C, BPB Pub., New Delhi, 1999.362

CS2: Lab 1: Programming in C

(6 Hours - 4 credits)

Section A

1. Write a C Program to find the sum of digits

2. Write a C Program to check whether a given number is Armstrong or not ?

3. Write a C Program to check whether a given number is Prime or not

4. Write a C Program to generate the Fibonacci series

5. Write a C Program to display the given number is Adam number or not

6. Write a C Program to print reverse of the given number and string

7. Write a C Program to find minimum and maximum of ‘n’ numbers using array

8. Write a C Program to arrange the given number in ascending order

9. Write a C Program to add, subtract and multiply two matrices

10. Write a C Program to calculate NCR and NPR

Section B

1. Write a C Program to find the grade of a student using else if ladder

2. Write a C Program to implement the various string handling functions

3. Write a C Program to create an integer file and display the even numbers only

4. Write a C Program to calculate quadratic equation using switch-case

5. Write a C Program to implement the various string handling function

6. Write a C Program to generate student mark list using array of structures

7. Write a C Program to create and process the student mark list using file

8. Write a C Program to create and process pay bill using file

9. Write a C Program to create and process inventory control using file

10. Write a C Program to create and process electricity bill using file

AS 1: Mathematical Foundations I

(4 Hours – 4 Credits)

Unit I:

The Foundations: Logic and Proofs: Propositional logic – Applications of Propositional logic – Propositional equivalences – (Exclude Propositional satisfiability, Applications of satisfiability, Solving satisfiability problems, and its related problems) – Predicates and Quantifiers – Rules of inference.

Unit II:

Relations: Relations and their properties – Representing relations – Closures of relations – Partial orderings (Theorems statement only; Exclude lexicographic ordering - Exclude Lattices)

Unit III:

Counting: The basic of counting - The pigeonhole principle – Permutation and Combinations – Applications of recurrence relations – Solving recurrence relations – Divide and Conquer algorithms and recurrence relations. (All theorems and Results statement only)

Unit IV:

Graphs: Graphs and Graphs models, (Excluding Biological networks; Tournaments; all its related examples and problems) – Graph terminology and special types of graphs – Representing graphs and Graph isomorphism – Connectivity (paths – connectedness in undirected graphs – paths and isomorphism – counting paths between vertices) – shortest path problems.

Unit V:

Matrices: Introduction – operations – inverse – Rank of a matrix, solution of simultaneous linear equations – Eigen values and Eigen Vectors.

Text Books:

1. Discrete Mathematics and its applications, Seventh Edition, Kenneth.H.Rosen, McGrawHill Publishing Company, 2012.

2. Discrete Mathematics, M.Venkataraman, N.Sridharan and N.Chandrasekaran, The National Publishing Company, 2009.

Unit I :Textbook 1 Chapter 1: Sections: 1.1, 1.2, 1.3, 1.4, 1.6

Unit II :Textbook 1 Chapter 9: Sections: 9.1, 9.3, 9.4, 9.5, 9.6

Unit III:Textbook 1 Chapter 6: Sections: 6.1, 6.2, 6.3 ,Chapter 8: Sections: 8.1, 8.2, 8.3 (Pages: 527 -529 only) (Exclude algorithms and relations, on page 507 and its related problems)

Unit IV:Textbook 1 Chapter 10: Sections: 10.1, 10.2, 10.3, 10.4, 10.6)

Unit V:Textbook 2 Chapter 6 :Sections :6.1 to 6.5, and 6.7)

Reference Books :

1.Modern Algebra - S.Arumugam and A. Thangapandi Isaac, Scitech publications 2005.

2. Invitation to Graph Theory-S.Arumugam and S.Ramachandran, Scitech Publications,2005, Chennai.

3. Discrete Mathematical Structures with applications to Computer Science - Tremblay and Manohar, McGraw Hill,1997.

SBS1: Lab 2: Office Automation

(2 Hours – 2 Credits)

1. Open a Word document to prepare your **Resume** by performing the following operations.

(a) Formatting the Text- Alignment & Font style

(b) Page setup (margin alignment, page height & width)

2. Create a student mark sheet using table, find out the total & average marks and display the result.

3. Design an invitation of your course inauguration function using different fonts, font sizes, bullets and Word Art/ Clip Art364

4. Mail Merge Concept

(a) Prepare an invitation and to be sent to specific addresses in the data source.

EXCEL

1. Create suitable work sheet with student mark details and use Data sort to display results and make out a suitable chart.

2. Prepare salary bill in a worksheet showing Basic Pay, DA, HRA, Gross salary, PF, Tax and Net salary using suitable Excel Functions.

POWER POINT

1. Create a power point presentation to explain various aspects of your college

using auto play.

2 Create a power point presentation to explain the sales performance of a

company over a period of five years. Include slides covering the profile of the

company, year wise sales and graph with gridlines, legends and titles for axes.

Use Clip Art and animation features.

ACCESS

1. Create a table for storing marks of 10 students. The fields of the table are

given below: Reg. No., Name, Mark1, and Mark2, Mark3, Test average (Best Two /2), Assignment, Seminar and Total marks (Test average + Assignment + Seminar) The fields ‘Mark1’, ‘Mark2’, ‘Mark3’ should not allow the user to enter a mark greater than 25 and should display proper message in such case. Similar constraint for the field ‘Assignment’ is 5 marks and for the field ‘Seminar’, it is 10 marks.

2. Create a table showing names of authors of at least 10 different books, title of books, the prices of these books, name of publishers and year of publication. Also create Select, Action and Cross-tab queries to display the

records from this table meeting the criteria used in these queries.

3. Create a form to enter the data directly into this form. The fields required are: Basic Pay, DA, HRA, Gross salary, PF, Income tax and Net salary.

4. Create a report that displays the customer name, address, phone number,

Item code, product quantity of the customers whose orders have been pending for over a month.

NME1: Introduction to Computers and Office Automation

(2 Hours – 2 Credits)

Unit I:

Introduction to Computer and Information Technology: History, Computer system concepts-Computer system characteristics- Capabilities and limitationsTypes of computers- Generations. **Computer organization and working:** Introduction-The Control UnitALU-Memory-Read only memory (ROM).365

Unit II:

Input Devices: Introduction- Keyboards-Mouse-Joysticks-Optical Recognition input- Scanners-Bar coders-Digital camera-MICR-Card reader-Web CamerasLight pens-Trackball- Touch screens-Touch pad-Digitizer-Voice input-Voice recognizers. **Output Devices**: Introduction-Monitors and Displays- Multimedia Projector-Printers-Graphics Output Devices-Plotters-Flatbed Plotters-Drum Plotters. **Storage Devices:** Introduction- Hard Disk Drives –CD-ROMs and DVDs – Magnetic tape – Erasable disks.

Unit III:

Microsoft Office 2007 and Word Processing: Introduction to Microsoft Office 2007 - Microsoft Word Screen. **Microsoft Word**: Working with Document in Word 2007 – Introduction – saving the file – Formatting, Alignment of text, Applying fonts-Spell checking- Borders and shading – Closing of the file, Editing document, Autocorrect-Auto format-Find and Replace, Page numbering, header and footer- Footnotes and endnotes-splitting panes-Tiling of the documentsusing mail merge in Word 2007.

Unit IV:

Microsoft Office Excel 2007: Understanding Spreadsheets-Creating a Worksheet in Microsoft Excel 2007- Copying formula – Styles functions in Excel – Using Auto calculate –References –Sum, Average functions.

Unit V:

Creating Charts in Excel 2007-Auditing a workbook – Comments Inserting – Function wizard-Goal seeking- Typing with Auto fill-Formatting numbers and Labels – changing the size of Rows and columns- Add or Remove a sheet – Protect a worksheet-Applying themes.

Text Book:

Learning computer fundamentals, MS Office and Internet & Web technology, Dinesh Maidasani, Firewall Media, Third Edition, 2014.

Unit I : Section A-1, 2

Unit II : Section A- 3, 4, 5

Unit III : Section B- 2, 3

Unit IV : Section B- 4 (up to Functions in Excel)

Unit V -: Section B- 4(From Creating Charts in Excel)

Reference Books:

1. A Beginners Guide to Computers – Alexis Leon & Mathews Leon Vikas Publishing House Pvt. Ltd., 2001.

2. Fundamentals of Computers, P. Mohan, Himalaya Publishing House, Revised Edition, 2010.

3. Fundamentals of Computers, V. Rajaraman, PHI Publication, Fifth Edition, 2010.