DEPARTMENT OF COMPUTER SCIENCE

YADAVA COLLEGE (AUTONOMOUS)

(Re – Accredited with "A" Grade by NAAC)

MADURAI -14

Under Graduate Course

Choice Based Credits System Syllabus

(2015 – 2018)

DEPARTMENT OF COMPUTER SCIENCE
YADAVA COLLEGE (AUTONOMOUS)
(Re – Accredited with "A" Grade by NAAC)

CHOICE BASED CREDITS SYSTEM SYLLABUS PLAN (2015-2018)

UNDERGRADUATE PROGRAMME

Semester	Part Code	Subject Code	Title of the Paper	Teaching	
				Hours	Credits
I	I		Tamil	5	3
	II		English	5	3
	III Core papers		Digital Principles and Computer Organization	4	3
			Programming in C	4	3
	Allied Paper		Statistics	4	5
	Core Lab I		Practical I- Programming in C Lab	2	1
	Core Lab II		Practical II - MS Office Lab	2	1
	IV ENS		Environmental Studies	2	2
	IV SBE		Skill Based Elective	2	2
II	I		Tamil	5	3
	II		English	5	3
	III Core Papers		Operating Systems	4	3
			Object Oriented Programming in C++	4	3
	Allied Paper		Discrete Mathematics	4	5
	Core Lab1		Practical III- C++ Programming Lab	2	1
	Core Lab2		Practical IV -Visual Basic Lab	2	1
	IV VAE		Value Education	2	2
	IV SBE		Skill Based Elective	2	2
III	I		Tamil	5	3
	II		English	5	3
	III Core Papers		Fundamentals of Data Structure using C++	4	3
			Multimedia	4	3
	Allied Paper		Numerical Methods	4	5
	Core Lab 1		Practical V- Data Structure Implementation in C++	2	1
	Core Lab 2		Practical VI – Multimedia Lab	2	1
	IV NME		Non-Major Elective **(Web Technologies)**	2	2
	IV SBE		Skill Based Elective	2	2

Semester	Part Code	Subject Code	Title of the Paper	Teaching	
				Hours	Credits
IV	**I**		Tamil	5	3
	II		English	5	3
	III Core Papers		Data Base Management System	4	3
			Java Programming	4	3
	Allied Paper		Operation Research	4	5
	Core Lab1		Practical –VII Oracle Programming Lab	2	1
	Core Lab2		Practical – VIII Java Programming Lab	2	1
	IV NME		Non-Major Elective **(Oracle)**	2	2
	IV SBE		Skill Based Elective	2	2
V	**III Core Papers**		Computer Networks	5	5
			Web Technologies	4	3
			J2EE	5	3
	Core Lab1		Practical – IX Linux Lab	5	3
	Core Lab2		Practical – X Web Technologies Lab	5	3
	Elective I		Software engineering	4	4
	IV SBE		Skill Based Elective	2	2
VI	**III Core Papers**		PHP **(Hyper Text Preprocessor)**	5	3
			TCP/IP Programming	5	4
			Programming in .Net	5	4
	Core Lab1		Practical XI – PHP **(Hyper Text Pre Processor)** Lab	4	3
	Core Lab2		Practical XII - .Net Technologies Lab	4	3
	Elective II		Mobile Computing	5	5
	IV SBE		Skill Based Elective	2	2
	V		PE/NCC/NSS/EXT	--	1
Total				**180**	**140**

Department of Computer Science

Yadava College (Autonomous)

(Re – Accredited with "A" Grade by NAAC)

CHOICE BASED CREDITS SYSTEM SYLLABUS PLAN (2015 – 2018)

Under Graduate Programme

Part	No.of.Papers	Hours	Credits
I	4	20	12
II	4	20	12
III Core Papers	Digital Principles and Computer Organization	4	3
	Programming in C	4	3
	Operating Systems	4	3
	Object Oriented Programming in C++	4	3
	Fundamentals of Data Structure Using C++	4	3
	Multimedia	4	3
	Data Base Management System	4	3
	Java Programming	4	3
	Computer Networks	5	5
	Web Technologies	4	3
	J2EE	5	3
	PHP **(Hyper Text Pre Processor)**	5	3
	TCP / IP Programming	5	4
	Programming in .Net	5	4
Core Lab	Programming in C lab	2	1
	MS – Office Lab	2	1
	C++ Programming Lab	2	1
	Visual Basic Lab	2	1
	Data Structure Implementation in C++	2	1
	Multimedia Lab	2	1
	Oracle Programming Lab	2	1
	Java Programming Lab	2	1
	Linux Lab	5	3
	Web Technologies Lab	5	3
	PHP **(Hyper Text Pre Processor)** Lab	4	3
	.Net Technologies Lab	4	3
Elective I	Software Engineering	4	4
Elective II	Mobile Computing	5	5
Allied Papers	Statistics	4	5
	Discrete Mathematics	4	5
	Numerical Methods	4	5
	Operation Research	4	5
IV	ENS	2	2
	SBE	12	12
	VAE	2	2
	NME	4	4
V	PE/NCC/NSS/EXT	--	1

YADAVA COLLEGE (AUTONOMOUS) MADURAI – 14

BLUE PRINT OF THE CHOICE BASED CREDITS SYSTEM DISTRIBUTION OF NUMBER OF PAPERS (NO), HOURS (HR), AND CREDITS (CR)

UG COURSE

B.Sc COMPUTER SCIENCE

Subject		**Semester I**			**Semester II**			**Semester III**			**Semester IV**			**Semester V**			**Semester VI**			**Total Credits**
		No	**Hr**	**Cr**	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**	
Part I	Tamil	1	5	3	1	5	3	1	5	3	1	5	3	--	--	--	--	--	--	**12**
Part II	English	1	5	3	1	5	3	1	5	3	1	5	3	--	--	--	--	--	--	**12**
Part III	Core	2	12	8	2	12	8	2	12	8	2	12	8	3	24	17	3	23	17	**66**
	Allied I	1	4	5	1	4	5	1	4	5	1	4	5	--	--	--	--	--	--	**20**
	Project/ Elective/ Allied	--	--	--	--	--	--	--	--	--	--	--	--	1	4	4	1	5	5	**09**
Part IV	ENS	1	2	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**02**
	VAE	--	--	--	1	2	2	--	--	--	--	--	--	--	--	--	--	--	--	**02**
	NME	--	--	--	--	--	--	1	2	2	1	2	2	--	--	--	--	--	--	**04**
	SBE	1	2	2	1	2	2	1	2	2	1	2	2	1	2	2	1	2	2	**12**
Part V	PE/NCC/ NSS/ EXT	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	**01**
Total Papers and Hours per Semester		--	30	--	--	30	--	--	30	--	--	30	--	--	30	--	--	30	--	**140**
Self Study Paper Extra Credits		--	--	--	--	--	--	--	--	3	--	--	3	--	--	3	--	--	3	**12**
Total																				**152**

CORE PAPER I

DIGITAL PRINCIPLES and COMPUTER ORGANIZATION

Semester	**: I**	**Hours of Teaching**	**: 4**
Subject Code	**:**	**Credits**	**: 3**

Objectives

- ✓ To enable the students to understand Law's and Theorem's applied in Circuit analysis and design.
- ✓ Types of Registers, counters and Timers used in circuits.

UNIT I

Number system-Excess 3code-Gray code-Transistor Inverter- Logic Gates-Boolean algebra-k map simplifications.

UNIT II

Multiplexers- de multiplexers-encoders-decoders-flip flops-jk flip flop-rs flip flop-t flip flop-d flip-flop-shit registers-serial in serial out-serial in parallel out-parallel in serial out-parallel in parallel out.

UNIT III

Functional units - basic operational concepts - bus structures – software – performance - stack and queue.

UNIT IV

Addressing modes - fetching a word from memory - execution of a complete instructions-hardwired control - micro programmed control - DMA.

UNIT V

Introduction to microprocessor: architecture of microprocessor-evolution of microprocessor- 8085 microprocessor programming model- 8085 instruction set-8085 pin function-8085 architecture.

Text book(s)

1. **"Digital circuits and design"** S.Salivahanan& S.Arivazhagan Vikas publications.
2. **"Computer organization"** V. carl hamacher, Zvonko G.vranesic, Sawat G.Zaky, TMH publications.
3. **"Microprocessor Architecture programming and applications with 8085"** Ramesh Gaonkar PRI publications.

Reference book(s)

1. "Digital principles & applications" Albert dave marvinot & Donald p.leach, TMH publications.
2. "Computer Organization and Architecture"William Stalling, PHI publications.

"**Digital circuits and design**" S.Salivahanan& S.Arivazhagan Vikas publications.

UNIT I:	Chapter	1.1, 1.9, 3.3, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.1.7
UNIT II:	Chapter	6.2, 6.4, 6.5, 6.7, 7.2, 7.6, 7.3, 7.5, 7.7, 9.2, 9.2.1 9.2.2, 9.2.3, 9.2.5, 9.2.7

"**Computer organization**" V. carl hamacher, Zvonko G.vranesic, Sawat G.Zaky,TMH publications.

UNIT III:	Chapter	1.2, 1.3, 1.4, 1.5, 1.6, 2.8
UNIT IV:	Chapter	2.5, 7.1.3, 7.2, 7.4, 7.5, 4.4

"**Microprocessor Architecture programming and applications with 8085**"Ramesh Gaonkar PRI publications.

UNIT V:	Chapter	1.1, 2.1.2, 2.2, 4.1.1, 4.1.5

PAPER II

PROGRAMMING IN C

Semester	**: I**	**Hours of Teaching**	**: 4**
Subject Code	**:**	**Credits**	**: 3**

UNIT I

Overview of C: Introduction-Importance of C-Basic structures of C Programs Programming Style. **Constants-Variables and Data Types:** Character set-C Tokens-Keywords and Identifiers-Constants-Variables-Data types-Declaration of Variables-Defining Symbolic Constants.

Operators and Expressions: Arithmetic Operators-Relational Operators-Logical Operators-Assignment Operators-Increment and Decrement Operators-Conditional Operator-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 Input and Output Operators: Reading a Character-Writing a Character-Formatted Input-Formatted Output. **Decision Making and Branching:** Decision Making with if statement-Simple if statement-IF-ELSE statement-Nesting of IF –ELSE statements-ELSE-IF Ladder-Switch statement - ?: operator **Decision Making and Looping:** While statement-The DO statement-The For statement-Jump in Loops.

UNIT III

Arrays: One-Dimensional Arrays-Two Dimensional Arrays-Initializing Two Dimensional Arrays-Multidimensional Arrays. **User – Defined Functions:** Need for User-Defined Functions-A Multi-Function Program-The Form of C Functions-Return Values and their Types-Calling a Functions-Category of Functions-No Arguments and No Return Values-Arguments But No Return Values-Arguments with Return values-Handling of Non-Integer Functions-Nesting of Functions – Recursion-Functions with Arrays-The Scope and Lifetime of Variables in Functions-ANSI C Functions.

UNIT IV

Structures and Unions: Structure Definition-Giving values to Members-Structure Initialization - Comparison of Structure variables-Arrays of Structures-Arrays within Structures-Structures within Structures – Structures and Functions-Unions-Size of Structures-Bit Fields.

Pointers: Understanding Pointers-Accessing the address of a variable-Declaring and initializing Pointers-Accessing a variable through its Pointer- Pointer expressions- Pointer increments and Scale factor- Pointers and Arrays- Pointers and Character Strings- Pointers and Functions- Pointers and Structures- Points on Pointers.

UNIT V

File Management in C: Defining and opening a File-Closing a File- Input / Output operations on Files-Error handling during I/O operations-Random Access to Files-Command Line Arguments. **Dynamic Memory Allocation-Preprocessor:** Macro substitution-File inclusion-Compiler control directives.

Text Book(s)

1. ***"Programming in ANSI C" E.Balagurusamy, Tata*** *McGraw Hill Publishing Company-2002.*

Reference Book(s)

1. **"Programming with C"** Byron Gottfried, Tata McGraw Hill Publishing Company

"Programming in ANSI C" E.Balagurusamy, Tata *McGraw Hill Publishing Company-2002.*

UNIT I	Chapter	1.2, 1.8, 1.9, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.11
		3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.14, 3.15, 3.16
UNIT II	Chapter	4.2, 4.3, 4.4, 4.5, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 6.2 6.3, 6.4, 6.5
UNIT III	Chapter	7.2, 7.5, 7.6, 7.7, 9.2, 9.3, 9.6, 9.7, 9.9, 9.10, 9.11, 9.12 9.15, 9.16, 9.17, 9.19
UNIT IV	Chapter	10.2, 10.5, 10.6, 10.8, 10.10, 10.11, 10.12, 10.13, 10.14 11.2, 11.3, 11.4, 11.6, 11.8, 11.9, 11.10, 11.11, 11.13, 11.16
UNIT V	Chapter	12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 14.2, 14.3, 14.4

PRACTICAL I

PROGRAMMING IN C LAB

Semester : I	**Hours of Teaching : 2**
Subject Code :	**Credits : 1**

1. Write a C program to find Sine Series.

2. Write a C program to find Fibonacci series.

3. Write a C program to find Prime number.

4. Write a C program to sort an Array.

5. Write a C program to search an element.

6. Write a C program to find Adam number.

7. Write a C program to find sum of digits.

8. Write a C program to find Factorial value, Fibonacci, GCD Value (Recursion).

9. Write a C program to find Matrix Addition.

10. Write a C program to find Transpose of a Matrix.

11. Write a C program to find Character day of a week-Switch.

12. Write a C program to find Quadratic Equation-Switch.

13. Write a C program to find Frequency of a number-Function.

14. Write a C program to find NCR Value- Function.

15. Write a C program to find Pay Bill.

16. Write a C program to find Mark sheet.

17. Write a C program to find EB Bill.

PRACTICAL II
MS – OFFICE LAB

Semester	**: I**	**Hours of Teaching**	**: 2**
Subject Code	**:**	**Credits**	**: 1**

I. MS-WORD

1. Open MS word by a double click on the MS word icon on the desktop.

2. In the WORD window which is displayed, type out the title page of your office automation book.

3. a. Center each line.
   b. Choose appropriate Font size in each line.
   c. Choose Font type where needed for a letter display.

4. Draw Border lines.

5. Use Color options as your feel Appropriate.

6. Open MS WORD by a double click on the MS WORD icon on the desktop.

7. Type a circular letter to be posted to B.Sc., Computer Science Candidates to attend Viva-Voce.

8. Choose Suitable Font type and font size.

II. MS-EXCEL

1. **Sorting Data**

Create the following Worksheet in Excel:

Sno	Regno	Name	Age	Eng	Tam	Mat	Tot	Ave	Res
1	121	Ram	20	45	40	53			
2	153	Raj	19	50	52	63			
3	110	Balu	21	87	76	62			
4	140	Suresh	22	38	60	65			
5	109	Mary	23	71	20	84			

a. Fill the tot column.
b. Fill the ave column.
c. Replace the Res with PASS for Ave>=50 Else Fail.
d. Format Ave column with 2 decimals.
e. Sort this list by Regno.
f. Sort this list first by name then by Age.
g. Find the MAXIMUM mark for each subject.
h. Find the Minimum mark for each subject.

2. **Filtering Data**

Create the following Worksheet in EXCEL

Sno	**Regno**	**Name**	**Age**	**Eng**	**Tam**	**Mat**	**Tot**
1	123	Ram	20	45	40	53	
2	124	Raj	19	47	85	98	
3	125	Kannan	25	87	57	68	
4	126	Mary	22	58	78	48	
5	127	Suresh	24	58	75	98	

a. FILL TOTAL column.
b. Filter the Candidates whose Regno>=124.
c. Filter the Candidates whose Name=”Suresh”.
d. Filter the Candidates whose Eng>60.

3. **Data Analysis Using Cross-Tabulation (Data Tables)**

	A	B	C	D	E	F
1	Sales	Cost	Profit			
2	150	90	=A2-B2			
3	Data	Table (What-If Analysis)				
4	Cost	Sales				
5		125	130	135	140	145
6	100					
7	120					
8	125					
9	160					

Fill the TABLE by using DATA TABLE command

4. **Presentation Graphics**

Create the following Work Sheet in EXCEL

	A	B	C
		AMOUNT IN CRORES	
	YEAR	SALES	EXPERIENCE
1	1990	20	9
2	1991	25	12
3	1992	35	18
4	1993	42	25

a) Draw the Graph and mention the Approach Heading
b) Experiment with other types of graphs by changing your selections
c) Include more columns with data values and create different types of graphs.

MS-ACCESS

1. **Create ADDRESS table with following Fields**

FIELDNAME	DATA	TYPE
Name	Text	
Age	Number	
Sex	Text	
Street	Text	
City	Text	
Pin code	Number	

Add 10 Records

a. Display the fields Name, Street alone on the Screen
b. Display the records for Age>20
c. Display the records for Age<20 and City=”Chennai”
d. SORT the table in the ascending order of Name

2. **Create STUDENT table with the following fields**

FIELDNAME	DATA	TYPE
Regno	Number	
Name	Text	
Sex	Text	
Age	Number	
Degree	Text	
Percentage	Number	

Add Some Records

a. Display the records for Sex =”M” and Degree =”MCA”
b. Display the records for Sex =”F” and Percentage Between 70 and 80
c. Display the records for Degree = “MCA” and Name LIKE “M”
d. SORT the table in the DESCENDING order of Percentage

3. **Create SALES table with the following fields**

FIELDNAME	TYPE
Name	Text
Sex	Text
Sales Code	Number
Sale Amount	Number

Add Some Record Using FORMS

a. Display the records for Sale Amount >5000 and sex = “M”
b. Display the records for Sex = “F” and Sale Amount BETWEEN 5000 and 10000
c. Display the records for Sale Amount <=5000
d. SORT the table in the DESCENDING order of Sale Amount

4. **Create Library table with the following fields**

FIELDNAME	**TYPE**
Book Number	Number
Title	Text
Author	Text
Price	Number
Publisher	Text
Branch	Text

a. Display the records for title=" Office Automation" and Author LIKE "M*"
b. Display the records for Book Number = 500 Branch ="CS"
c. Display the records for Publisher = "PHI" OR publisher="BPB" and Price BETWEEN 300 and 900
d. SORT the table in ASCENDING order of Book Number

MS-POWER POINT

1. Write a power point programme to inserting clip arts and pictures
2. Frame movement of the above
3. Insertion of new slides
4. Preparation of organization charts
5. Usage of design templates

ALLIED PAPER I

STATISTICS

Semester	**: I**	**Hours of Teaching**	**: 4**
Subject Code	**:**	**Credits**	**: 5**

UNIT I

Curve fitting – Principles of Least Squares – Fitting Straight line. A Second Degree Parabola – Fitting curves of the exponent form.

UNIT II

Correlation – Rank Correlation – Regression – Correlation Coefficient for a bivariate, Frequency Distribution function.

UNIT III

Random variable – Distribution Function – Properties of Distribution Function – Discrete Random Variable – Probability Mass Function – Discrete Distribution Function – Continuous Random Variable – Probability Density Function – Various Measures of Central Tendency, Dispersion, Skew ness and Kurtosis for Continuous for Continuous Probability Distribution.

UNIT IV

Mathematical Exception – Addition Theorem – Multiplication Theorem – Co variance – Linear Combination of Random Variable – Variance of a Linear Combination of Random Variable – Expectation of Continuous Random Variable – Condition Expectation and Conditional Variance.

UNIT V

Index numbers – Aggregate – Average of Price Relative – Weighted Index Number – Weighted Average of Price Relative – Cost of Living Index Number – Conversion of CBI to FBI.

Text Book(s)

1. *"Mathematical Statistics", Kapoor & Saxena, S.Chand & Sons, NewDelhi.*

Reference Book(s)

1. *"Statistics", Arumugam & Isaac, New Gamma Publishing House, Palayamkottai.*
2. *"Statistics", S.P.Gupta, S.Chand & Sons*
3. *"Introduction to Mathematical Statistics", Robert.V, Hogg &Allen T.Craig, Collier, Macmillan International Edition.*

"Statistics", *Dr.S.Arumugam & A.Thangapandi.*

UNIT I	Page No:	95 TO 105
UNIT II	Page No:	106 TO 154
UNIT III	Page No:	304 TO 319
UNIT IV	Page No:	319 TO 342
UNIT V	Page No:	229 TO 257

CORE PAPER III
OPERATING SYSTEMS

Semester : II	**Hours of Teaching : 4**
Subject Code :	**Credits : 3**

UNIT I

INTRODUCATION: What is Operating system - Early history 1940's and 1950's – the 1960's – the 1980's – 1990's and beyond – distributed computing – parallel computing.

HARDWARE, SOFTWARE, FIRMWARE: Hardware – Software - Firmware

UNIT II

PROCESS: The process concepts-The process states-Process state transition- PCB-Operation on process-Suspend and resume-Interrupt processing-The Nucleus of operating system

UNIT III

ASYNCHRONOUS CONCURRENT PROCESS: mutual Exclusion-critical sections-mutual exclusion primitives-Implementing Mutual Exclusive primitives-Dekker's Algorithm-Peterson's algorithm.

UNIT IV

DEADLOCK AND INDEFINITE POSTPONEMENT: Examples of deadlock-indefinite postponement-resource concepts-Four necessary conditions for deadlock-deadlock prevention-deadlock deduction and Banker's algorithm-deadlock detection and recovery.

UNIT V

STORAGE MANAGEMENT: Real storage-storage organization-storage management-virtual storage management-Basic concepts-Multilevel storage organization-paging segmentation-Scheduling concepts-Deadline scheduling.

Text Book(s)

1. **''Operating Systems Principle's and Design"** (UNIT I) Pabitrapal Choudhury.
2. **"Operating System"** *H.M Deitel,* TMH.

Reference Book(s)

1. **"Operating System"** *Stuart E.madinck,john*
2. **"Operating system",** *Graynutt,* Addison Wesley Longman Inc.

"Operating System", *H.M Deitel*, TMH.

UNIT I	Chapter	1.2, 1.3, 1.4, 1.7, 1.8, 1.9, 1.10, 2.2, 2.3, 2.4
UINT II	Chapter	3.2, 3.3, 3.4, 3.5, 3.7, 3.8, 3.9
UNIT III	Chapter	4.4, 4.5, 4.6, 4.7, 4.8, 4.9
UNIT IV	Chapter	6.2, 6.3, 6.4, 6.5, 6.7, 6.8, 6.9, 6.10
UNIT V	Chapter	7.2, 7.3, 8.3, 8.4, 8.6, 8.7, 10.2, 10.8

CORE PAPER IV

OBJECT ORIENTED PROGRAMMING IN C++

Semester	**: II**	**Hours of Teaching**	**: 4**
Subject Code	**:**	**Credits**	**: 3**

Objectives

- To understand the basic concept of object oriented concept
- To become familiar in object oriented programming
- To compare procedure oriented & object oriented programming

UNIT I

Principles of **OOP**: Software Evaluation, oop paradigm, basic concepts of oop, benefits of oop, object oriented languages, application of oop.

Introduction to C++: tokens, keywords, identifiers, variables, operators, manipulators, expressions & Control **Structures in C++.**

UNIT II

Functions in C++: Main function, function prototyping, call by reference, return by reference, function overloading, friend & virtual function..

UNIT III

Classes & Objects: Constructors & Destructors, operator overloading & Type Conversion, Templates.

UNIT IV

Inheritance: Single inheritance, multiple inheritances, multilevel inheritance, hybrid inheritance, hierarchical inheritance, pointers, Virtual Function, Polymorphism, Managing Console i/o operation.

UNIT V

Working with Files: classes for file stream operation, opening & closing a file, end_ of _ file.

Text Book(s)

1. "Object Oriented Programming with C++", E. Balagusamy, TMH.

Reference Book(s)

1. "Mastering C++", A.R.Venugopal, Rajkumar, T.Ravishankar, TMH.

"Object Oriented Programming with C++", E. Balagusamy, TMH.

UNIT I	Chapter	1.2, 1.4, 1.5, 1.6, 1.7, 1.8
	Chapter	3.2, 3.3, 3.4, 3.11, 3.12, 3.13, 3.14, 3.18, 3.20, 3.25
UNIT II	Chapter	4.2, 4.3, 4.4, 4.5, 4.10, 4.11
UNIT III	Chapter	5,
	Chapter	6
	Chapter	7
	Chapter	12
UNIT IV	Chapter	8.3, 8.6, 8.5, 8.7, 8.8, 9.2, 9.6
	Chapter	10
UNIT V	Chapter	11.2, 11.3, 11.4

PRACTICAL LAB III

C++ PROGRAMMING LAB

Semester : II	**Hours of Teaching : 2**
Subject Code :	**Credits : 1**

1. Simple C++ program using class
2. Write a C++ Program to implement inheritance & virtual function
3. Write a C++ Program to implement multiple inheritance
4. Write a C++ Program to implement multilevel inheritance
5. Write a C++ Program to implement hybrid inheritance
6. Write a C++ Program to implement hierarchical inheritance
7. Write a C++ Program to implement operator overloading (+,*,/,-)
8. Write a C++ Program to implement '++' operator to overload
9. Write a C++ Program to implement friend function
10. Write a C++ Program to implement constructor & destructor
11. Write a C++ Program to implement function overloading
12. Write a C++ Program to Process student's mark list using file
13. Write a C++ Program to Process library maintenance using file
14. Write a C++ Program to implement matrix addition using operator overloading
15. Write a C++ Program to implement matrix multiplication using operator overloading

PRACTICAL LAB IV

VISUAL BASIC LAB

Semester : II	**Hours of Teaching : 2**
Subject Code :	**Credits : 1**

1. Program to check whether the given number
    a. Armstrong Number
    b. Adam Number
2. Program to program
    a. Reverse the String
    b. Calculate the Length of the String
3. Program the find
    a. Current Date and Time
    b. Day of given Date
4. Program to use the flex grid control
5. Program to draw geometric shapes
6. Program to design a digital clock
7. Object type questionnaire
8. Program to vary color palette
9. Program to show picture animation
10. Program to create a file open dialogue to load a picture
11. Program to design a arithmetic calculator
12. Program to create a mouse down event program
13. Menu creation with simple file and edit operation
14. Sequential file reading and writing
15. Process student’s mark list using data control
16. Process library maintenance using data control
17. Process telephone billing using data control
18. Process stock inventory using data control

ALLIED PAPER II

DISCRETE MATHEMATICS

Semester : II	**Hours of Teaching : 4**
Subject Code :	**Credits : 5**

Objectives

To enable the students to understand the concept of logic format languages, lattice
And algebra

UNIT I

Set Theory: Introduction – Sets – Notation and description of sets – Subsets – Venn – Euler diagram – Operation on sets – Properties of set operation – Verification of the basic laws of algebra by Venn diagram – The principal of duality

UNIT II

Logic : Introduction – TF statement-Connectives-Atomic and compound statement – well formed formula – Truth table of a formula – Tautology implication and equivalence of formula – Replacement process

UNIT III

Lattices : Some properties of lattices – New lattice – Modular and distributive – lattices – Boolean algebra

UNIT IV

Introduction – Matrix operations – Inverse of a Square Matrix – Elementary Operations and Rank of a Matrix – Simultaneous Equations – Eigen values and Eigen Vectors.

UNIT V

Four classes of grammars (Phrase structure, context sensitive, context free, regular) – Context free language – Generation tree – ambiguity – FSA – NDFSA – Conversion of NDFSA to DFSA.

Text Book(s)

1. *"Discrete Mathematics", M.K.Venkata Raman, N.Sridharan, N.Chandra sekaran, National Publishing Company, Chennai.*

CORE PAPER V

FUNDAMENTALS OF DATA STRUCTURE USING C++

Semester : III	**Hours of Teaching : 4**
Subject Code :	**Credits : 3**

UNIT I

Overview: System Life Cycle – Object Oriented Design – Algorithm Specification – ADTs and C++ Classes – Array as an Abstract Data Type – The Polynomial Abstract Data Type – Sparse Matrices – String Abstract Data type

UNIT II

Stacks and Queues: Templates in C++ - Stack Abstract Data Type – Queue Abstract Data – A Mazing Problem – Evaluation of Expression – Multiple Stacks and Queues

UNIT III

Linked Lists: Single Linked Lists – Representing Lists in C++ - A Reusable Linked List Class – Circular Lists – Linked Stacks and Linked Queues – Double Linked Lists – Heterogeneous Lists

UNIT IV

Trees: Introduction – Binary Trees – Binary Tree Traversal and Tree Iterates – Additional Binary Tree Operations – Threaded Binary Trees – Binary Search Trees – Forests – An Object Oriented System of Data Structures – Counting Binary Trees.

UNIT V

Graphs: The Graph Abstract Data Type – Elementary Graph Operations – Minimum Cost Spanning Trees – Shortest Path and Transitive Closure

Text Book(s)

1. *Ellis Horowitz, Sartaj Sahini, "Fundamentals of Data Structures using C++"Galgotia Book Source Publishers, Latest Edition*

Reference Book(s)

1. *Aaron M.Tennenbaum, Yedidy langsam, Moshe j.Augenstein, "Data Structure Using C", Prentice Hall of India Latest Edition*
2. *Seynour Lipschutz, "Theory and Problems of Data Structures", Shaum's Series, Tata McGraw hill Publishing Company, Latest Edition.*

Ellis Horowitz, Sartaj Sahini, "Fundamentals of Data Structures using C++"Galgotia Book Source Publishers, Latest Edition

UNIT I	Chapter	1.1, 1.2, 1.5, 2.1, 2.2, 2.3, 2.4, 2.6
UNIT II	Chapter	3.1, 3.2, 3.3, 3.5, 3.6, 3.7
UNIT III	Chapter	4.1, 4.2, 4.3, 4.4, 4.5, 4.9, 4.12
UNIT IV	Chapter	5.1, 5.2, 5.3, 5.4, 5.5, 5.7, 5.9, 5.11, 5.12
UNIT V	Chapter	6.1, 6.2, 6.3, 6.4

CORE PAPER VI

MULTIMEDIA

Semester	**: III**	**Hours of Teaching**	**: 4**
Subject Code	**:**	**Credits**	**: 3**

UNIT I

Introduction: Objectives – Brief History of Multimedia – What is Multimedia? – the Multimedia market.

Resource for Multimedia Developers: Magazines and periodicals – vendors and trade shows – Internet – Education – Experience – Critical Attitude.

Products and Evaluation

The Multimedia Development Team: Assembling a Multimedia Production Team

UNIT II

Hardware, Operating Systems and Soft wares

UNIT III

Graphics: Digital Audios:

UNIT IV

Digital Video and Animation: Authoring Tools:

UNIT V

Flash 5.0: Understanding the flash Frame Work – Exploring the Interface – Using Tools Naai of Action and Viewing Drawing in Flash – Animation in Flash – Using Bit Maps and others Media with Flash

Text Book(s)

1. **"Multimedia Technology and Applications"**, *David Hillman, Galgotia Publications pvt Ltd.*
2. ***Flash 5 Bible****, Robert Reinhar & and Jon Warrer Lantz*

Reference Book(s)

1. **"Multimedia making it work",** Tay Vaughan, Osborne, Mc Graw Hill.

"Multimedia Technology and Applications", *David Hillman, Galgotia Publications pvt Ltd.*

UNIT I	Chapter	1
	Chapter	2
UNIT II	Chapter	3
UNIT III	Chapter	5
	Chapter	6
UNIT IV	Chapter	7
	Chapter	9

Flash 5 Bible, *Robert Reinhar & and Jon Warrer Lantz*

UNIT V	Chapter	1
	Chapter	2
	Chapter	3
	Chapter	11
	Chapter	12

PRACTICAL LAB V

DATASTRUCTURE IMPLEMENTATION IN C++

Semester : III	**Hours of Teaching : 2**
Subject Code :	**Credits : 1**

Objectives:

- **To implement the different data structures in C++**

1. Write a C++ Program to create singly linked List
2. Write a C++ Program to ADD, DELETE Elements from singly Linked List
3. Write a C++ Program to create Doubly linked List
4. Write a C++ Program to ADD, DELETE, Elements from Doubly Linked List
5. Write a C++ Program to create circular Linked List
6. Write a C++ Program to ADD, DELETE, Elements in Circular Linked List
7. Write a C++ Program to create Stack using Pointer
8. Write a C++ Program to implement Stack operations
9. Write a C++ Program to create Queue using pointer
10. Write a C++ Program to implement Queue Operations
11. Write a C++ Program to implement Various Tree Traversal using Pointer
12. Write a C++ Program to perform Linear Searching and Binary Searching of Numbers and Strings
13. Write a C++ Program to perform Sorting (Bubble, Insertion, and Selection) Techniques of numbers, character values and String.

PRACTICAL LAB VI

MULTIMEDIA LAB

Semester : III **Hours of Teaching : 2**
Subject Code : **Credits : 1**

1. Bit map to vector conversion
2. Quick and easy picture animation
3. Creating easy tint effect
4. Zooming a picture in and out
5. Changing a color of circle
6. Converting a shapes
7. Picture masking
8. Creating a text animation
9. Image rotation
10. Creating Inverse text effect
11. Changing color image to black and white
12. Text masking
13. Creating clip as countdown
14. Glowing effect for text
15. Stretching a text
16. Character transformation
17. Stretching a object
18. Greeting card preparation
19. Jumping letters animation
20. Ball bouncing
21. Shape tweening effect
22. Motion tweening effect
23. Adding a shape hint in shape tween
24. Creating onion skin outline
25. Creating and integrating scenes

ALLIED PAPER III
NUMERICAL METHODS

Semester	**: III**	**Hours of Teaching**	**: 4**
Subject Code	**:**	**Credits**	**: 5**

UNIT I

Solution of simultaneous linear algebraic equation system by Gaussian elimination and Gauss-Jordon methods-Iterative methods: Gauss Jacobi and Gauss-Seidel methods-Inverse of a matrix by Gauss Jordon method.

UNIT II

Lagrangian Polynomials – interpolation - Divided differences-Finite differences, Forward Backward and Central differences - Newtons forward and backward - Stiriling formula.

UNIT III

Numerical differciations - Newtons intergration - Trapezoidel rule- Simons 1/3 rule-Simsons 3/8 rule and Introduction of errors in integration.

UNIT IV

Single step methods: Taylor series method for first order differential equation - Euler and modified Euler methods - Runge- Kutta method for solving first order differential equations.

UNIT V

Types of interactive method – Bisection method - False position method - Newton rapshon method - The method of successive approximation.

Text Book(s)

1. *"Numerical Methods" by Kandasamy,P., Thilagavathy, K. and Gunavathy,K.S. Chand Co.Ltd., New Delhi.*
2. *"Numerical Methods" by S.Arumugam and Thangapandi Issac and Somasundaram, Scitech publication, Chennai.*

"Numerical Methods" by Kandasamy,P., Thilagavathy, K. and Gunavathy,K.S. Chand Co.Ltd., New Delhi.

UNIT I	Page No:	112 TO 132
	Page No:	146 TO 158
UNIT II	Page No:	257 TO 280
UNIT III	Page No:	299 TO 321
UNIT IV	Page No:	352 TO 362
	Page No:	371 TO 395
UNIT V	Page No:	529 TO 540
		542 TO 550

NON MAJOR ELECTIVE I

WEB TECHNOLOGIES

Semester : III	**Hours of Teaching : 2**
Subject Code :	**Credits : 2**

Objectives

- To enable the students. Explain the importance of internet and web designing.
- To become familiar with internet, HTML, DHTML and XML

UNIT I

Introduction to the Internet: Computers in Business-Networking-Internet-Email-Resource Sharing-Gopher-WWW-Usenet-Telnet-Bulletin Board Service-Wide Area Information Service.

UNIT II

Internet Technologies - Modem-Internet Addressing-Physical Connection-Telephone Lines. Internet Browsers-Internet Explorer-Netscape Navigator.

UNIT III

Introduction to HTML: Designing a home page-History of HTML- HTML Generation-HTML Document-Anchor Tag-Hyper Links-Sample HTML Documents. Head and Body Section: Header Section-Title-Prologue-Links-Colorful Web Page-Comment Lines.

UNIT IV

Designing the body section: Heading Printing-Aligning the Heading-Horizontal Rules-Paragraph-Tab Setting-mages and Pictures.

Embedding-PNG Format Images. Ordered and Unordered Lists: Unordered Lists-Heading in a List-Ordered Lists-Nested List.

UNIT V

Table Handling Tables-Table Creation in HTML-Width of the Table and cells-Cells Spanning Multiple Rows/Columns-Coloring Cells-Column Specification.

Text Book(s)

1. "World Wide Web Design with HTML", C.Xavier, TMH

CORE PAPER VII
DATA BASE MANAGEMENT SYSTEM

Semester : IV	**Hours of Teaching : 4**
Subject Code :	**Credits : 3**

UNIT I

Introduction to Database Management Systems (DBMS): Introduction – Characteristics of Data in a Database – Database Management System – Types of Database Management Systems.

Data Information and Information Processing: Introduction – Quality of Information – Information Processing.

Database Architecture and Data Modeling: Conceptual, Physical and Logical Database Models, Database Design, Data Constraints.

UNIT II

Entity-Relationship (E-R) Modeling: E-R Model – Components of an E-R Model – E-R Modeling Symbols.

Query Processing and Optimization: Query Processing – Cost-Based & Rule-Based Optimization – Overview of Optimizer Operations – Access Paths

UNIT III

Data Base Security: Data Security Risks – Data Base Users – Protecting Data with Data Base – Data Encryption – Network Security – Security Auditing

Transaction Management and Concurrency Control: Transactions – Transaction Properties – Transaction States – Concurrency Control – Serializability – Recoverability – Commit-Rollback-Save point

UNIT IV

Backup and Recovery: Data base Backups – Transaction Logs – Data base Recovery – Causes of failures – Recovery Techniques

Distributed Data base: Client / Server Database Architecture - Database Links – Transaction Processing in Distributed Transactions – Functions of Distributed DBMS – Advantages & Disadvantages of Distributed Systems

UNIT V

Parallel Processing and Parallel Database: Parallel Databases – Benefits of Parallel Processing – Benefits of Parallel Databases.

Mobile Databases: Mobile Databases – Mobile Database Processing – Technology Requirements.

Text Book(s):

1. ***"****Database Management systems", Alex Leon and Mathews Leon, Vikas Publishing House*
2. ***"****Database System Concepts", Abraham Silberschatz, Henry F. Korth and S.Sudarshan McGraw-Hill*

Reference Book(s):

1. ***"****Fundamental Database Systems", Ramez Elmasri, Shamkani B.Navathe, Pearson Education*
2. *Raghu Ramakrishnan, "Database Management System, TMH Publishing*

“*Database Management systems”, Alex Leon and Mathews Leon, Vikas Publishing House*

UNIT I	Chapter 5
	Chapter 1
	Chapter 8
UNIT II	Chapter 9
	Chapter 26
UNIT III	Chapter 27
	Chapter 29
UNIT IV	Chapter 30
	Chapter 33
UNIT V	Chapter 35
	Chapter 37

CORE PAPER VIII

JAVA PROGRAMMING

Semester : IV	**Hours of Teaching : 4**
Subject Code :	**Credits : 3**

UNIT I

Fundamentals of OOP – Java Evaluation – Features, comparison between C and C++ - Java and Internet – WWW – Web browsers – Hardware and Software requirements – support systems – Java Environment – JDK, JVM, API, IDE.

Overview of Java Language – constants – variables Data types – Tokens – Simple Java Program – Structure – Implementing Java Program.

UNIT II

Operators and Expressions: Arithmetic operators – Relational, logical, Assignment, Increment / Decrement, Conditional, Bit-wise, Special operators – Arithmetic expressions, Evaluation of expressions – Precedence of Arithmetic Operators – Type conversions – Operator Precedence and associatively – Mathematical functions.

Selection and iteration – IF – if-else – Nested if-else – else-if ladder – Switch - ?operator – while statement – Do – For – Jumps in loops – Labeled loops

UNIT III

Classes – objects – Methods – Defining a Class – Adding methods, variables – creating objects – Ascending class members – Constructors methods overloading – Static members – Nesting of methods – inheritance – Overriding method – Find variables and methods – Final classes – Finalize methods – Abstract methods and classes – Visibility control.

Arrays, Strings and Vectors: Arrays – ID and multidimensional Array – Copying an array – String – String buffer – Vectors – Wrapper classes

Interfaces Multiple Inheritance: Defining interfaces – Extending interfaces – implementing interfaces – Accessing interface variables – lone () and equals () methods

UNIT IV

Packages: System packages – Definition – using system packages – Naming conventions – creating packages – Accessing a Package – using a package – Adding a class to a package – Binding classes.

Multithreaded Programming: Thread definition – creating threads – extending thread class – stopping and locking a thread – lifecycle of a thread – using thread methods – thread exception – thread priority – Synchronization – Implementing the run able interface.

Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax – Catch Statements – finally statement – Throwing our own Exceptions

UNIT V

Utility classes, Applets and Graphics: Utility method – Preparing and building the Applet Code – Applet Life cycle-Creating, Designing a webpage-Applet tag-Adding applet to html file-Running the applet-Passing parameter to applets-Aligning the display-More about HTML tags-Displaying Numerical Values-Getting input from the user.

Graphics class-Lines and rectangle-Circles and Ellipses-Drawing arcs and polygons-Line graphs-Using control loops in Applets-Drawing bar charts.

Text Book(s)

1. *E.Balaguruswamy,"A Primer Programming with Java",TMH Publishing Company Ltd,New Delhi,2002*

Reference Book(s):

1. *Patrick Naughton Herbert Schildt ,"The Complete Reference",3rd edition,1999*
2. *Peter Norton William Stanek,"Guide to Java Programming",1999*
3. *John R.Hubbard,"Programming with Java",Schaum's outlines TMH,1999*

E.Balaguruswamy, ***"A Primer Programming with Java",*** *TMH Publishing Company Ltd,New Delhi,2002*

UNIT I	Chapter	1
	Chapter	2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9
	Chapter	3, 3.6, 3.2, 3.5, 3.9
	Chapter	4.2, 4.3, 4.4
UNIT II	Chapter	5.2, 5.3, 5.4, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15
	Chapter	6.3, 6.4, 6.5, 6.6, 6.7, 6.8
	Chapter	7.2, 7.3, 7.4, 7.5, 7.6
UNIT III	Chapter	8.1, 8.2, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12 8.13, 8.14, 8.15, 8.16, 8.18
	Chapter	9.2, 9.3, 9.4, 9.5, 9.6, 9.7
	Chapter	10
UNIT IV	Chapter	11.1, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9
	Chapter	12.1 TO 12.10
	Chapter	13.1 TO 13.7
UNIT V	Chapter	14.3 TO 14.10, 14.2 TO 14.16
	Chapter	15.2 TO 15.9

PRACTICAL LAB VII

ORACLE PROGRAMMING LAB

Semester : IV **Hours of Teaching : 2**
Subject Code : **Credits : 1**

1. Data Definition Language (DDL) commands is SQL.
2. Data Manipulation Language (DML) and Data Control Language (DCL) commands in SQL.
3. High – level language extension with Cursors.
4. High – level language extension with Triggers.
5. Creating Tables for Different Applications using DDL.
6. Solving Queries – Date Functions, Numeric Functions, Group Functions.
7. Set Operators – Union, Union All, Intersect, Minus.
8. Join Concept – Simple Join, Table Aliases, Self Join, Outer Join, Sub Queries, Multiple Sub queries.
9. Procedures and Functions.
10. Embedded SQL.
11. Database design using E -R model and Normalization.
12. Design and implementation of Payroll Processing System.
13. Design and implementation of Banking System.
14. Design and implementation of Library Information System.
15. Creating PL/SQL block using all the control statements.
16. Creating PL/SQL block using EXPLICIT & IMPLICIT CURSOR.
17. Creating PL/SQL block with error handling techniques (pre-defined & user-defined Exception).
18. Write a PL/SQL Program to Railway Reservation using Report Generation
19. Write a PL/SQL Program to Employee Details using Report Generation
20. Write a PL/SQL Program to Student Information using Report Generation
21. Write a PL/SQL Program to Library Information using Report Generation
22. Write a PL/SQL Program to Admission Information using Report Generation

PRACTICAL LAB VIII

JAVA PROGRAMMING LAB

Semester : IV	**Hours of Teaching : 2**
Subject Code :	**Credits : 1**

1. Arrays and Flow Control Statement
2. Run Time Exception & I / O Exception
3. Multi Threading
4. Layout Management
5. GUI Component (Label, Check box, Menus, Text etc)
6. Event Handling (Focus events, Key events, Paint events, Text events, Mouse events, Windows events)
7. Animations and Images
8. Java Applet
9. Java file Management Method
10. Java Streams
11. JDBC (Java Data Base Connectivity)

OPERATION RESEARCH

Semester : IV **Hours of Teaching : 4**
Subject Code : **Credits : 5**

Objectives

- To enable the students to understand the concept of L.P.P, Dual, Optimization model, queuing model, Game theory

UNIT I

L.P.P – Formulation of L.P.P – Graphical Method – Basic Solution – BFS-Artificial Method – Big-M method – Two Phase Method

UNIT II

Transportation Model – Mathematical Formulation of Transportation Problem – Methods for finding IBFS – NWC – LCM – VAM – MODI method – Degeneracy – Unbalanced – Maximization case in Transportation Problem

UNIT III

Assignment Problem – Mathematical Formulation of Assignment Problem – Comparison with Transportation Model – Difference between Transportation and Assignment Problem – Hungarian Method – Unbalanced Assignment – Maximization case in Assignment – Restriction in Assignment – Traveling Salesman Problem

UNIT IV

Game Theory – 2x2 Game – Maximin – Minimax Principle – Saddle Point and Value of Game – Games without Saddle Point – Arithmetic Method – 2xn-mx2 – Graphical Method – Dominance Property

UNIT V

Scheduling by PERT and CPM – Planning – Scheduling – Control – Basic Terminologies – Rules for Constructing a Project Network – Network Computation – Compute the Latest Finish and Latest Start – Float – Program Evaluation Review Technique – Difference between PERT & CPM

Text Book(s)

1. *"Operation Research", V.K.Kapoor, Sultan Chand & Sons Publishers, Delhi*

Reference Book(s)

1. ***"****Operation Research: An Introduction", Hamdy, A.Taha, Macmillan International Student's Edition, delhi*
2. *"Operation Research",Kanti Swarup, R.K.Gupta and Manmohan, Sultan Chand and Sons,Delhi*

"Research Management Techniques", *V.Sundaresan, K.S. Ganapathy Subramanian, K.Ganesan*

UNIT I	Chapter	2.1 - 2.41
	Chapter	3.1 - 3.74
UNIT II	Chapter	7.1 - 7.64
UNIT III	Chapter	8.1 - 8.49
UNIT IV	Chapter	15.24 -15.46
UNIT V	Chapter	16.1 - 16.39

NON MAJOR ELECTIVE II

ORACLE

Semester : IV	**Hours of Teaching : 2**
Subject Code :	**Credits : 2**

UNIT I

The Basic parts of speech in SQL: Style-Using SQL to select Data from tables –Tables – Select from where, and order by – logic and value – Like – another use for where – Sub queries – Combining tables – Creating a view.

UNIT II

Getting Text information and changing it: Data types – What is string – Notation – Concatenation – How to cut and paste strings – RPAD and LPAD – LTRIM and RTRIM – Combining Two functions – Adding one more function – LOWER,UPPER and INITCAP – LENGTH –SUBSTR – INSTR – Order by and where with string functions – SOUNDEX – National language support.

UNIT III

Playing the numbers: The three classes of number functions – Notation – Single value functions – Group value functions – List functions.

UNIT IV

Dates: Date Arithmetic – Sys Date – The Difference between Two dates – Adding months – Next Day – Round and Trunc in Date calculations To – Date and To – CHAR formatting – Dates in where clauses – Dealing with the year 2000.

UNIT V

Changing Data: Insert, Update and delete – insert – inserting a Time – roll back, commit, and auto commit – Implicit commit – delete – update.

Text Book

1. ***"ORACLE 8.0",*** *The Complete reference, George Koch, Kevin Looney, TMH.*

CORE PAPER IX

COMPUTER NETWORKS

Semester	**: V**	**Hours of Teaching**	**: 5**
Subject Code	**:**	**Credits**	**: 5**

UNIT I

Introduction: Uses of computer networks-Network hardware-Network Software-Example Networks-OSI Reference model.

Physical Layer: Guided transmission media-Wireless Transmission-Communication Satellites-The telephone system-multiplexing.

UNIT II

Data link layer: Data link layer design issues-Error detection and correction-Elementary Data Link Protocols-Sliding window protocols-Channel Allocation problem.

Network layer: Network layer design issues-Routing algorithms: (i) Flooding-(ii) Distance Vector-Shortest path-Hierarchical-Broadcast

UNIT III

Transport layer: The Transport services-Elements of Transport protocols.

Session layer: Session layer design issues - Synchronization & Token Management.

UNIT IV

Presentation Layer: Presentation Layer design issues-Encryption-Data compression Techniques

Application Layer: Domain Name System (DNS)-Electronic mail-WWW-Multimedia.

UNIT V

Introduction: Security trends – OSI security architecture – Security attacks – security services – security mechanism – a model for network security. **Classical Encryption Techniques:** Symmetric Cipher Model – Substitution Techniques – Transposition Techniques – Rotor Machine – Steganography

Text book(s)

1. *"Computer Networks", A.S.Tanenbaum ,Fifth Edition ,PHI Publication.*
2. *"Data Communications and Networking" Fourth Edition Behrouz A Forouzan*
3. *"Cryptography and Network Security" William Stallings, Fourth Edition,PHI.*

Reference Book(s)

1. ***"****Data Communication and Computer Networks" Prakash C.Gupta, PHI, 2005*
2. ***"****Data and Computer Communications, William Stallings, PHI, 2007*

***"Computer Networks"**, A.S.Tanenbaum, Fifth Edition, PHI Publication.*

UNIT I	Chapter	1.1, 1.2, 1.3, 1.4, 1.5
	Chapter	2.2, 2.3, 2.4, 2.6
	Chapter	6.2.5
UNIT II	Chapter	3.1, 3.2, 3.3, 3.4
	Chapter	4.1
	Chapter	5.1, 5.2.2, 5.2.3, 5.2.4, 5.2.6, 5.2.7
UNIT III	Chapter	6.1, 6.2
	Chapter	1.4.1
UNIT IV	Chapter	7.1, 7.2, 7.3, 7.4

***"Data Communications and Networking"** Fourth Edition Behrouz A Forouzan*

UNIT IV	Chapter	3.2 (Page No: 54 To 55)

***"Cryptography and Network Security",** Stallings*

UNIT V	Chapter	1
	Chapter	2

CORE PAPER X

WEB TECHNOLOGIES

Semester : V	**Hours of Teaching : 4**
Subject Code :	**Credits : 3**

UNIT I

HTML: Introduction – SGML – Outline of html document – Head section – Body section – HTML forms.

DHTML: Introduction – Cascading Style Sheets (CSS) – DHTML Document Object Model and Collection – Event Handling – Filters and Transition – Data Binding.

UNIT II

EXTENSIBLE MARKUP LANGUAGE (XML): Introduction –HTML (vs) XML- syntax of the XML document-XML attributes-XML validation-XML DTD-the building blocks of XML documents-DTD elements-DTD attributes-DTD entities-DTD validation-XSL-XSL transformation-XML name space-XML schema.

UNIT III

VBSCRIPT: Introduction-Embedding VB script Code in an HTML document-Comment - Variables – Operators – Procedures – Conditional statements-looping constructs- objects and VB script cookie.

UNIT IV

ACTIVE SERVER PAGES (ASP): Introduction –Advantages of using ASP-First ASP Script-Processing of Asp Scripts with Forms-Variables and Constructs-Subroutines-Include/Virtual-ASP Cookies-ASP Objects-Connecting to Data with ASP.

UNIT V

ESSENTIAL AJAX: What is Ajax. **CREATING AJAX APPLICATION**: Creating the Java Script-Creating the XML HttpRequestobject. **FULL THROTTLE AJAX:** Try This: Get array.html to work-connecting to google suggest. **USING AJAX FRAMEWORKS:** Posting data and downloading text with the post data download text function- Posting data and downloading text with the post data download XML function. **WORKING WITH CASCADING STYLE SHEETS WITH AJAX:** Styling Text Using CSS-styling colors and background using css-setting Element Location in web pages. **HANDLING DYNAMIC HTML WITH AJAX:** Updating pages with dynamic HTML methods- updating pages with dynamic HTML properties. **INTRODUCING PHP WITH AJAX:** Returning XML to the browser-Storing data in variables-Handling data in PHP Arrays-Using for loops in PHP **PHP IN DEPTH:** Working with html controls in PHP

Text book(S)

1. ‘’**Web Technology**’’ A Developer’s perspective, N.P.Gopalan., J.Akilandeswari, PHI.

UNIT I	Chapter	4
	Chapter	7
UNIT II	Chapter	8
UNIT III	Chapter	6
UNIT IV	Chapter	12

2. ‘’**Ajax**’’ A Beginner’s guide, Stev5en Holzner, TMH.

UNIT IV	Chapter	1	(Page No: 5 To 7)
	Chapter	3	(Page No: 64 To 70)
	Chapter	4	(Page No: 116 To 138)
	Chapter	5	(Page No: 164 To 176)
	Chapter	7	(Page No: 235 To 250)
	Chapter	8	(Page No: 267 To 279)
	Chapter	9	(Page No: 311 To 326, 328 To 335)
	Chapter	10	(Page No: 357 To 382)

CORE PAPER XI

J2EE

Semester : V **Hours of Teaching : 5**
Subject Code : **Credits : 3**

UNIT I

JAVA SCRIPT: Introduction-language Elements-Objects of Java Script-Other Objects.

UNIT II

UNDERSTANDING JAVA SERVER PAGES: overview of JSP technology-architecture of JSP page-understanding JSP page life cycle -JSP elements-JSP expression language.

UNIT III

IMPLEMENTING JAVA SERVER PAGES STANDARD TAG LIBRARY: Introducing JSTL-working with the core tag library-working with the xml tag library-working with the internationalization tag library-working with the sql tag library-working with the functions tag library.

UNIT IV

SERVLET : Introduction-Advantages of Servlet over CGI-Installing Servlet-the Servlet life cycle-Servlet API-A simple Servlet- handling HTTP get request HTTP post request-cookies-session tracking-multi tier application using database connectivity-Servlet chaining.

UNIT V

UNDERSTANDING EJB 3.0: EJB 3.0 fundamentals (architecture and concept)-Implementing session beans-Implementing message driven bean-implementing EJB 3.0 timer service

Text Book(s)

1. **''Web Technology''** A Developer's perspective, N.P.Gopalan., J.Akilandeswari PHI.

UNIT I	Chapter	5
UNIT IV	Chapter	10

2. **''Java server Programming''** Java EE 5, Black Book (J2EE 1.5).

UNIT II	Chapter	7 (Page No: 336 To 347)
UNIT III	Chapter	9
UNIT V	Chapter	13 (Page No: 621 To 627, 635 To 647) (Page No: 650 To 661, 676 To 679)

CORE LAB IX

LINUX LAB

Semester : V **Hours of Teaching : 5**

Subject Code : **Credits : 3**

1. To set the attributes of a given file
2. To log and unlog the terminal using trap
3. To find the number of terminals user logged – in
4. To find the number of users who have logged – in
5. File manipulation operations
6. String manipulations
7. Check the given file is directory or not
8. Create and append a file
9. Replace the vowels with the special characters
10. Compare two files
11. Delete the lines from a file which have a specific word
12. Using awk command and communication command
13. Shell programming using filters: grep, sed
14. Design a script to create your own command
15. Customizing log – in process
16. Signal handling

WEB TECHNOLOGIES LAB

Semester : V **Hours of Teaching : 5**
Subject Code : **Credits : 3**

Objectives

To learn and implement the Scripting languages, design and develop the programs for web – sites

1. Write a HTML program which display “I am studying HTML” in all the heading Levels
2. Write a HTML program that uses the address tag
3. Write a HTML program that displays an image as a hyperlink
4. Write a DHTML code that displays message to the user when the document is loaded in the browser
5. Use the onblur () method on text box and display a message when the textbox loses focus
6. Write a DHTML code that can select or deselect five checkboxes on the click of a button
7. Write a Simple JSP Program
8. Write a JSP program to forwarding.
9. Write a JSP program to Static Inclusion.
10. Write a JSP program to Dynamic Inclusion.
11. Write a JSP program for server side and client side forwarding.
12. Write a JSP program for calling JSP form Servlet.
13. Write a JSP program for form handling
14. Write a JSP program for printing date
15. Write a JSP program for Session in JSP

ELECTIVE PAPER I

SOFTWARE ENGINEERING

Semester : V **Hours of Teaching : 4**
Subject Code : **Credits : 4**

UNIT I

Introduction to Software Engineering - Some Definition – Some Size Factors – Quality and Productivity Factors – Managerial Issue

Planning a Software Project: Defining the Problem – Developing a Solution Strategy – Planning the Development Process – Planning an Organization Structure – Other Planning activities

UNIT II

Software Cost Estimation: Software cost Factors – Software Cost Estimation techniques – Staffing level Estimation – Estimating Software Maintenance Costs

UNIT III

Software Requirement Definition: The Software requirements Specification – Formal Specification Techniques - Languages and Processors for Requirements Specification

UNIT IV

Software Design: Fundamental Design Concepts – Modules and Modularizing Criteria – Design Notations – Design Techniques

UNIT V

Verification and Validation Techniques: Quality Assurance – UNIT testing and Debugging – System testing

Software Maintenance: Enhancing maintainability during development – Managerial aspects of Software Maintenance – Configuration Management – Other Maintenance Tools and Techniques.

Text Book(s)

1. Software Engineering Concepts, Richard E.Fairly, Tata McGraw-Hill book Company, 2005

UNIT I	Chapter	1.1 To 1.4
	Chapter	2.1 To 2.5
UNIT II	Chapter	3.1 To 3.4
UNIT III	Chapter	4.1 To 4.3
UNIT IV	Chapter	5.1 To 5.4
UNIT V	Chapter	8.1, 8.5, 8.6
	Chapter	9.1, 9.2, 9.3, 9.5

Reference Book

1. Software Engineering, Jawadekar, Tata McGraw-Hill book Company, 2004

CORE PAPER XII

PHP (PHP Hypertext Preprocessor)

Semester : VI	**Hours of Teaching : 5**
Subject Code :	**Credits : 3**

UNIT I

The PHP Scripting Language: Introduction PHP-Conditions and branches- Loop-Function-User Defined Function. **Array, String and Advanced Data Manipulation in PHP:** Arrays –String-Regular Expressions.

UNIT II

Introduction to Object-Oriented Programming with PHP 5: Class and object-Inheritance

SQL and MySQL: MySQL Command Interpreter – Querying wit SQL Select

UNIT III

Writing to Web Database: Database Insert, Updates and Deletes.

Validation with PHP and JavaScript: Validation and Error Reporting Principles-Server-Side Validation with PHP-JavaScript and Client0side Validation

UNIT IV

Session: Introduction Session Management-PHP Session Management - Using Session in Validation-When to Use Session.

Authentication and Security: HTTP Authentication With PHP- Form-based Authentication-Protecting Data on the web

UNIT V

Error, Debugging and Deploying: Error – Common Programming Error.

Reporting: Creating a Report –Producing PDF –PDF-PHP Reference.

Text Book(s):

1**."Web Database Applications with PHP and MySQL ",** Hugh E.Williams & David Lane, 2nd Edition Covers PEAR, SHROFF PUBLICATIONS & DISTRIBUTIONS PVT.LTD

."Web Database Applications with PHP and MySQL ", Hugh E.Williams & David Lane,

UNIT I	Chapter	2 (Page No: 16 To 37, 43 To 53)
	Chapter	3 (Page No: 57 To 97)
UNIT II	Chapter	4 (Page No: 108 To 131)
	Chapter	5 (Page No: 140 To 160)
UNIT III	Chapter	8 (Page No: 251 To 270)
	Chapter	9
UNIT IV	Chapter	10 (Page No: 338 To 360)
	Chapter	11 (Page No: 373 To 401)
UNIT V	Chapter	12 (Page No: 402 To 412)
	Chapter	13

CORE PAPER XIII

TCP / IP PROGRAMMING

Semester : VI **Hours of Teaching : 5**

Subject Code : **Credits : 4**

UNIT I

The OSI Model and the TCP / IP Protocol Suit: THE OSI MODEL – LAYERS IN THE OSI MODEL – TCP / IP PROTOCOL SUITE – ADDRESSING – IP VERSIONS

UNIT II

Delivery, Forwarding, and Routing Of IP Packets: DELIVERY – FORWARDING – ROUTING – STRUCTURE OF A ROUTER

UNIT III

Internet Protocol (IP): DATAGRAM – FRAGMENTATION – OPTIONS – CHECKSUM – IP PACKAGE

Internet Control Message Protocol (ICMP): TYPES OF MESSAGES – MESSAGE FORMAT – ERROR REPORTING – QUERY – CHECK SUM – DEBUGGING TOOLS – ICMP PACKAGE

UNIT IV

Internet Group Management Protocol: GROUP MANAGEMENT – IGMP MESSAGES – IGMP OPERATION – ENCAPSULATION – IGMP PACKAGE

UNIT V

File Transfer: FTP and TFTP: FILE TRANSFER PROTOCOL (FTP) – TRIVIAL FILE TRANSFER PROTOCOL

Electronic Mail: SMTP, POP, and IMAP: ARCHITUCTURE – USER AGENT – MESSAGE TRANSFER AGENT: SMTP – MESSAGE ACCESS AGENT: POP AND IMAP – WEB – BASED MAIL

Text book(s)

1. *"TCP / IP Protocol Suite" Third Edition* ***Behrouz A.Forouzan, TATA McGRAW – HILL EDITION***

Reference book(s)

1. *"Internetworking with TCP / IP" Fourth Edition, Douglas E.Comer*

"TCP / IP Protocol Suite" *Third Edition* ***Behrouz A.Forouzan, TATA McGRAW – HILL EDITION***

UNIT I	Chapter	2
UNIT II	Chapter	6
UNIT III	Chapter	8, 9
UNIT IV	Chapter	10
UNIT V	Chapter	19, 20

CORE PAPER XIV

PROGRAMMING IN .NET

Semester : VI **Hours of Teaching : 5**

Subject Code : **Credits : 4**

UNIT I

.NET Framework Overview - .Net Framework Class Library – language in .Net – Object Oriented Programming Features – Console Application – Assemblies

UNIT II

Introduction to VB.NET –Data Types and Operators –Control statement –Arrays – Procedures and Structures – Object Oriented Concept in VB.Net - Event –Delegates – Exception Handling

UNIT III

Concept of Database- Relational database – Special Features of ADO.Net-Difference Between ADO and ADO.NET- XML and ADO.NET – Complex data binding –Crystal Report

UNIT IV

Introduction to ASP.NET – Server Controls –HTML and Validation Controls- Application Session and Cookies.

UNIT V

ADO.NET and data binding –Web services – Creating Web Application Using ADO.NET

Text Book(s):

1. P.Radhaganesan,"VB.NET",SCITECH Publication (INDIA) pvt . Ltd.(UNIT 1 – chapter 1),(UNIT 3-chapter 3,4,5,6,8,9),(UNIT 3-chapter 10,13),(UNIT 4-chapter 11,12)

Reference Book(s):

1. Nitni Pandey ,Yesh Singhal , Mridula."Visual Studio.Net Programming", Wiley – Dream TechIndia(p) Ltd,2002
2. David Sceppa,"Microsoft ADO.NET",Microsoft Press,2002
3. Nikhil Kothari, Vandana Data type ,"Developing Microsoft ASP.NET Server Control and Components", Tata McGraw Hill Publication ,2002.

P.Radhaganesan,**"VB.NET"**, SCITECH Publication

UNIT I Chapter 1

UNIT II Chapter 2,3,4,5,6,8,9

UNIT III Chapter 10

UNIT IV Chapter 11, 11.2, 11.10, 11.17

UNIT V Chapter 11.9

Programming in ASP .NET (APTECH Material)

UNIT IV Page No: 177 To 199
UNIT V Page No: 3

CORE LAB XI

PHP LAB

Semester : VI **Hours of Teaching : 4**

Subject Code : **Credits : 3**

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1. Write a PHP Program to Factorial Number
2. Write a PHP Program to Armstrong Number Checking
3. Write a PHP Program to Sum of Prime Number
4. Write a PHP Program to Number Palindrome Checking
5. Write a PHP Program to Sum of Digits
6. Write a PHP Program to find the value of 1/1! + 2/2! + …. N/n!
7. Write a PHP Program to Multiplication
8. Write a PHP Program to Using Case Statement
9. Write a PHP Program to String Manipulation
10. Write a PHP Program to Student Details
11. Write a PHP Program to Employee Details
12. Write a PHP Program to Railway Reservation
13. Write a PHP Program to Banking System
14. Write a PHP Program to Simple Interest Calculation
15. Write a PHP Program to account Opening Form
16. Write a PHP Program to E-mail ID Creation
17. Write a PHP Program to Cinema Ticket Reservation
18. Write a PHP Program to EB Bill Calculation
19. Write a PHP Program to Driving License Form
20. Write a PHP Program to Telephone Bill Calculation

ELECTIVE II

MOBILE COMPUTING

Semester	**: VI**	**Hours of Teaching**	**: 5**
Subject Code	**:**	**Credits**	**: 5**

UNIT I

Mobile Communication: Mobile Computing- Mobile Computing Architecture

Mobile Devices and System: Mobile Phones-Digital Music player

UNIT II

GSM and Similar Architectures: GSM Services and System Architectures-Radio Interface-Protocols-Localization-Calling

UNIT III

Wireless Medium Access Control and CDMA-based Communication: Medium Access Control-Introduction to CDMA-based System

UNIT IV

Mobile IP Network Layer: IP and Mobile IP Network Layers

Mobile Transport Layer: Conventional TCP/IP Transport Layer Protocols-Indirect TCP

UNIT V

Data Dissemination and Broadcasting Systems: Communication Asymmetry-Classification of Data-Delivery Mechanisms-Data Dissemination Broadcast Models-Digital Audio Broadcasting- Digital video Broadcasting

Text Book(s):

1. **"Mobile Computing"** RAJ KAMAL – Oxford University Press – Ninth Impression 2010

UNIT I	Chapter	1, 1.2, 1.3
	Chapter	2, 2.1, 2.2
UNIT II	Chapter	3, 3.1, 3.2, 3.3, 3.4, 3.5
UNIT III	Chapter	4, 4.1, 4.2
UNIT IV	Chapter	5, 5.1
	Chapter	6, 6.1, 6.2
UNIT V	Chapter	8, 8.1, 8.2, 8.3, 8.5, 8.6

CORE LAB XII

.NET TECHNOLOGIES LAB

Semester : VI **Hours of Teaching : 4**

Subject Code : **Credits : 3**

VB.NET PROGRAMMING

1. Write a Program using structure and enum
2. Write a Program using classes, methods, properties and read only property
3. Write a Program using constructors, overload constructors and class events
4. Write a Program using Exception Handling
5. Write a Functions to Perform various string operations
6. Write a Program using .net built-in collection classes namely array list, bit array, Hash table, queue, sorted list, stack, collection, dictionary base
7. Write a Program using inheritance, constructors in inheritance
8. Write a Program using overriding, abstract base classes, shared members and interface
9. Write a Program using win Form controls
10. Write a Program using streams and serialization

ASP.NET PROGRAMMING

11. Develop a package for student data processing
12. Develop a package for employee data processing
13. Design software for Inventory Control System
14. Design software for Bank Data Processing
15. Design Package using various Built – in Objects

DEPARTMENT OF COMPUTER SCIENCE

YADAVA COLLEGE (AUTONOMOUS)

(Re – Accredited with "A" Grade by NAAC)

MADURAI -14

Self – Study Papers

Under Graduate Course

Choice Based Credits System Syllabus

(2015 – 2018)

DEPARTMENT OF COMPUTER SCIENCE

YADAVA COLLEGE (AUTONOMOUS)

(Re – Accredited with "A" Grade by NAAC)

MADURAI -14

Scheme for Self – Study Papers for Earning Extra Credits by Brilliant Students

UNDER GRADUATE

Semester	Subject Code	Paper Title	Credits	Exam Hours	Internal	External	Total
III		Desktop Publishing (Corel Draw & Photo Shop)	2	3	25	75	100
IV		Soft Computing	2	3	25	75	100
V		Embedded Systems	2	3	25	75	100
VI		VC++	2	3	25	75	100

SELF-STUDY PAPER

DESKTOP PUBLISHING (COREL DRAW & PHOTOSHOP)

Semester: III Credits: 2

UNIT I

CorelDraw Basics: The Corel draw screen-drawing basic Geometric Figures-views.

Drawing and selecting: Getting started with the project.

Working with Text: Formatting Text.

UNIT II

Working With Images: Resizing Rotating and skewing Images.

Page Layout and Background: Page Frame.

UNIT III

Getting Started With Photoshop: Opening an Existing File.

Working with Images and Color: Image size-Editing Image-Color Modes-File Formats-Setting the Current Foreground and Background colors-The Eye-dropper Tool.

UNIT IV

Making selections: The Selection Tools-Editing Selections.

Painting and Editing Tools: The Painting tools-The Editing Tools-The eraser Tools.

UNIT V

Layers: Transforming Layers.

Types: Changing the Type Setting.

Text Book:

1.”Comdex Desktop Publishing course Kit” Vikas Gupta, Dreamtech Press.

SELF-STUDY PAPER

SOFT COMPUTING

Semester: IV Credits: 2

UNIT I

Concepts of Fuzzy Logic: Fuzzy set theory-Fuzzy reasoning-Fuzzy Interface Systems-Tsukamoto-Fuzzy models-inputs space partitioning-Fuzzy modeling.

UNIT II

Regression and Optimization: Least squares methods for system identification – Least squares estimator (LSE)-recursive LSE for time varying system-LSE for non-linear models-derivative free optimization-genetic algorithms.

UNIT III

Concepts of Artificial Networks: Basic Models and Learning rules-adaptive networks-feed forward and feed back networks-Supervised and unsupervised learning approaches.

UNIT IV

Neuro-Fuzzy Modeling: Adaptive Neuro-Fuzzy interface System(ANFIS)-ANFIS architecture-Hybrid learning algorithm-examples-on-line identification-chaotic tim series prediction.

UNIT V

Neuro-Fuzzy Control Applications: Feedback control systems-inverse learning-non-linear system identification-application examples-building lighting control-temperature control.

Reference Book(s)

1. J.S.T Jang, C.T Sun and E.Mitizutani “Neuro-Fuzzy and Soft Computing”, Prentice Hall International,Inc,1997.
2. Chin-Teng Lin, C.S. George Lee, “Neural Fuzzy systems”, Prentice-Hall International, Inc 1996.
3. Jose C, principle, Neil R.Euliano and W. Curt Lefebvre, “Neural and adaptive systems”, John willey & Sons, Inc, 2000.

SELF-STUDY PAPER

EMBEDDED SYSTEM

Semester: V Credits: 2

UNIT I

Introduction: The concept of embedded system design, processor technology, design technology, custom single-purpose processor, embedded microcontroller cores, embedded memories, examples of embedded systems.

UNIT II

General purpose processor and ASIPs: Software and operation of general purpose processors, programmers view, development environment, ASIPs, microcontrollers, DSP chips.

UNIT III

Standard peripherals: Timers and applications, USARTY, PPI, PIT, PIC, PWM, A/D CONVERTS.

Memory: Different types of ROM's and Ram's.

UNIT IV

Interfacing: Introduction to interfacing, interrupts and DMA, Communication serial protocols, parallel protocols, wireless protocols.

UNIT V

Software: Software aspects of embedded systems: real time programming languages and operating systems for embedded systems.

Reference Books:

1. Embedded system design By Frank vahid and Tony GIvargis 2002 (John wiley).
2. Embedded Microcomputer system: real Time interfacing By J.W. Valvano 2000 (Brooks/Cole).
3. The Art of designing embedded systems by Jack Ganssle 1999 (Newmes).
4. An Embedded software primer By david simon 2000(Addison Wesley).
5. VLSI digital signal processing By V.K. madiseeti 1995 (IEEE press, NY, USA).
6. The 8051 Microcontroller: Architecture, programming and application By K.J.Ayala 1996 (Penram intl).

SELF-STUDY PAPER

VISUAL C++

SEMESTER: VI Credits: 2

UNIT I

WINDOWS PROGRAMMING 9 WINDOWS ENVIRONMENT-a simple windows program-windows and messages-creating the window-displaying the window-message loop-the window procedure-message processing-text output-painting and repainting-introduction to GDI-device context-basic drawing-child window controls

UNIT II

VISUAL C++ PROGRAMMING-INTRODUCTION 9 Application framework-MFC library-visual c++ -Event Handling-mapping modes-colors-fonts-model and modeless dialog-windows common controls -bitmaps.

UNIT III

THE DOCUMENT AND VIEW ARCHITECTURE 9 Menus-Keyboard accelerators-rich edit control-toolbars-status bars-reusable frame window base class-separating document from its view-reading and writing SDI and MDI documents-splitter window and multiple views-creating DLLs-dialog based applications.

UNIT IV

ACTIVEX AND OBJECT LINKING AND EMBEDDING (OLE) 9 ActiveX controls Vs. ORIDINARY windows controls-Installing ActiveX controls-calendar control-ActiveX control container programming-create ActiveX control at runtime-component object model(COM)-containment and aggregation Vs. inheritance-OLE drag and drop-OLE embedded component and containers-Sample applications.

UNIT V

ADVANCED CONCEPTS 9 Database Management Microsoft ODBC-Structured Query Language-MFC ODBC classes-sample database applications-filter and sort strings-DAO concepts-displaying database records in scrolling view-Treading-VC++ Networking issues-Winiet-building a web client-Internet Information server- ISAPI server extension-chat application-playing and multimedia(sound and video) files.

Text Books:

1. Charles Petzold," Windows programming", Microsoft press, 1996 (UNIT I chapter 1-9)
2. David J. Kruglinski, George shepherd and scot Wingo, " Programming Visual c++", Microsoft press, 1999 (UNIT II-V).

Reference:

Steve Holtzner," Visual C++ 6 progarmming", Wiley dreamtech india Pvt. Ltd.2003

SYLLABUS STATUS REPORT (2015 – 2018)

Semester	Part Code	Title of the Paper	Status
I	**I**	Tamil	--
	II	English	--
	III Core papers	Digital Principles and Computer Organization	Include New Theory Paper
		Programming in C	--
	Allied Paper	Statistics	--
	Core Lab I	Practical I- Programming in C Lab	--
	Core Lab II	Practical II - MS Office Lab	--
	IV ENS	Environmental Studies	--
	IV SBE	Skill Based Elective	--
II	**I**	Tamil	--
	II	English	--
	III Core Papers	Operating Systems	Replace from V Semester Change the Syllabus
		Object Oriented Programming in C++	--
	Allied Paper	Discrete Mathematics	--
	Core Lab1	Practical III- C++ Programming Lab	--
	Core Lab2	Practical IV -Visual Basic Lab	--
	IV VAE	Value Education	--
	IV SBE	Skill Based Elective	--
III	**I**	Tamil	--
	II	English	--
	III Core Papers	Fundamentals of Data Structure using C++	--
		Multimedia	Replace from VI Semester
	Allied Paper	Numerical Methods	--
	Core Lab 1	Practical V- Data Structure Implementation in C++	--
	Core Lab 2	Practical VI –Multimedia Lab	Include New Lab
	IV NME	Non-Major Elective **(Web Technologies)**	--
	IV SBE	Skill Based Elective	--

IV	**I**	Tamil	--
	II	English	--
	III Core Papers	Data Base Management System	Change
		Java Programming	--
	Allied Paper	Operation Research	--
	Core Lab1	Practical –VI I Oracle Programming Lab	--
	Core Lab2	Practical – VIII Java Programming Lab	--
	IV NME	Non-Major Elective **(Oracle)**	--
	IV SBE	Skill Based Elective	--
V	**III Core Papers**	Computer Networks	--
		Web Technologies	Change
		J2EE	Include New Core Paper
	Core Lab1	Practical – IX Linux Lab	--
	Core Lab2	Practical – X Web Technologies Lab	--
	Elective I	Software Engineering	--
	IV SBE	Skill Based Elective **(Soft Skill)**	--
VI	**III Core Papers**	PHP **(Hyper Text Preprocessor)**	--
		TCP/IP Programming	--
		Programming in .Net	--
	Core Lab1	Practical XI – PHP **(Hyper Text Pre Processor)** Lab	--
	Core Lab2	Practical XII - .Net Technologies Lab	--
	Elective II	Mobile Computing	Include New Elective Paper
	IV SBE	Skill Based Elective **(General Knowledge)**	--
	V	PE/NCC/NSS/EXT	--

-- No Change

DEPARTMENT OF COMPUTER SCIENCE

YADAVA COLLEGE (AUTONOMOUS)

(Re – Accredited with "A" Grade by NAAC)

MADURAI -14

Post Graduate Course

Choice Based Credits System Syllabus

(2015 – 2017)

BLUE PRINT OF THE CHOICE BASED CREDIT SYSTEM DISTRIBUTION OF NUMBER OF PAPERS (NO), HOU
(HR), AND CREDIT (CR)

PG COURSE

M.Sc COMPUTER SCIENCE & INFORMATION TECHNOLOGY

SUBJECT	**SEMESTER I**			**SEMESTER II**			**SEMESTER III**			**SEMESTER IV**			**TOTAL**		
Core	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**	**No**	**Hr**	**Cr**
Theory	4	17	16	4	16	16	4	18	16	2	10	6	14	61	54
Practical	2	8	4	2	10	5	3	8	6	1	4	2	8	30	17
Elective	1	5	4	1	4	3	1	4	4	--	--	--	3	13	11
Project	--	--	--	--	--	--	--	--	--	1	16	8	1	16	08
Total	**--**	**30**	**--**	**--**	**30**	**--**	**--**	**30**	**--**	**--**	**30**	**--**	**--**	**120**	**90**

DEPARTMENT OF COMPUTER SCIECE
YADAVA COLLEGE (Autonomous)
CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2015-2017)
POST GRADUATE PROGRAMME
M.Sc COMPUTER SCIENCE & INFORMATION TECHNOLOGY

Semester	**Part**	**Subject Code**	**Title of the Paper**	**Teaching**	
				Hours	**Credits**
I	**Core Theory**		Mathematical Foundations	4	4

			Digital Principles and Computer Organization	4	4
			Relational Data Base Management System	4	4
			Advanced Programming in C	5	4
	Core Practical		Practical – I Advanced C Programming Lab	4	2
			Practical – II Oracle Lab	4	2
	Elective		Computer Networks	5	4
II	**Core Theory**		Object Oriented Technology and Data Structures	4	4
			Advanced Java Programming	4	4
			Network Security	4	4
			Software Engineering	4	4
	Core Practical		Practical – III Data Structures and Algorithms using C++ Lab	6	3
			Practical – IV Advanced Java Programming Lab	4	2
	Elective		Automata Theory	4	3
III	**Core Theory**		Compiler Design	5	4
			Mobile Computing	5	4
			Digital Image Processing	4	4
			Data Mining and Ware Housing	4	4
	Core Practical		Practical – V Linux Programming Lab	3	2
			Practical – VI .Net Technologies Lab	3	2
			Practical – VII Digital Image Processing Using MAT Lab	2	2
	Elective		Operating Systems	4	4
IV	**Core Theory**		PHP (Hypertext Preprocessor)	6	3
			Enterprise Resource Planning	4	3
	Core Practical		Practical – VIII PHP Lab	4	2
	Research		Project Viva – Voce	16	8
Total				**120**	**90**

DEPARTMENT OF COMPUTER SCIENCE

YADAVA COLLEGE (AUTONOMOUS)

CHOICE BASED CREDIT SYSTEM SYLLABUS PLAN (2015 – 2017)

POST GRADUATE PROGRAMME

M.SC COMPUTER SCIENCE & INFORMATION TECHNOLOGY

Nature of Subject	Title of the Paper	Hours	Credits
Core Theory	Mathematical Foundations	4	4
	Digital principles and Computer organization	4	4
	Relational Data Base Management System	4	4
	Advanced Programming in C	5	4

	Object Oriented Technology and Data Structure	4	4
	Advanced Java Programming	4	4
	Network Security	4	4
	Software Engineering	4	4
	Compiler design	5	4
	Mobile Computing	5	4
	Digital Image Processing	4	4
	Data Mining and Ware Housing	4	4
	PHP (Hypertext Preprocessor)	6	3
	Enterprise Resource Planning	4	3
Core Practical	Advanced C Programming Lab	4	2
	Oracle Lab	4	2
	Data Structures and Algorithm Using C++ Lab	6	3
	Advanced Java Programming Lab	4	2
	Linux Programming Lab	3	2
	.Net Technologies Lab	3	2
	Digital Image Processing Using MAT Lab	2	2
	PHP Lab	4	2
Elective	Computer Networks	5	4
	Automata Theory	4	3
	Operating Systems	4	4
Project	Viva Voce	16	8
Total		**120**	**90**

CORE PAPER

MATHEMATICAL FOUNDATIONS

Semester : I **Hours of Teaching : 4**
Subject Code : **Credit : 4**

UNIT I

Logic: Proposition – Logical Operators – Truth Tables – Normal forms – Laws of Logic – Proofs in Propositional calculus (Theory of Inference)

UNIT II

Algebraic Structures: Groups – Subgroups – Homomorphism – Cosets – Lagrange's Theorem – Normal subgroups – semi groups – monoids – homomorphism of semi group and monoids – sub semi groups and sub monoids.

UNIT III

Lattices and Boolean algebra: Lattices – Properties – new lattices – modular and distribution lattices. Boolean algebra – Switching circuits.

UNIT IV

Introduction to transportation problems: IBFS – Optimum Solutions – MODI method – Unbalanced – Maximization – **Introduction to assignment Problem:** Unbalanced – Maximization – Restriction.

UNIT V

Introduction to game theory – Two Persons zero sum game – Maximin – minimax – principles – Saddle point – without saddle point – Matrix Oddment method – Solve N*N game – Graphical Method – Dominance property.

Text Book(s)

1. **"Discrete Mathematics"** M.K.Venkatraman, N.Sridharan, N.Chandrasekaran, 2001, The National Publishing Company
2. **"Resource Management Techniques"** – Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan., A.R.Publications

CORE PAPER

DIGITAL PRINCIPLES and COMPUTER ORGANIZATION

Semester : I **Hours of Teaching : 4**
Subject Code : **Credits : 4**

UNIT I

Number System – boolean algebra – logic Gates – K-Map – Multiplexer – Half Adder – Full Adder – Encoder - Decoder

UNIT II

Logic Design: Flip-flops – types of Flip – flops – JK flip flop – RS flip flop – T flip flop – D flip flop – JK Master Slave flip flop - Shift Registers – serial in serial out – serial in parallel out – Parallel In Serial Out – Parallel In Parallel Out – Counters – types of counters – Synchronous Counter – Asynchronous Counter – MOD 3 Counter.

UNIT III

BASIC STRUCTURE OF COMPUTERS: Computer types – Functional Units – Basic Operational Concepts – Bus Structure – software

INPUT / OUTPUT ORGANIZATION: Accessing I/O Devices – Interrupts – Direct Memory Access

UNIT IV

BASIC PROCESSING UNIT: Some Fundamental Concepts – Execution of Complete Instructions – Hardwire Control.

UNIT V

Microprocessor – Architecture: Internal Microprocessors – Addressing Modes – PUSH/POP instructions – String data transfer instructions – 8085 Microprocessor – 8085 pin out diagram.

Text Book(s):

1. ***"Digital Principles and its Applications",****Albert Paul Malvino & Donald P.Leach TMH Publication*
2. ***"Computer Organization",****Fifth Edition, Carl Hamacher, Zvonko Vranesic, Safwat Zaky, TATA Mc Graw Hill.*
3. *The Intel Micro Processors 8086/8088/80186/80188/80286/80386/80486/ Pentium and Pentium IV Processors, Barry B.Brey latest Edition*

Reference Book(s)

1. ***"Microprocessor Architecture Programming with the 8085"****, Ramesh S.Ganokar latest Edition.*

"Digital Principles and its Applications",*Albert Paul Malvino & Donald P.Leach TMH Publication*

UNIT I	Chapter	5.1 To 5.8, 3.1 To 3.8, 4.1, 6.7, 4.6, 4.3
UNIT II	Chapter	8,9,10

"Computer Organization"*, Fifth Edition, Carl Hamacher, Zvonko Vranesic, Safwat Zaky, TATA Mc Graw Hill.*

UNIT III	Chapter	1.1, 1.2, 1.3, 1.4, 1.5
	Chapter	4.1, 4.2, 4.4
UNIT IV	Chapter	7.1, 7.2, 7.4

The Intel Micro Processors 8086/8088/80186/80188/80286/80386/80486/ Pentium and Pentium IV Processors, Barry B.Brey latest Edition

UNIT V	Chapter	2.1, 3.1, 4.2, 4.4

"Microprocessor Architecture Programming with the 8085"*, Ramesh S.Ganokar latest Edition.*

UNIT V	Chapter	4.1.1, 4.1.5

CORE PAPER

RELATIONAL DATABASE MANAGEMENT SYSTEM

Semester : I	**Hours of Teaching : 4**
Subject Code :	**Credits : 4**

UNIT I

Databases and database users-database system concepts and architecture-data modeling Using the entity-relationship model-enhanced entity-relationship and object modeling-code's rules - normalization

UNIT II

Tools of oracle - data types - data definition language - data manipulation language-Transaction control and data control language. Queries and SQL Functions: Select Statements-Operators-Single Row Functions- Date Functions-Character Functions-Numeric Functions-Group Functions-Set Operators-Union-Union All-Intersect-Minus-Join Concept-Simple Join-Table Aliases- Self Join-Outer Join-Sub Queries-Multiple Sub-Queries-Correlated Sub Query.

UNIT III

Constraints: Integrity Constraints- Domain Integrity- Check Constraints-Entity

Integrity Constraints - Referential Integrity Constraints-Deferrable Constraints. Locks And Table Partitions: Concept Of Locking-Types Of Locks-Row Level Locks-Table Level Lock-Table Partitions. Database Objects & Abstract Data Types: Synonym-Sequences-View-Partition View-Index-Partitioning In Index-Abstract Data Types-Arrays-Nested Tables.

UNIT IV

Introduction To PL/SQL And Cursor: Introduction-Data Types And Their Usage- Scalar Data Types-Composite Type-LOB Types-User Defined Data Types-Attributes- Logical Comparisons-Control Structures- Iterative Control-Sequential Control-Error Handling-Predefined Exception-User Defined Exception-Static Cursors-Explicit Cursors- Implicit Cursor-Cursor For Loop-REF Cursors.

UNIT V

Subprograms and Packages: Subprograms-Procedures-Functions-Packages-ThePackage Specification-Package Body-Cursors In Packages. Database Triggers and Built-In-Packages: Database Triggers-Types Of Triggers-Instead Of Triggers-Built-in Packages-DBMS Standard-DBMS_OUTPUT-DBMS_LOB.

Text Book(s)

1. *Elmasri, Navathe, "**Fundamentals of Database Systems"** Addison Wesely (Latest Edition),*
2. *James T. Perry Joseph G. Latheer, **"Understanding Oracle",** BPB Publications*
3. *"**SQL *Plus User's Guide & Reference"**, Oracle Corporation.*
4. *"**Oracle 8.0 Handbook"**, Oracle Corporation*

Reference Book(s)

1. *Thomas B.Cox, "**Oracle Workgroup Server Handbook",**Mcgraw Hill*
2. *George Koch & Kevin Loney, "**Oracle the Complete Reference"**,TMH*
3. *Steve Bobrowski Matering, **"Oracle 7.0 & Client /Server Computing"***
4. ***"Oracle Server SQL Language Reference Manual**", Oracle Corporation*

Fundamental Data Base System

UNIT I Chapter 1, 2, 3

Understanding oracle

UNIT II Chapter 1, 3

UNIT IV Chapter 6

Oracle the Complete Reference

UNIT III Chapter 17

UNIT V Chapter 23, 24

CORE PAPER

ADVANCED PROGRAMMING IN C

Semester	**: I**	**Hours of Teaching**	**: 5**
Subject Code	**:**	**Credits**	**: 4**

UNIT I

Basic Structures of C Program – Constants, Variables and Data types – Operators and expressions – Assignment statements – Input / Output statements – Control Statements IF-ELSE, Do-WHILE, WHILE, FOR, SWITCH, BREAK, GOTO and Conditional Operator - storage classes and variables.

UNIT II

Arrays – String manipulation – Functions and Parameter passing – Pointers – Pointers to various data types and functions – Structures and Unions. Programs relating to declaration of pointer variables and printing the values and address. Programs on array of pointers and pointers to array.

UNIT III

Files and file types – Operation on files – External variables – Linked list and dynamic memory allocation – Bit fields and Bit wise operators – Enumerations – Command line arguments - Macros – Preprocessors.

UNIT IV

Graphics – Sample Graphics program various function-To Create Normal and Stylish Lines-Drawing and Filling Images, Patterns with a Difference-Palettes and Colors-Outputting and Justifying Texts-Bit of Animation-Interaction with Mouse-Drawing with mouse-More Mouse Cursors-Menus using Mouse-Chart Master-Drawing Graphs-Bar Chart-Stacked Bar Chart-Pie Chart

UNIT V

Input output in C: Types of I/O – Console input / output – Disk I/O functions – I/O redirection in DOS. ROM – BIOS functions of approaches – ROM – BIOS philosophy – The CPU registers

Network programming: PC to PC NETBIOS programming – Designing the dialogue-Programming NETBIOS – NETBIOS sessions – deleting names – Determining session status – determining adapter status – resetting adapter.

Text Book(s)

1. *R.Rajaram, **"C Programming Made Easy"**, SCITECH Publications, Chennai (I, II & III units)*
2. *Yaswant Kanitkar, **"Graphics Under C".**BPB Publication (IV Unit)*
3. *Yaswant Kanitkar, **"Let Us C Projects"** BPB publication*
4. *Yaswant Kanitkar, **"Pointers In C"** BPB publication*
5. *Yaswant Kanitkar, **"Writing TSR Through C"** BPB publication (V Unit)*
6. *Barry Nance, **"Network Programming in C"**, PHI (V Unit)*

Reference Book(s)

1. *B.Gottfried, **"Programming With C"**, Schaum Series, Tata McGraw Hill*
2. *E.Balagurusamy, **"Programming in Ansi C"**,Tata McGraw Hill*
3. *P.E.Mahapatra, **"Thinking in C"**, A.H.Wheeler & Co. Ltd., New Delhi*

"Programming in ANSI C", *E.Balagurusamy*

UNIT I	Chapter	1.8, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13
	Chapter	3, 4, 5, 6
UNIT II	Chapter	7, 8, 9, 10, 11
UNIT III	Chapter	12, 13.2, 13.3, 14.2, 13.7, 13.8, 13.9, 13.10, 13.11

Yaswant Kanitkar, ***"Graphics Under C".****BPB Publication*

UNIT IV	Chapter	2, 6

PRACTICAL I

ADVANCED C PROGRAMMING LAB

Semester : I **Hours of Teaching : 4**
Subject Code : **Credits : 2**

1. Programs using Input and Output statements.
2. Programs using Control, Conditional Statements.
3. Programs using various data structures, arrays using pointers
4. Programs using files.
5. Graphics Programs.
6. To redesign keys
7. To create menus with shortcuts & interactivity
8. To create cursors of various shapes.
9. To display text in different orientations & forms
10. To create any icon.

PRACTICAL II

ORACLE LAB

Semester	**: I**	**Hours of Teaching**	**: 4**
Subject Code	**:**	**Credits**	**: 2**

Queries and SQL Functions

1. Creating Tables for Different Applications using DDL
2. Performing all DML Functions
3. Performing DCL Functions
4. Solving Queries - Date Functions, Numeric Functions, Group Functions
5. Set Operators- Union, Union All, Intersect, Minus
6. Join Concept- Simple Join, Table Aliases, Self Join, Outer Join, Sub Queries, Multiple Sub queries

Constraints, Database Objects & PL/SQL

1. Creating tables with integrity constraints- domain integrity, check constraints, Entity integrity constraints-Referential integrity constraints, deferrable constraints
2. Creating tables with security- row level locks, table level locks
3. Creating database objects using queries- synonym, sequences, view, partition view, index
4. Creating PL/SQL block using all the control statements
5. Creating PL/SQL block using EXPLICIT & IMPLICIT CURSOR
6. Creating PL/SQL block with error handling techniques (pre-defined & user-defined

Exception)

Subprograms, packages, Triggers

a. Creating procedures, functions, and packages for different applications.
b. Creating triggers for different applications

ELECTIVE PAPER

COMPUTER NETWORKS

Semester : I **Hours of Teaching : 5**
Subject Code : **Credits : 4**

Objectives

- *To understand basics of networks*
- *To become familiar with different types & importance of layers*
- *Explain the different techniques in networks*

UNIT I

Introduction: Uses of Computer Networks- Network Hardware- Network Software-Reference Models- Example Networks-Examples of Data Communication services.

UNIT II

The Physical Layer: Guided Transmission Media- Wireless Transmission-Communication Satellites- The Telephone System-Multiplexing

UNIT III

The Data Link Layer: Data Link Layer Design Issues- Error Detection and Correction-Elementary Data Link Protocols- Sliding Window Protocols- the Channel Allocation Problem-Multiple Access Protocols, Aloha, Csma & Collision Free protocols.

UNIT IV

The Network Layer: Network Layer Design Issues- Routing Algorithms-Flooding-Distance Vector-Shortest Path-Flooding- Hierarchical and Broadcast.

The Transport Layer: The Transport Services-Elements of Transport Protocols.

UNIT V

The Application Layer: DNS-the Domain Name System, Electronic Mail-WWW-Multimedia.

Text Book(s)

1. "Computer Networks", A .S. Tanenbaum, Latest edition, PHI Publication **Reference Book(s)**
2. *"Telecommunication Network Design Algorithms",Aaron Kershenbaum, MC-Graw Hill.*

3. *"Data and Computer Communications" William Stallings, PHI.*

"**Computer Networks",** A .S. Tanenbaum, Latest edition, PHI Publication.

UNIT I	Chapter 1
UNIT II	Chapter 2
UNIT III	Chapter 3.1, 3.2, 3.3, 3.4 Chapter 4.1, 4.2.1, 4.2.2, 4.2.3
UNIT IV	Chapter 5.1, 5.2.1 TO 5.2.6 Chapter 6.1, 6.2
UNIT V	Chapter 7

CORE PAPER

OBJECT ORIENTED TECHNOLOGY and DATA STRUCTURES

Semester : II **Hours of Teaching : 4**

Subject Code : **Credits : 4**

UNIT I

Review of C: difference between C and C++, cin, cout, new, delete operators. Encapsulation, information hiding, abstract data types, object & classes, attributes, method. C++ class declaration, state identity and behavior of an object, constructors and destructors, C++ garbage collection, dynamic memory allocation

UNIT II

Class hierarchy, derivation – public, private & protected, aggregation, composition vs classification hierarchies, polymorphism, categorization of polymorphic techniques – method polymorphism, polymorphism by parameter, operator overloading – parametric polymorphism – generic function – template function – function name overloading – friend function – run time polymorphism – compile time polymorphism.

UNIT III

Data Structures-An Overview: Basic terminology-elementary data organization-data structures-data structure operation algorithms, complexity, time space and trade off. Arrays, Records and Pointers: Linear Arrays-Representation Of Linear Arrays In Memory-Traversing Linear Arrays-Inserting, Deleting. Sorting: Bubble Sort- Insertion Sort-Selection Sort- Merging-Merge Sort-Radix Sort Multidimensional Arrays-Pointer-Pointer Arrays- Matrices- Sparse Matrices- Searching: Linear Search- Binary Search- Searching & Data Modification-Hashing.

UNIT IV

Linked Lists: Linked Lists-Representation Of Linked Lists In Memory- Traversing A Linked List-Searching Linked List-Memory Allocation, Garbage Collection-Insertion Into A Linked List-Deletion From A Linked List-Header Linked Lists-Two Way Lists**.**

Stacks, Queues And Recursion: Stacks-Array Representation Of Stacks - Quick Sort, An Application Of Stack- Recursion - Implementation Of Recursive Procedures by Stacks- Queues-De queues-Priority Queues.

UNIT V

Trees: Binary Trees-Representation Binary Trees In Memory-Traversing Binary Trees-Traversal Algorithms Using Stacks. Graphs and their Applications Graph Theory Terminology-Shortest path- traversing A Graph –Posets: Topological Sorting.

Text Book(s)

1. ***E.Balagurusamy, "Object oriented Programming with C++",TMH***
2. ***"Theory And Problems Of Data Structures",*** *Seymour Lipschutz,*

Shaum's Series, Tata Mcgraw Hill Publishing Company 1986

3. ***"Classic Data Structures",Samanta***

Reference Book(s)

1. *A.R. Venugopal, Rajkumar, T.Ravishanker "Mastering C++", TMH*
2. *R.Lafore, "Object Oriented Programming using C++", Galgotia.*
3. *Ellis Horowitz, Sartaj Sahni, "Fundamentals of Data Structures", Galgotia Book Source Publishers*
4. *Aaron M.Tennenbaum, Yedidyah Langsam, Moshe J. Augenstein, "Data Structure using C", Prentice Hall of India 4th Edition*

E.Balagurusamy, "Object oriented Programming with C++
UNIT I Chapter 1.5,5,6
UNIT II Chapter 5.1 to 5.5,7.1 to 7.8,9.1

Ellis Horowitz, Sartaj Sahni, "Fundamentals of Data Structures", Galgotia Book Source Publishers
UNIT I Chapter 1.3, 1.4.11, 2.1
UNIT II Chapter 1.4.9, 3.1.1
UNIT III Chapter 8

"Classic Data Structures", Samanta
UNIT III Chapter 1,2,2.4.2,3.6.1,10.3,10.4,10.5,10.6.1,10.7,11.2.3,11.2.4
UNIT III Chapter 3.1, 3.2.1, 3.2.2, 3.4, 4.2, 4.3, 4.5, 5.1, 5.2, 5.4
UNIT III Chapter 7.2, 7.3, 7.4, 8.1, 8.2, 8.3, 8.4, 8.5

CORE PAPER

ADVANCED JAVA PROGRAMMING

Semester : II **Hours of Teaching : 4**
Subject Code : **Credits : 4**

UNIT I

Fundamentals of Object Oriented programming – Overview of Java Language – Introduction to Classes – Class Fundamentals – Declaring objects

UNIT II

Constructors – Methods –overloading methods –Inner classes –Inheritance –Method Overriding –Packages –Interfaces.

UNIT III

Exception Handling – Types of Exception –Try and catch-Nested try-Throw and throws Multithreading-Thread priorities-Main thread-Synchronization. String handling: string constructors – string length – special string operators – character extraction – String comparison - searching strings – modifying a string – data conversion using value of() – changing the case of characters within a string – string buffer

UNIT IV

Input / output: java i/o classes and interfaces – file – stream classes – byte streams – character streams – using string i/o serialization – stream benefits – Applet basics – skeleton – display methods – requesting repainting – using the status WINDOW – HTML applet tag – passing parameters to applets - AWT classes-Window fundamentals –AWT controls-Labels –Buttons – Menus-Handling events by extending AWT components-Applet class-Applet architecture - The HTML applet tag-Passing parameters in Applets

UNIT V

Java Sever Pages- JSP Scripting Elements and Directives-Declarations-Expressions-Directives-Script lets-Comments-Actions-Implicit JSP Objects-Working with Variable Scopes-Error Pages-Error Pages-Working with Variable Scopes-Scope of Java Beans - Java Servlet - Creating a Magazine Publisher Application Using Servlet-Server Side-Client Side-Creating an HTML Login Screen-Servlet Context-Servlet URL Redirection-Introduction to Java Beans.

Text Book(s)

*1. Herbert Schildt, **"Java2 Complete Reference**", Tata McGraw Hill*

*2. MCGOVERN,et.al.,**"J2EE 1.4 Bible"**, Wiley Dreamtech India Pvt.Ltd.,*

Reference Book(s)

1. *Holzner.S, "**Java Workshop Programming"**, BPB Publications*

Herbert Schildt, "Java2 Complete Reference", Tata McGraw Hill

UNIT I Chapter 2
UNIT II Chapter 6, 7, 8, 9
UNIT III Chapter 10, 11, 13
UNIT IV Chapter 17, 19

J2EE 1.4 Bible

UNIT V Chapter 6, 7

CORE PAPER
NETWORK SECURITY

Semester : II **Hours of Teaching : 4**
Subject Code : **Credits : 4**

UNIT I

Introduction: Security Trends-The OSI Security Architecture- Security Attacks-Security Services- Security Mechanisms-A Model for Network Security. **Classical Encryption Techniques**-Symmetric Cipher Model-Substitution Techniques-Transposition Techniques –Rotor Machines-Steganography. **Block Ciphers and the Data Encryption Standard**-Block Cipher Principles-The Data Encryption Standard-The Strength of DES-Differential and Linear Cryptanalysis- Block Cipher Design Principles.

UNIT II

Finite Fields: Groups, Rings and Fields-Modular arithmetic-The Euclidean Algorithm-Finite Fields of the form GF(p)-Polynomial arithmetic- Finite Fields of the form GF(2^n).**Advanced Encryption Standard**: Evaluation Criteria for AES-The AES Cipher-**More on Symmetric Ciphers**-Multiple Encryption and Triple DES-Block cipher modes of operation-Stream Ciphers and RC4.**Confidentiality using symmetric encryption**-Placement of Encryption Function-Traffic Confidentiality-Key distribution-Random Number Generation.

UNIT III

Introduction to Number Theory-Prime numbers-Fermat's and Euler's Theorems-Testing for Primarily-the Chinese Remainder theorem-Discrete Logarithms. **Public-key Cryptography and RSA:** Principles of Public key Cryptosystems – RSA Algorithm – Recommended reading and website

Key Management: key management – Diffie – Hellman key exchange – Elliptic Curve Arithmetic – Elliptic Curve Cryptography - Recommended reading and website

UNIT IV

Message Authentication and Hash Functions: Authentication Requirements – Authentication Functions – Message Authentication Codes – Hash Functions – Security of Hash Functions and MACs - Recommended reading

Hash and MAC Algorithm: Secure Hash Algorithm – Whirlpool – HMAC – CMAC - Recommended reading and website

Digital Signatures and Authentication Protocol: Digital Signatures – Authentication Protocols – Digital Signature Standard - Recommended reading and website

UNIT V

Electronic Mail Security: Pretty Good Privacy – S / MIME.

IP Security: IP Security Overview – IP Security Architecture – Authentication Header – Encapsulating Security Payload – Combining Security Associations – key management **Intruders:** Intruders – Inttrusion Detection – Password Management.

Firewalls: Firewalls Design Principles - Trusted Systems – Common Criteria for Information Technology Security Evaluation.

Text Book(s)

1. *William Stalling **"Cryptography and Network Security"** Pearson Education*

Reference Book(s)

1. *Charels P. Pfleeger **"Security in Computing"** Prentice Hall*
2. *Jeff Crume **"Inside Internet Security"** Addison Wesley*

*William Stalling **"Cryptography and Network Security"** Pearson Education*

UNIT I	Chapter	1.1 To 1.6
	Chapter	2.1 To 2.5
	Chapter	3.1 To 3.5
UNIT II	Chapter	4.1 To 4.6
	Chapter	5.1 To 5.2
	Chapter	6.1 To 6.3
	Chapter	7.1 To 7.4
UNIT III	Chapter	8.1 To 8.5
	Chapter	9.1 To 9.3
	Chapter	10.1 To 10.5
UNIT IV	Chapter	11.1 To 11.6
	Chapter	12.1 To 12.5
	Chapter	13.1 To 13.4
UNIT V	Chapter	15.1 To 15.2
	Chapter	16.1 To 16.6
	Chapter	18.1 To 18.3
	Chapter	20.1 To 20.3

CORE PAPER

SOFTWARE ENGINEERING

Semester : II **Hours of Teaching : 4**

Subject Code : **Credits : 4**

UNIT

Software Process Models: Waterfall Model- Incremental Process – Model

Evolutionary Process Model Specialized Process Model- Unified Process.

UNIT II

Software Engineering Practice: Communication Practice-Planning Practice Modeling Practice-Constitution practice –Deployment **System Engineering**: Computer Based Systems-System Engineering Hierarchy-System Modeling

UNIT III

Requirements Engineering: Requirements Engineering Tasks-Initiating Requirements Engineering Process-Developing Use Cases. **Building Analysis Model** Requirement Analysis – Data Modeling Concepts – Object Oriented Analysis – Flow Oriented Analysis – Class Based Modeling – Behavioral Modeling.

UNIT IV

Design Engineering: Design Concepts-Design Model – Pattern-Based Software Design. **Architectural Design**: Data Design- Architectural Styles and Patterns-Architectural Design. **Modeling Component Level Design** : Designing Class Based Components-Designing Conventional Components.

UNIT V

User Interface Design : Golden Rules-User Interface Analysis and Design- Interface Analysis-Interface Design Steps. **Testing Strategies:** Test Strategy for Conventional Software- Test Strategies for Object Oriented Software-Validation Testing-System Testing. **Testing Tactics:** Black Box Testing –White Box Testing-Control Structure Testing-Inner Class Test Case Design-Testing Patterns

Text Book

1. *Roger S.Pressman , Software Engineering –A Practitioner 's Approach Sixth Edition " MCGraw –Hill International Editions , International Edition 2005*

Reference Book

1. *L.Shooman "Software Engineering Design, Reliabilty and Management", MCGraw Hill Internation Edn, Newyork, 1998*

*Roger S.Pressman , **Software Engineering –A Practitioner 's Approach Sixth Edition** " MCGraw – Hill International Editions , International Edition 2005*

UNIT I Chapter 3.2, 3.3, 3.4, 3.5, 3.6
UNIT II Chapter 5.2, 5.3, 5.4, 5.5, 5.6, 6.1, 6.2, 6.2.1
UNIT III Chapter 7.2, 7.3, 7.5, 8.1, 8.3, 8.4, 8.6, 8.7, 8.8
UNIT IV Chapter 9.3, 9.4, 9.5, 10.2, 10.3, 10.4, 11.2, 11.5
UNIT V Chapter 12.1, 12.2, 12.3, 12.4, 13.3, 13.4, 13.5, 13.6, 14.2, 14.3, 14.5, 14.9, 14.11

PRACTICAL III

DATA STRUCTURES & ALGORITHMS USING C++

Semester : II	**Hours of Teaching : 6**
Subject Code :	**Credits : 3**

C++ & Data Structure

1. Programs Using Functions, Functions With Default Arguments, Implementation Of Call By Value, Call By Address And Call By Reference
2. Simple Classes For Understanding Objects, Member Functions And Constructors
3. Classes With Primitive Data Members, Classes With Arrays As Data Members
4. Classes With Pointers As Data Members , String Using Class , Classes With Constant Data Members, Classes With Static Member Functions
5. Compile Time Polymorphism , Operator Overloading Including Unary And Binary
6. Operators, Function Overloading
7. Runtime Polymorphism , Inheritance, Virtual Functions, Virtual Base Classes Templates
8. File Handling, Sequential Access, Random Access
9. Program To Implement The Linked List
10. Program For Adding And Displaying Node In A Doubly Linked List
11. Program To Implement Circularly Linked List
12. Program To Implement To Stacks Using Linked List
13. Program To Implement To Queues Using Linked List

Algorithm Techniques

14. Program To Illustrate The Linear Search

15. Program To Illustrate Binary Search

16. Program For Implementing Bubble Sort

17. Program For Implementing Insertion Sort

18. Program For Implementing Selection Sort

19. Program For Implementing Quick Sort

20. Program For Implementing Merge Sort

21. Program For Implementing Stack Using Arrays

22. Program For Implementing Queue Using Arrays

23. Program For Implementing Tree Traversal

24. Program To Convert Infix Expression To Postfix Expression By Using Stack Implementation

25. Program To Convert Infix Expression Infix To Prefix Form

CORE PRACTICAL IV

ADVANCED JAVA PROGRAMMING LAB

Semester : II **Hours of Teaching : 4**
Subject Code : **Credits : 2**

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1. CLASSES AND OBJECTS

A company wants to store all the in formations about the employee working.The details consists of Employee Number,Name,Department,Salary,Age & Sex.Create a class named Emp with above details and create objects to access them.

2. INHERITANCE

Design a marklist which has a following details,Student Name,Major,Year of student,Marks,Total and Results using two classes.

3. MULTITHREADING

An interviews going on for the post of the system analysists in a software company.The candidates are waiting in a queue,from the queue they turn to company and to be interviewes.Each candidate is questioned for 10 minutes.Between each candidates interview the interviewer takes two minutes break.Create a thread to calculate the waiting time of each candidate(There is 50 to 20 candidates)

4. PACKAGES AND INTERFACES

Create a package called PGM with the following details PGM name,Broadcast day,Statation name,director name,PGM type,broadcasting time(in railway time).Create another package called charge details with the following details PGM type is “commercial” Rs.20 per minutes.If PGM type is “Drama Rs.100 per minutes “Education” Rs.50 per minute.Inherit the necessary details from “PGM “.Using an interface calculate amount to be paid by the programmers to the radio station,.if they want their programs to broadcast.Display full information about the given details by creating objects.

5. METHOD OVERLOADING

Write a program to calculate sum of two numbers.Use same method name to calculate.Create objects to call the methods,differentiated either by signature or by data type or both

6. STRING HANDLING

Write a program to perform atleast 10 methods to handle the strings.

7. EXCEPTION HANDLING

Create a try block that is likely to generate any five exceptions and then incorporate necessary catch blocks to catch and handle them appropriately.

8. APPLET

Write a Java applet to create a layout

9. FRAMES

Write a Java program which will make the balls of various colors to move within the frame windows.

10. JDBC CONCEPTS

Write a Java programs to calculate the employee details using JDBC concepts.

11. JSP AND SERVLETS

1. Create a GenericServlet class and Print “Hello” to the browser using service() method?
2. Create a HttpServlet Class and Print “Hi World” to the browser using doGet() Method?
3. Create a HttpServlet class and Print “Hello World” to the browser using doPost() Method?

4. Create a HttpServlet class and Create a session inside the doGet()Method?
5. Create a GenericServlet class and Create a Session inside the service() method?

ELECTIVE PAPER

AUTOMATA THEORY

Semester : II **Hours of Teaching : 4**
Subject Code : **Credits : 3**

UNIT I

Introduction – Strings – Alphabets – Languages – Graphs – Trees – Inductive proofs – Set notation – Relation – formal languages – Four classes of grammar – phrase structure – context sensitive – context free – Regular – Context free Language – generation tree – ambiguity.

UNIT II

Finite automat – Regular Expression – finite state System – Basic definition – NDFSA- Conversion of NDFSA to DFSA – Finite Automata with e-moves – Regular Expression – two way finite automata – finite automata with output – Application of finite automata.

UNIT III

Acceptance of a regular set by an FSA – construction of a right linear grammar from a finite automation – pushing lemma for regular sets – closure properties of regular sets – the myhill – nerode theorem – minimization of finite automation.

UNIT IV

Context free Grammar – Motivation and introduction – Context – free grammars – Derivation trees – Simplification of Context – free grammars – Chomsky normal form Greibach normal form – The existence of inherently ambiguous context – free languages Properties of Context

– free Languages – The pumping lemma for CFL's – Closure Properties of CFL's – Decision algorithms for CFL's.

UNIT V

Pushdown Automata (PDA) – Definition – Acceptance of a work by a finite state – Empty store construction of a PDA to accept languages by empty store given a PDA to accept the language by finite state – Definition of a deterministic PDA

Text Book(s)

1. *"**Introduction To Automata Theory, Languages And Computation"** John E.Hopcroft, Jeffery D.Ullman Narosa Publishing House Pvt. Ltd.*
2. *"Automation and Formal languages" by Putumpekar.,*

Reference Book(s)

1. ***"Automata Theory and Formal Languages"** by Rani Sironmony.*

CORE PAPER
COMPILER DESIGN

Semester	**: III**	**Hours of Teaching**	**: 5**
Subject Code	**:**	**Credits**	**: 4**

UNIT I

Introduction to Compiler: Translator, the structure of compiler, Lexical Analysis, syntax analysis, intermediate code, code generation, code optimization, book keeping, error handling, and compiler writing tools.

UNIT II

Lexical analysis: The role of lexical analyzer, a simple approach to design of lexical of lexical analyzer, regular expressions, implementation of lexical analyzer. Basic parsing techniques: derivation & parse trees, parsers, shift reducing parsing, operator precedence parsing, top down parsing, predictive parsing.

UNIT III

Syntax Analysis Introduction: Role of parsers & issues of separating lexical & syntax analysis. Types of grammar, CFG introduction, expressing language through CFG. Basic concepts in parsing leftmost derivation, rightmost derivation, derivation tree, parse tree, Ambiguous grammar. Representation of CFG Tree.

UNIT IV

Parsing technique: LR parser, the canonical collection of LR (0) items, constructing.SLR parsing tables, constructing canonical LR parsing tables, constructing LALR parsing tables, using ambiguous grammars, an automatic parser generator.

UNIT V

Syntax directed translation: syntax directed translation schemes; implementation of syntax

directed translators, intermediate code, postfix notation, three address code, quadruples, and triples, postfix translations. Symbol tables: the content of symbol table, data structure for symbol tables, representing scope information. Error detection and recovery: errors, lexical phase errors, syntax phase errors, semantic errors, introduction to code optimization: the principle source of optimization, loop optimization, the DAG representation of basic blocks.

Text Book(s)

1. *Aho, A V R. Sethi and J.D Ulman, "**Compiler principle, techniques and tools"**, Addison Wesley.*

Reference Book(s)

1. *Barrent W A ., J D Couch, **Compiler construction theory and practice-Computer science series**, Asian student edition.*
2. *Dhamdhere D. M., Compiler construction principles and practice -, MacMillan*
3. *Gress d., Compiler construction for digital computer, Wiley New York.*
4. *Holub A.j., Compiler Design in C-Printice hall*
5. *Trambley J.P and P.G Sorenson Theory and Practice of compiler Lex and Yece-O'relly.*

*Aho, A V R. Sethi and J.D Ulman, "**Compiler principle, techniques"***

UNIT I	Chapter	1.1 To 1.11
UNIT II	Chapter	3.1, 3.2, 3.3, 3.8, 5.1, 5.2, 5.3, 5.4, 5.5
UNIT III	Chapter	4.1, 4.2, 4.3
UNIT IV	Chapter	6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7
UNIT V	Chapter	9, 11, 12.1, 12.2, 12.3

CORE PAPER
MOBILE COMPUTING

Semester	**: III**	**Hours of Teaching**	**: 5**
Subject Code	**:**	**Credits**	**: 4**

UNIT I

Introduction: Mobility of bits and bites- Wireless the beginning-Mobile Computing-Dialog Control-Networks-Middleware and Gateways-Applications and Services-Developing Mobile Computing Applications-Security in Mobile Computing-Standard Bodies-Players in the wireless space.

Mobile Computing Architecture: Architecture for mobile Computing-Three-tier Architecture-Design consideration for mobile Computing through Internet-Making Existing Applications Mobile Enabled.

UNIT II

Mobile computing through telephony: Evolution of telephony-Multiple Access Procedures-Mobile Computing through Telephone-Developing an IVR Application-Voice XML-Telephony Application Programming Interface.

Emerging Technologies: Introduction-Bluetooth-Radio Frequency Identification-Wireless Broad Band-Mobile IP-Internet Protocol Version 6-Java card.

UNIT III

Global System for Mobile Communication: Global System for mobile communication-GSM Architecture-GSM Entities-Call routing in GSM-PLMN Interfaces-GSM Address and Identifiers-Network Aspects in GSM-GSM frequency Allocation-Authentication and security.

Short Message and Service (SMS): Mobile Computing over SMS-Short Message Service(SMS)-Value Added Services through SMS.

UNIT IV

General Packet Radio Services: Introduction-GPRS and Packet Data Network-GPRS Network Architecture-GPRS Network Operations-Data Services in GPRS-Applications for GPRS-Limitations of GPRS-Billing and Charging in GPRS.

UNIT V

Wireless Application Protocol (WAP): Introduction-WAP-MMs-GPRS Applications.

CDMA and 3G: Introduction-Spread Spectrum Technology-IS95-CDMA versus GSM-Wireless Data-Third Generation Networks-Applications on 3G.

Text Book(s)

1.”Mobile computing”, Technology Applications and Services creation, Asoke k talukder and roopa r yavagal.,TMH Publishing Company new delhi,2005.

Reference Book(s)

1.”Mobile Communication” Jochen Schiller,2nd Edition pearson 2003.

"Mobile computing", Technology Applications and Services creation, Asoke k talukder and roopa R yavagal

UNIT I	Chapter	1, 2.4, 2.5, 2.6, 2.7, 2.8
UNIT II	Chapter	3, 4
UNIT III	Chapter	5, 6
UNIT IV	Chapter	7
UNIT V	Chapter	8, 9

CORE PAPER
DIGITAL IMAGE PROCESSING

Semester : III **Hours of Teaching : 4**
Subject Code : **Credits : 4**

UNIT I

What is Digital Image Processing – The Origins of Digital Image Processing – Examples of fields that use Digital Image Processing – Fundamental steps in Digital Image Processing – Components of an Image Processing System – Basic Image Transformations Introduction to Fourier Transform and DFT – Properties of two dimensional Fourier transforms – Walsh , Hadamard, Discrete cosine, Haar, slant, Karhunern – Leove transforms – Hotelling transform.

UNIT II

Digital Image Fundamentals - Elements of Visual Perception – Light and the Electromagnetic Spectrum – Image Sensing and Acquisition – Image Sampling and Quantization – Some Basic Relationships Between Pixels – Linear and Nonlinear Operations.

UNIT III

Image Enhancement in Spatial Domain - Some Basic Gray Level Transformations – Histogram Processing – Enhancement Using Arithmetic / Logic Operations – Basic of Spatial Filtering – Smoothing Spatial Filters – Sharpening Spatial Filters – Combining Spatial Enhancement methods.

UNIT IV

Color Image Processing - Color Fundamentals – Color Models – Pseudo color Image Processing – Basic of Full-Color Image Processing – Color Transformations – Smoothing and Sharpening – Color Segmentation – Noise in color Image – Color Image Compression.

UNIT V

Image Compression - Fundamentals – Image Compression Models – Elements of Information Theory- Error-free Compression – Lossy Compression – Image Compression Standards.

Text Book(s)

*1.Gonzalez and Woods : **"Digital Image Processing"**, Addision Wesley,*

Reference Book(s)

1. *Jain A.K. **"Fundamentals of Digital Images Processing", PHI, Delhi Latest Edition***
2. *Prati, **"Digital Image Processing", Wiley, Latest Edition.***
3. *Gregory A Baxes **"Digital Image Processing"**, John Willey, Latest*

Edition.

*Gonzalez and Woods **"Digital Image Processing"**, Addision Wesley*

UNIT I Chapter 1, 4.1, 4.2, 4.6.1, 4.6.5

UNIT II Chapter 2

UNIT III Chapter 3

UNIT IV Chapter 6

UNIT V Chapter 8

CORE PAPER

DATA MINING AND DATA WAREHOUSING

Semester : III	**Hours of Teaching : 4**
Subject code :	**Credit : 4**

UNIT I

What motivated Data Mining – So, What is Data Mining - Data Mining –Data Mining Functionality's - Area all of the patterns Interesting - Classification of Data Mining Systems - Major Issues in Data Mining – What is Data Warehouse - Multidimensional Data Model - Data Warehouse architecture - Data warehouse implementation

UNIT II

Further development of Data cube technology – from data Warehouse to Data Mining –Why preprocess the data-Data cleaning – Data Integration and Transformation – Data Reduction - Discretization and concepts - Data Mining primitives - A Data Mining query language - Designing graphical user interfaces - Architecture of data mining systems

UNIT III

What is concept Description - Data Generation and Summarization - Analytical characterization - Mining class comparisons - mining descriptive statistical measures in large databases – Discussion - Association rule mining – Mining Single Dimensional – from association mining to correlation analysis – Constraint based association mining

UNIT IV

What is classification – Issue regarding classification and prediction – classification by decision tree induction – Bayesian classification – classification by back propagation – classification based on concepts – other classification methods – prediction – classifier accuracy – what is cluster analysis –Types of data in cluster analysis – categorization of major clustering methods

UNIT V

Partitioning methods – Hierarchical methods – Density based methods – Guide based methods – Model based clustering methods – outlier analysis –Multidimensional analysis – Mining spatial databases – mining the world wide web

Text Book(s)

1. Data Mining Concepts & Techniques - Jiawei Han , Micheline Kamba – Morgan Kaufman Publishers

Reference Book(s)

1. Oracle 8 Data Warehousing – Michael J.Corey ,Ian Abramson ,Ben Taub

Data Mining Concepts & Techniques - Jiawei Han , Micheline Kamba – Morgan Kaufman Publishers

UNIT I	Chapter	1.1 To 1.7, 2.1 To 2.4.
UNIT II	Chapter	2.5, 2.6, 3.1 To 3.5, 4.1 To 4.4.
UNIT III	Chapter	5.1 To 5.6, 6.0 To 6.6.
UNIT IV	Chapter	7.1 To 7.9, 8.1, 8.2, 8.3.

UNIT V Chapter 8.4 To 8.9, 9.1 To 9.6.

PRACTICAL V
LINUX PROGRAMMING LAB

Semester : III **Hours of Teaching : 3**
Subject Code : **Credits : 2**

1. Identify the character class
2. Shell script to display the name of process
3. Group the files in a directory
4. Program to search a pattern
5. Counting total number of users
6. Display roman value for numeric value
7. Calculator implementation by shell script
8. Create the user according to the system time
9. Implementation of cat command
10. Implementation of ls command
11. Implementation of mkdir command
12. Implementation of rm command

13. Implementation of chmod command

14. Implementation of cp command

15. To find factorial for the given number

16. Find total sizes in given file

17. Fine and replace a word in a given file

18. Students file creation and processing

PRACTICAL VI
. NET TECHNOLOGIES LAB

Semester : III **Hours of Teaching : 3**
Subject Code : **Credits : 2**

1. Write a .aspx program to display the welcome message.
2. Write a .aspx program to get the name and designation of an employee from the user and display the name and designation entered by the user.
3. Write a .aspx program to perform arithmetic operations.
4. Write a .aspx program to display current date and time.
5. Write a .aspx program to calculate simple interest.
6. Write a .asp program to calculate compound interest.
7. Write a .aspx Web Form application of ASP.net that prompts users to select the material and enter the quantity they need.The file should give the unit price of the item and the total amount of purchase. The file should display date and time using an application variable declared and initialized in the global.
8. Write a .aspx program to create an Electricity Bill.
9. Write a .aspx program to maintain a book details.
10. Write a .aspx file that prompts users to enter the correct secret code to enable access to a restricted zone.
11. Write a .aspx file that caches the dynamic output for 120 seconds and reuse cached copy for requests that have the same query string values as the cached copy.

12. Create a web service using c#. Write two web methods –one for listing the car brands and another for searching and displaying price list.
13. Write a web application using .NET that uses the web service . it should provide a drop-down list box to populate the car brands and a data grid to display the price list.
14. Write a .net program to connect database the using wizard.
15. Write a .net program to connect database the without using wizard.
16. Write a .net program to generate a report.

PRACTICAL VI
DIGITAL IMAGE PROCESSING USING MATLAB

Semester : III **Hours of Teaching : 2**
Subject Code: **Credits : 2**

Write a program to Retrieve the Image

Write a program to Perform the following Operation with Images

Addition

Subtraction

Multiplication

AND

OR

Zooming, Rotation with various Separations

Write a program various types of Filters using MATLAB

Write a program to perform Edge Detection using MATLAB

Write a program to perform Histogram using MATLAB

Write a program to perform various compression Image using MATLAB

Write program to perform segmentation using MATLAB

ELECTIVE PAPER
OPERATING SYSTEMS

Semester : III **Hours of Teaching : 4**
Subject Code: **Credits : 4**

UNIT I

Overview of Operating systems: OS and the computer systems-Classes of OS-Batch processing systems-Multiprogramming systems-Time sharing systems-Real Time operating systems-Distributed Operating systems-Modern operating systems-Process-Process state transitions-Process control block-Operation on processes-Suspend and resume-Interrupt processing.

UNIT II

Memory management: Managing the memory hierarchy-Static and dynamic memory allocation-Memory allocation to a process-Reuse of memory-Contiguous memory allocation-Non Contiguous memory allocation-Paging-Segmentation-Segmentation with paging-Kernel memory allocation.

UNIT III

Deadlock: Definition of Deadlock-Deadlocks in resource allocation-Handling Deadlocks-Deadlock detection and resolution-Deadlock prevention-Deadlock avoidance-Formal characterization of resource deadlocks-Disk Scheduling.

UNIT IV

Distributed Operating systems: Features of Distributed OS-Nodes of DOS-Network of OS-DOS-Reliable interprocess Communication-Distributed Computation paradigm-Networking-Model of DOS-Design issues in DOS.

UNIT V

Distributed Control algorithms: Operation of distributed control algorithms-Correctness of distributed control algorithms-Distributed mutual exclusion-Distributed deadlock handling-Distributed Scheduling algorithm-Distributed termination detection-Practical issues in distributed control algorithms.

Text Book:

1. **"Operating Systems"** A Concept based approach, D.M. Dhamdhere 2nd Edition, The McGraw hill companies.

Reference Book:

1. **"An introduction to Operating Systems"** -Harvey. M. Deital, 2nd Edition, Pearson education asia.

"Operating Systems" A Concept based approach, D.M. Dhamdhere 2nd Edition, The McGraw hill companies.

UNIT I	Chapter	2.1 To 2.3, 3.2 3.4, 3.5 To 3.9
UNIT II	Chapter	11.1, 11.2, 11.4, 11.5.1, 11.6 To 11.11
UNIT III	Chapter	8.1 To 8.7
UNIT IV	Chapter	16.1 To 16.8
UNIT V	Chapter	18.1 To 18.6, 18.8

"An introduction to Operating Systems" - Harvey. M. Deital, 2nd Edition,

UNIT I	Chapter	3.2, 3.4 To 3.8

CORE PAPER

PHP (PHP Hypertext Preprocessor)

Semester	**: IV**	**Hours of Teaching**	**: 6**
Subject Code	**:**	**Credits**	**: 3**

UNIT I

The PHP Scripting Language: **Introduction PHP-Conditions and branches- Loop-Function-Working with Types –User Defined Function**

Array, String and Advanced Data Manipulation in PHP: **Arrays –String-Regular Expressions-Dates and Times- Integer and Floats**

Introduction to Object-Oriented Programming **with** PHP 5: **Class and object-Inheritance-Throwing and Catching Exception**

UNIT II

PEAR: Overview-Core Components-Packages

Writing to Web Database: Database Insert, Updates and Deletes-issues in Writing Data to Database

Validation with PHP and JavaScript: Validation and Error Reporting Principles-Server-Side Validation with PHP-JavaScript and Client0side Validation

UNIT III

Session: Introduction Session Management-PHP Session Management-case Study: Using Session in Validation-When to Use Session-PHP Session API and Configuration

Authentication and Security: HTTP Authentication –HTTP Authentication With PHP- Form-based Authentication-Protecting Data on the web

UNIT-IV

Error, Debugging and Deploying: Error –Common Programming Error -customs Error Handlers

Reporting: Creating a Report –Producing PDF –PDF-PHP Reference

Advance Features of Object –oriented Programming in PHP: working with class Hierarchies-class type Hints-Abstract Class and Interface –Freight Calculator Example

UNIT V

The Shopping Cart: Code Overview- The wine Store Home Page-The Shopping Cart Implementation. **Ordering and shipping at the Online Wine Store:** Code Overview-Credit Cart and shipping Instruction –Finalizing Orders-HTML and Email Receipts

Text Book(s)

1. **"Web Database Applications with PHP and MySQL ",** Hugh E.Willioms & David Lane. 2nd Edition Covers PEAR, SHROFF PUBLICATIONS &DISTRIBUTIONS PVT.LTD

"Web Database Applications with PHP and MySQL ", Hugh E.Willioms & David Lane

UNIT I	Chapter	2, 3, 4
UNIT II	Chapter	7, 8, 9
UNIT III	Chapter	10, 11
UNIT IV	Chapter	12, 13, 14
UNIT V	Chapter	18, 19

CORE PAPER
ENTERPRISE RESOURCE PLANNING

Semester : IV **Hours of Teaching : 4**
Subject Code : **Credits : 3**

UNIT I

Introduction: ERP: An Overview, Enterprise-An Overview, Benefits of ERP, ERP and Related Technologies, Business Process Reengineering (BPR), Data Warehousing, Data Mining, On-line Analytical Processing (OLAP), Supply Chain Management

UNIT II

Business Modules: Business Modules in an ERP Package, Finance, Manufacturing (Production), Human Resources, Plant Maintenance, Materials Management, Quality Management, Sales and Distribution

UNIT III

ERP Implementation: To be or not to be, ERP Implementation Lifecycle, Implementation Methodology, Not all Packages are Created Equal!, ERP Implementation-The Hidden Costs, Organizing the Implementation, Vendors, Consultants and Users, Contracts with Vendors, Consultants and Employees, Project Management and Monitoring, After ERP Implementation

UNIT IV

The ERP Market: ERP Market Places SAP R/3 Description architecture , open technology, User interface , SAP AG, People Soft, Baan Company, JD Edwards World Solutions Company, Oracle Corporation, QAD, System Software Associates, Inc.(SSA)

UNIT V

ERP-Present and Future: Turbo Charge the ERP System, Enterprise Integration Applications (EIA), ERP and E-Commerce, ERP and Internet, Future Directions in ERP, Appendices"

Text Book

1 Alexis Leon, "Enterprise Resource Planning", Tata McGraw Hill.Latest Edition

UNIT I Chapter 2 To 9
UNIT II Chapter 20 To 27
UNIT II Chapter 10 To 19
UNIT IV Chapter 28 To 34
UNIT V Chapter 36 To 40

Reference Book

1 S. Sadagopan, "Enterprise Resource Planning", Tata McGraw Hill, Latest Edition

CORE PRACTICAL VII
PHP LAB

Semester : IV **Hours of Teaching: 4**
Subject Code: **Credits: 2**

Write a PHP Program to Factorial Numbers

Write a PHP Program to Armstrong Numbers and Checking

Write a PHP Program to Sum of Prime Numbers

Write a PHP Program to Number Palindrome Checking

Write a PHP Program to Sum of Digits

Write a PHP Program to find the value of 1/1! +2/2! + ….n/n!

Write a PHP Program to Multiplication Table

Write a PHP Program to Using case Statement

Write a PHP Program to String Manipulation

Write a PHP Program to Student Details

Write a PHP Program to an Employee Details

Write a PHP Program to Railway Reservation

Write a PHP Program to Banking System i) Deposit ii) Withdrawal

Write a PHP Program to Simple Interest Calculation

Write a PHP Program to Account Opening Form

Write a PHP Program to E-Mail ID Creation

Write a PHP Program to Cinema Ticket Reservation

Write a PHP Program to EB Bill Calculation

Write a PHP Program to Driving License Form

Write a PHP Program to Telephone Bill Calculation

RESEARCH
PROJECT VIVA - VOCE

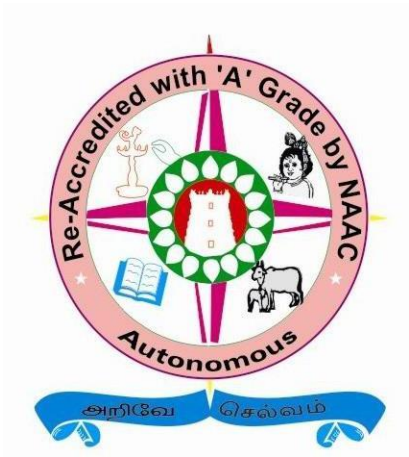
Semester : IV **Hours of Teaching: 16**
Subject Code : **Credits: 08**

- Students must spend at least three months (90 days) in industry, Attendance certificate is must.
- Project Confirmation letter is send to the department within a month
- Three internal viva-voce will be arranged, Students may attend any two but the final internal viva-voce is must.
- Students can do the project at home institution also.

DEPARTMENT OF COMPUTER SCIENCE

YADAVA COLLEGE (AUTONOMOUS)

MADURAI -14



Post Graduate Course

Choice Based Credit System Syllabus

Self – Study Papers

2015 – 2017

Department of Computer Science
Yadava College (Autonomous)
Madurai -14

Scheme for Self – Study Paper for Earning Extra Credit by Brilliant Students

POST GRADUATE

Semester	Sub Code	Paper Title	Credits	Exam Hours	Internal	External	Total
III		**UML** (Unified Modeling Language)	2	3	25	75	100
IV		Visual C++	2	3	25	75	100

Self – Study Paper
UNIFIED MODELING LANGUAGE (UML)

Semester : III **Credits: 2**

UNIT I

Overview of UML: History of before UML 1.x – UML 1.x – Development toward UML 2.0 – Software Development Methods – Modeling.

UNIT II

UML Diagrams Overview: Structure Diagrams – Behavior Diagrams – Interaction Diagrams – Meta Modeling – Object Management Group(OMG) – Meta Object facility(MOF)

UNIT III

Criticisms: Language bloat – Problems in Learning and adopting – Usage of Executable UML – Domain Chart – Class Diagram-State Diagram

UNIT IV

Action Language – Model testing and execution – Model Compilation – Executable UML Profile – Advantage of Executable UML

UNIT V

The OMG SysML V1.1 Is Now Available: OMG SysML Project portal – OMG System Modeling Language – SysML Diagram Summary – Structure, Behavior, Requirements and Parametrics

Text Book(s)

1. Jacobson Ivar Grady Booch James Rumbaugh(1998). The Unified Software Development process. Addition Wesley Longman.
2. Matrin Robert Cecil(2003) UML for java Programmers

Self – Study Paper

VISUAL C++

Semester : IV **Credits : 2**

UNIT I

WINDOWS PROGRAMMING 9 Windows environment – a simple windows program – windows and messages – creating the window – displaying the window – message loop – the window procedure – message processing – text output – painting and repainting – introduction to GDI – device context – basic drawing – child window controls

UNIT II

VISUAL C++ PROGRAMMING – INTRODUCTION 9 Application Framework – MFC Library – Visual C++ Components – Event Handling – Mapping – Mapping Modes – colors – fonts – modal and modeless dialog – windows common controls –bitmaps

UNIT III

THE DOCUMENT AND VIEW ARCHITECHTURE 9 Menus – Keyboard accelerators – rich edit control – toolbars – status bars – reusable frame window base class – separating document from its view – reading and writing SDI and MDI documents – splitter window and multiple views – creating SLLs – dialog bases applications

UNIT IV

ACTIVIEX AND OBJECT LINKING AND EMBEDDEDING(OLE) 9 ActiveX controls Vs, ORDINARY Windows Controls – Installing ActiveX controls – Calendar Control – ActiveX control container programming – create ActiveX control at runtime – Component Object Model(COM) – containment and aggregation Vs. inheritance – OLE drag and drop – OLE embedded component and containers –sample applications

UNIT V

ADVANCED CONCEPTS 9 Database Management Microsoft ODBC – Structured Query Language – MFC ODBC classes – sample database applications – filter and sort stings – DAO concepts – displaying database records in scrolling view – Threading – VC++ Networking issues –

Winsock – Win Inet – Building a web client –Internet Information Server – ISAPI server extension – chat application –playing and multimedia (sound and video) files.

Text book(s)

1. Charles Petzold, “Windows Programming”, Microsoft press,1996 (Unit I Chapter 1-9)
2. David J. Kruglinski, George Shepherd and Scot Wingo, “Programming Visua C++”, 7Microsoft

Semester	Part	Title of the Paper	Status

press, 1999 (Unit II-V)

References: Steve Holtzner, ”Visual C++ 6 Programming”, Wiley Dreamtech India Pvt.LTD. 2003.

-	**Core Theory**	Mathematical Foundations	--
		Digital Principles and Computer Organization	--
		Relational Data Base Management System	--
		Advanced Programming in C	--
	Core Practical	Practical – I Advanced C Programming Lab	--
		Practical – II Oracle Lab	--
	Elective	Computer Networks	--
II	**Core Theory**	Object Oriented Technology and Data Structures	--
		Advanced Java Programming	--
		Network Security	--
		Software Engineering	--
	Core Practical	Practical – III Data Structures and Algorithms using C++ Lab	--
		Practical – IV Advanced Java Programming Lab	--
	Elective	Automata Theory	--
III	**Core Theory**	Compiler Design	--
		Mobile Computing	--
		Digital Image Processing	--
		Data Mining and Ware Housing	--
	Core Practical	Practical – V Linux Programming Lab	--
		Practical – VI .Net Technologies Lab	--
		Practical – VII Digital Image Processing Using MAT Lab	--
	Elective	Operating Systems	Include New Core Theory
IV	**Core Theory**	PHP (Hypertext Preprocessor)	--
		Enterprise Resource Planning	Replace from III Semester
	Core Practical	Practical – VIII PHP Lab	--
	Research	Project Viva – Voce	--

-- No Change