Periyar University
Salem – 636 011

B.Sc.,Computer Science
Regulations and Syllabus - CBCS Pattern
(2008 – 2009 and thereafter)

PERIYAR UNIVERSITY, SALEM – 11

REGULATIONS FOR B.Sc., (COMPUTER SCIENCE) DEGREE COURSE with Semester System

(Effective from the academic year 2008-2009)

REGULATIONS

1. ELIGIBILITY FOR ADMISSION

A candidate who has passed in Higher Secondary Examination with Mathematics or Business Mathematics or Computer Science or Statistics (Academic stream or Vocational stream) as one of the subject under Higher Secondary Board of Examination, Tamilnadu as per norms set by the Government of Tamilnadu or an Examination accepted as equivalent thereto by the syndicate, subject to such conditions as may be prescribed thereto are permitted to appear and qualify for the **Bachelor of Computer Science degree examination** of this university after a course of study of three academic years.

2. DURATION OF THE COURSE

The course shall extend over a period of three years comprising of six semesters with two semesters in one academic year. There shall not be less than 90 working days for each semester. Examination shall be conducted at the end of every semester for the respective subjects.

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3. COURSE OF STUDY

The course of study shall comprise instruction in the following subjects according to the syllabus and books prescribed from time to time. The syllabus for various subjects shall be clearly demarcated into five viable units in each paper/subject. Part -I, Part-II, Part – III and Part – IV subjects are as prescribed in the scheme of examination.

4. EXAMINATIONS

The theory examination shall be three hours duration to each paper at the end of each semester. The candidate failing in any subject(s) will be permitted to appear for each failed subject(s) in the subsequent examination. The practical examinations for UG course should be conducted at the end of the even semester.

4.(a) Submission of record note books for practical examinations

Candidates appearing for practical examinations should submit bonafide Record Note Books prescribed for practical examinations, otherwise the candidates will not be permitted to appear for the practical examinations. However, in genuine cases where the students, who could not submit the record note books, they may be permitted to appear for the practical examinations, provided the concerned Head of the department from the institution of the candidate certified that the candidate has performed the experiments prescribed for the course. For such candidates who do not submit Record Books, zero (0) marks will be awarded for record note books.

5. Revision of Regulations and Curriculum

The University may revise /amend/ change the Regulations and Scheme of Examinations, if found necessary.

6(a). Passing Minimum – Theory

The candidate shall be declared to have passed the examination if the candidate secure not less than 40 marks out of 100 (**CIA – 10 marks out of 25 and EA – 30 marks out of 75)** in the University examination in each theory paper.

6(b). Passing Minimum – Practical

The candidate shall be declared to have passed the examination if the candidate secure not less than 40 marks put together out of 100 **(CIA – 16 marks out of 40 and EA – 24 marks out of 60)** in the University examination in each practical paper.

7. Question Paper Pattern for B.Sc.(CS) /B.Sc.(IS))/BCA Courses

7.1(a). THEORY - Question Paper Pattern [EA] (Total Marks: 75)

PART – A (10 x 2 = 20 Marks)
(Answer ALL questions), (Two questions from each unit)

PART – B (5 x 5 = 25 Marks)
(Answer ALL questions) & (One question from each unit with Internal Choice)

PART – C (3 x 10 = 30 Marks)
(Answer ANY THREE questions) & (Open Choice – 3 out of 5 questions)

7.1(b). THEORY - Internal Marks Distribution[CIA] (Total Marks: 25)

- Attendance :5 Marks
- Assignment :5 Marks
- Internal Examinations :15 Marks

7.2(a). **PRACTICAL –** *Marks Distribution & Question paper Pattern*

(Max. Marks: 100)
[External [EA]: 60 Marks & Internal [CIA]: 40 Marks]

PRACTICAL - External Marks Distribution (Total Marks: 60)

For each practical question the marks should be awarded as follows **(External):**

i) Algorithm / Flowchart - 20%
ii) Writing the program in the main answer book- 30%
iii) Test and debug the program - 30%
iv) Printing the correct output - 20%

(Marks may be proportionately reduced for the errors committed in each of the above)

PRACTICAL - Internal Marks Distribution (Total Marks: 40)

- Record : 15 Marks
- Internal Practical examinations : 25 Marks

PRACTICAL Question Paper Pattern

- **Practical – I**

One question from Microprocessor (either or type)
AND
One question from C Programming (either or type)

- **Practical – II**

One question from C++ (either or type)
AND
One question from JAVA Programming (either or type)

- **Practical – III**

One question from Visual Programming Exercise (either or type)
AND
One question from RDBMS Exercise (either or type)

- **Practical – IV**

1 out of 2 question from Web Designing Exercise

8. Commencement of this Regulation

These regulations shall take effect from the academic year 2008-09, i.e, for students who are to be admitted to the first year of the course during the academic year 2008-09 and thereafter.

PERIYAR UNIVERSITY, SALEM -636 011.

B.Sc., Computer Science

Scheme of Examination (CBCS PATTERN) for the Academic Year 2008-09

SEMESTER – I

Sem	Part	Sub Code	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
I	I		Tamil - I	6	-	3	25	75	100
	II		English – I	6	-	3	25	75	100
	III		Digital Computer fundamentals and Microprocessor	6	-	4	25	75	100
			Practical - I (Microprocessor & C)	-	3	-	-	-	-
			Allied I : Paper – I	6	-	4	25	75	100
	IV		Env. Studies	1	-	-			
			Value Education	2	-	2	25	75	100
			Total	**27**	**3**	**16**	**125**	**375**	**500**

SEMESTER – II

Sem	Part	Sub Code	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
II	I		Tamil - II	6	-	3	25	75	100
	II		English – II	6	-	3	25	75	100
	III		Programming in C	4	-	4	25	75	100
			Practical - I (Microprocessor & C)		3	3	40	60	100
			Allied I : Paper - II	4	-	3	25	75	100
			Allied I : Paper - III	4	-	3	25	75	100
	IV		Env. Studies	1	-	2	25	75	100
			SBEC – 1	1	1	2	25	75	100
			Total	**26**	**4**	**23**	**215**	**585**	**800**

SEMESTER – III

Sem	Part	Sub Code	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
III	I		Tamil - III	6	-	3	25	75	100
	II		English – III	6	-	3	25	75	100
	III		Programming in C++	4	-	4	25	75	100
			Data Structures and Algorithms	4		4	25	75	100
			Practical - II (C++ and Java)	-	2	-	-	-	-
			Allied II: Paper – I	4	-	4	25	75	100
			Allied II: Practical Lab - I	-	2	-			
			Tamil/ Advanced Tamil (OR) Non –Major elective – I NMEC –I	2	-	2	25	75	100
			Total	**26**	**4**	**20**	**150**	**450**	**600**

SEMESTER – IV

Sem	Part	Sub Code	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
IV	I		Tamil - IV	6	-	3	25	75	100
	II		English – IV	6	-	3	25	75	100
	III		Programming in Java	5	-	4	25	75	100
			Practical - II (C++ and Java)	-	3	3	40	60	100
			Allied II : Paper - II	4	-	4	25	75	100
			Allied II: Practical. Lab - I	-	2	2	40	60	100
	IV		**SBEC – II**	1	1	2	25	75	100
			Tamil/ Advanced Tamil (OR) Non –Major elective – I NMEC – II	2	-	2	25	75	100
			Total	**24**	**6**	**23**	**230**	**570**	**800**

SEMESTER – V

Sem	Part	Sub Code	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
V	III		Visual Programming	4	-	4	25	75	100
			Relational Database Management Systems	4	-	4	25	75	100
			Operating Systems	4	-	4	25	75	100
			Software Engineering	4	-	4	25	75	100
			Elective – I	5	-	5	25	75	100
			Practical - III (VB and RDBMS)	-	5	-	-	-	-
	IV		**SBEC – III**	1	1	2	25	75	100
			SBEC – IV	2	-	2	25	75	100
			Total	**24**	**6**	**25**	**175**	**525**	**700**

SEMESTER – VI

Sem	Part	Sub Code	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
VI	III		Computer Networks	4	-	4	25	75	100
			Multimedia and Its Applications	4	-	4	25	75	100
			Web Technology	4	-	4	25	75	100
			Elective – II	5	-	5	25	75	100
			Elective – III	5	-	5	25	75	100
			Practical - III (VB and RDBMS)	-	-	3	40	60	100
			Practical - IV (Web Designing)	-	4	3	40	60	100
	IV		**SBEC –V**	1	1	2	25	75	100
			SBEC –VI	2	-	2	25	75	100
	V		Extn. Act.	-	-	1			
			Total	**25**	**5**	**33**	**255**	**645**	**900**

Elective – I

Sem.	Part	Subject Code	Subject
V	III		PC Hardware and Troubleshooting
			Client/Server Technology
			Mobile Computing

Elective – II

Sem.	Part	Subject Code	Subject
VI	III		Software Testing
			E-Commerce
			Software Project Management

Elective – III

Sem.	Part	Subject Code	Subject
VI	III		Data Mining and Ware housing
			Compiler Design
			Artificial Intelligence and Expert System

Extra Disciplinary Subjects offered by the Department of Computer Science/Applications - Non Major Elective Course – (NMEC).

The department can offer any one of the subjects to the other major subject students in each semester.

Semester 3

1. Fundamentals of Information Technology
2. Basics of Computers and Office Automation

Semester 4

1. Introduction to Object Oriented Programming Language C++
2. HTML and Web Design

SBEC – Skill Based Elective Courses*

Part	Sem.	Sub. Code	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
IV	II		SBEC – 1 : Office Automation	1	1	2	25	75	100
	IV		SBEC – II : DTP Packages	1	1	2	25	75	100
	V		SBEC – III : Multimedia Package	1	1	2	25	75	100
	V		SBEC - IV : Soft Skills	2	-	2	25	75	100
	VI		SBEC - V : HTML and Web Design	1	1	2	25	75	100
	VI		SBEC-VI : Web Programming (Java script and VB script)	1	1	2	25	75	100

* Only theory examinations

Non Major Elective Course – (NMEC)

Extra Disciplinary Subjects offered by the Department of Computer Science/Applications

The department can offer any one of the subjects to the other major subject students in each semester.

Part	Sem.	Sub. Code	Subject	Lect . Hrs	Credit	Marks		
						CIA	EA	Total
IV	III		**NMEC I:** Fundamentals of Information Technology	2	2	25	75	100
			NMEC I: Basics of Computers and Office Automation	2	2	25	75	100
	IV		**NMEC II:** Introduction to Object Oriented Programming Language C++	2	2	25	75	100
			NMEC II: HTML and Web Design	2	2	25	75	100

ALLIED PAPERS

I - YEAR (Allied – I:- Mathematics - First Option)

Part	Semester	Subject	Hrs.		Credit	Marks		
			Lect.	Lab		CIA	EA	Total
III	I	Allied I : Paper – I: Algebra and Differential Calculus	6	-	4	25	75	100
	II	Allied I : Paper – II: Integral Calculus, Fourier series and Vector calculus	4	-	3	25	75	100
	III	Allied I : Paper – III : Differential Equations and Laplace Transforms	4	-	3	25	75	100

I -YEAR (Allied – I: Mathematics- Second Option)

Sem	Part	Semester	Subject	Hrs.		Credit	Marks		
				Lect.	Lab		CIA	EA	Total
I	III	I	Allied I : Paper – I: Discrete Mathematics	6	-	4	25	75	100
II		II	Allied I : Paper – II: Numerical Calculus	4	-	3	25	75	100
II		II	Allied I : Paper – III : Graph Theory	4	-	3	25	75	100

I - Year / II-Year (Allied – I / II: Statistics - Third Option)

Part	Semester	Subject	Hrs.		Credit	Marks		
			Lect.	Lab		CIA	EA	Total
III	I / III	Allied I : Paper – I: **Allied Statistics –I**	6	-	4	25	75	100
	II / IV	Allied I : Paper – II: **Allied Statistics –II**	4	-	3	25	75	100
	II / IV	Allied I : Paper – III : **Allied Statistics -III**	4	-	3	40	60	100

II - YEAR (Allied – II: COMMERCE - FIRST Option)

Part	SEMESTER	Subject	Hrs.		Credit	Marks		
			Lect.	Lab		CIA	EA	Total
III	III	Allied II : Paper – I: Principles of Accounting	4	-	4	25	75	100
	IV	Allied II : Paper – II: Cost and Management Accounting	4	-	4	25	75	100
	III & IV	Allied II : Practical Lab -1: Allied Commerce Practical	-	2	2	40	60	100

II - YEAR (Allied – II: ELECTRONICS - SECOND Option)

Part	SEMESTER	Subject	Hrs.		Credit	Marks		
			Lect.	Lab		CIA	EA	Total
III	III	Allied II : Paper – I: Applied Electronics-I	4	-	4	25	75	100
	IV	Allied II : Paper – II: Applied Electronics-II	4	-	4	25	75	100
	III & IV	Allied II : Practical Lab -1: Allied Electronics Lab –I	-	2	2	40	60	100

II - YEAR (Allied – II: PHYSICS - THIRD Option)

Part	SEMESTER	Subject	Hrs.		Credit	Marks		
			Lect.	Lab		CIA	EA	Total
III	III	Allied II : Paper – I: Allied Physics – I	4	-	4	25	75	100
	IV	Allied II : Paper – II: Allied physics – II	4	-	4	25	75	100
	III & IV	Allied II : Practical Lab -1 Allied Physics Practical	-	2	2	40	60	100

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	DIGITAL COMPUTER FUNDAMENTALS AND MICROPROCESS0R	B.Sc., Computer Science
I Semester		Core: Theory
		Credit: 4

Subject Description: This course presents the fundamental of digital Computers, organization of Computers, I/O Devices and Microprocessor.

Goal: To enable the students to learn the basic functions of computers, logic gates and concepts of 8085 Microprocessor.

Objectives: On successful completion of the course the students should have:

- Understood Number system, Logic Gates, Boolean algebra, I/O Devices.
- Understood the Microprocessor and Programming.

CONTENTS

UNIT – I

Introduction to Computers: Introduction – Types of Computers – Characteristics of Computers – Five generations of modern Computers- Classifications of digital computer system: Introduction – Microcomputers – Personal Computers – Workstations – Portable Computers – Minicomputers – Mainframes – Supercomputers – Network Computers.

Number system: Introduction – Decimal number system – Binary number system – Binary to decimal conversion – Decimal to binary conversion – Binary Addition – Binary Subtraction – Complements: 9's Complement – 10's Complement – 1's Complement – 2's Complement – Signed and Unsigned number representation – Fixed point representation of numbers, Floating – point representation of numbers – Binary Coded Decimal – Gray Code – Excess-3 Code – ASCII Code – EBCDIC Code – Octal number system – Hexa Decimal number system.

UNIT – II

Boolean Algebra and Gate Networks: Fundamentals concepts of Boolean Algebra – Logical Multiplication AND Gates, OR Gates, and Inverters – Evaluation of logical Expressions – Basic Law of Boolean Algebra – Simplification of expressions – De Morgan's theorems – Basic Duality of Boolean Algebra - Derivation of a Boolean Expression – Interconnecting Gates – Sum of products (SOP) and Products of sums (POS) – Derivation of products of

sums expressions – Derivation of three Input variable expression – NAND gates and NOR gates. The Map method for simplifying expressions – Sub cube and covering – product of sums expressions – Don't cares.

UNIT – III

Anatomy of a Digital computer: Functions and Components of a Computer – Central Processing Unit – Control Unit – Arithmetic Logic Unit – Memory – Register Addresses – Memory Units: Types of main memory. Input Devices: Keyboard – Mouse – OCR – OMR – Touch Screen. Output Devices: Introduction – Monitor – Classification of Monitors based on Colours and signals – Characteristics of a Monitor - Video Standards – Printer – Plotter – Sound Cards and Speakers – Auxiliary storage Devices: Introduction – Magnetic Tape – Hard Disk – Floppy Disk – CD Disks / Drives.

UNIT – IV

Microprocessors: Microcomputers and Assembly Language – Introduction to 8085 Assembly language programming. Microprocessor Architecture and Microcomputer systems: Microprocessor Architecture and its operations – Memory – I/O devices. 8085 Microprocessor Architecture and Interfacing: The 8085 MPU – Examples of a 8085 based Microcomputer – Memory interfacing.

UNIT –V

Programming the 8085: Introduction to 8085 Instructions – Addressing modes, Code conversion: BCD to Binary conversion – Binary to BCD conversion – BCD to seven segment LED code conversion – Binary to ASCII and ASCII to binary code conversion – BCD addition – BCD subtraction.

TEXT BOOKS

1."Fundamentals of Computer Science and Communication Engineering". Alexis Leon, Mathew's Leon, Vikas Publishing House, New Delhi, 1998. (Unit I & III)

2."Digital Computer Fundamentals". Thomas C.Bartee, 6th Edition T.M.H Publisher, New Delhi, 1991.(Unit II)

3."Microprocessor Architecture Programming and Application with the 8085". Ramesh Gaonkar, 5th Edition. (Unit IV & V)

Reference Book:

1. "Understanding Computers- Today and Tomorrow", Deborah Morley, Charles S. Parker, 11th Edition, Thomson Course Technology, 2007

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	PROGRAMMING IN C	**B.Sc., Computer Science**
II Semester		**Core: Theory**
		Credit: 4

Subject Description: This course presents the Programming concept in C, explains data types, arrays, pointers, files.

Goal: To enable the students to learn the basic functions, principles and programming techniques of C language

Objectives: On successful completion of the course the students should have understood the programming in C language

CONTENTS

Unit – I

Overview of C: History of C – Importance of C – Basic structure of C programs. Constants, variables and data types: Character set – C Tokens – Keywords and identifiers – Constants – Variables – Declaration of storage classes – Assigning values to variables- Defining symbolic constants. Operators and expression – Evaluation of expressions – Precedence of arithmetic operators – Type conversions in expressions – Operator precedence and associatively – Mathematical functions. Managing input and output operations: Reading and writing a character – Formatted input and output.

Unit – II

Decision making and branching: Simple IF, IF-ELSE, Nesting of IF-ELSE, ELSE-IF ladder, Switch statements – GOTO statements. Decision making and looping: WHILE statement – DO statement – FOR statement – Jumps in loops. Arrays: Definition & Declaration – One dimensional – Two dimensional – Multi dimensional arrays - Dynamic arrays.

Unit – III

Character arrays and strings: Introduction – Declaring and initializing string variables – Reading strings from terminal – Writing strings to screen – String handling functions – Table of strings. User – Defined functions: Introduction – Need for user – Defined function – A Multi- function program – Elements of user – Defined function – Definition of functions – Return values and their types – Function calls – Function declaration – All category of functions – Nesting of functions – Recursion – Passing arrays to functions – Passing strings to function.

Unit – IV

Structures and Unions: Introduction – Defining a structure – Declaring structure variables – Accessing structure members – Structure initialization – Copying and comparing structure variables – Arrays of structures – Arrays within structures – Structures within structures – Structures and functions – Unions – Size of structures – Bit fields.

Pointers: Introduction – Understanding pointers – Accessing the address of a variable – Initializing of pointer variables. Chain of pointers – Pointer expressions –Pointers and arrays – Pointers and character strings – Arrays of pointers – Pointers as function arguments – Functions returning pointers – Pointers to functions – Pointer and structures.

Unit – V

File Management: Introduction – Defining and opening a file –Closing a file – Input/Output operation on files – Error handling during I/O operations – Random access files – Command line arguments. The Preprocessor: Introduction – Macro substitution – File inclusion – Compiler control directives.

TEXT BOOK

Programming in ANSI C, E. Balgurusamy Tata McGraw Hall, New Delhi, 4th Edition.

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	PRACTICAL - I (MICROPROCESSOR & C)	**B.Sc., Computer Science**
I & II Semesters		**Core: Practical -I**
		Credit: 3

MICROPROCESSOR LIST

Study of Intel 8085 Microprocessors performing simple exercises:

1. Perform 8-bit addition using 8085 Microprocessor.
2. Perform 8-bit subtraction using 8085 Microprocessor.
3. Perform 8 bit Multiplication using 8085 Microprocessor.
4. Perform 8 bit Division using 8085 Microprocessor.
5. Arranging the given numbers in Ascending Order.
6. Arranging the given N numbers in Descending Order.
7. Picking up the Largest Number in the given set.
8. Picking up the Smallest Number in the given set.
9. HEX number to Decimal number Conversion.
10. Decimal Number to Hex Number Conversion.

C PROGRAMMING LIST

1. Write a program to reverse a given number & largest number and smaller number among N numbers by using if statement
2. Write a program to convert the decimal to binary conversion & binary to decimal conversion & to check the perfect numbers by using while statement.
3. Write a program to find the sum, average, standard deviation for the given N numbers.
4. Write a program to find the factorial of a given number & to count the positive, negative & zero numbers.
5. Write a program to find the occurrences of each character in the string & to concatenate two strings without using string library function.
6. Write a program to read the text and count the number of vowels, consonants, and digits in it.
7. Write a program to evaluate the SINE series and COS series.

8. Write a program to design the calculator functions as (i) Addition
   (ii) Subtraction (iii) Multiplication (iv) Trigonometric function.
9. Write a program to find the factorial of a number using recursion and compute & to reverse the text using recursion.
10. Write a program to sort the list of names & sort the list of integers in ascending order.
11. Write a program to check whether the given matrix is symmetry or not using Pointers.
12. Write a program to count the number of lines, words, and characters in a file.
13. Write a program to create and process student mark sheet system using Structure. (Assume your own fields).
14. Write a program to separate odd and even numbers using file.
15. Write a file-handling program to create and process employee pay bill system. (Assume your own fields).

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	PROGRAMMING IN C++	**B.Sc., Computer Science**
III Semester		**Core: Theory**
		Credit: 4

Subject Description: This course presents the Object Oriented Programming concept in C++, data types, arrays, pointers, files, classes, inheritance, polymorphism, exception handling

Goal: To enable the students to learn the object oriented programming, classes, inheritance, polymorphism, exception handling in C++

Objectives: On successful completion of the course the students should have understood the object oriented programming with C++

CONTENTS

UNIT – I

Overview of c++ Language: Introduction – Keywords and Identifiers-Constants-Variables-Data types-Operators and Expressions – Program structure –Conditional Statements: If Statement – Switch statement – Goto Statement, Looping Statements: while Loop-For Loop Do-While Loop-Jumps in Loops – Break – Continue

UNIT – II

Functions: Advantages of Functions-Classification of Functions-Inline Functions-Function Overloading –Reference Variables – Storage Classes, Arrays: Definition of an Arrays-Arrays and Functions, **Classes and Objects**- Passing Objects as arguments – Returning an object from functions – Arrays of objects – Members of classes – Static member data – Static member functions - Friend Functions – this Pointer – Simple programs

UNIT – III

Constructors and Destructors-Types of Constructors-Destructor and its Characteristics, Operator overloading and Type Conversion, Inheritance: Types of **Inheritance** – Virtual Base Class – Pointers to Objects – Pure Virtual function and Abstract Class – Constructors and Destructors in Derived Classes – Virtual Destructor – Simple programs

UNIT – IV

I/O Streams: Unformatted I/O Operations – Formatting of Outputs, File Handling: File operations – Types of Data files – Text Files – Binary Files – Command Line Arguments, String Handling – Simple programs

UNIT – V

Exception Handling: Exception Handling Mechanism – Single Try block and multiple catch blocks – Re-throwing Exceptions, Templates: Class, Function, Member Function Templates – Templates parameters – Simple programs

TEXT BOOK:

1. "Programming in C++", M. T. Somashekara, Prentice Hall of India Private Limited, New Delhi, 2008

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	DATA STRUCTURES AND ALGORITHMS	**B.Sc., Computer Science**
III Semester		**Core: Theory**
		Credit: 4

Subject Description: This course presents fundamentals of algorithms, linked lists, stacks, queues, trees, graphs and sorting techniques

Goal: To enable the students to learn the data structure fundamentals, principles and concepts

O**bjectives:** On successful completion of the course the students should have understood the various Data Structure Algorithms for stack, queues, linked list, trees, graphs, sorting and searching.

CONTENTS

UNIT -I

Algorithms (Analysis and design): Problem solving – Procedure – Top-Down and Bottom-up approaches to algorithm design – Use of algorithms in problem solving: Developing an algorithm – Characteristics of algorithmic language - Design of algorithms – Implementation of algorithm – Verification of algorithm – Efficiency analysis of algorithms: Space, Time complexity, Frequency count – Simple algorithms.

Data Representation: Abstract data type (ADT) – Fundamental and derived data types: Declaration – Representation – Primitive data structures: Symbol table – Recursion.

UNIT- II

Arrays: Definition – Terminology – One dimensional array – Memory allocation, Operations, Application –Multidimensional Arrays: Two dimensional Arrays – Sparse matrices – Three dimensional and n-dimensional Arrays – Pointer Arrays.

UNIT -III

Stacks: Introduction – Definition – Representation of stacks – Operations on stacks – Applications of stack.

Linked List: Definition - Single Linked List: Representation, Operations – Circular Linked List – Double Linked List: Operations – Circular Double Linked List: Operations

Application of Linked Lists: Sparse Matrix Manipulation – Polynomial Representation – Dynamic Storage Management – Memory Representation: Fixed, Variable block storage – Boundary tag system – Deallocation Strategy – Buddy System: Binary Buddy system – Comparison between fibonacci and Binary Buddy System – Comparison of Dynamic storage Allocation Systems – Compaction.

UNIT- IV

Queues: Introduction – Definition – Representation of Queues – using Arrays, Linked list. - Various Queue structures: Circular Queue – De-queue – Priority Queue – Applications of Queues.

Trees: Concepts – Representation of Binary tree – Operations on Binary Tree – Types of Binary Trees.

Graphs: Introduction – Graph terminologies – Representation of Graphs – Operations on Graphs – Application of Graph Structures.

UNIT- V

Searching and Sorting: Searching – Sequential and Binary Search – Indexed Search – Hashing Schemes - Hashing functions: Division/ Remainder methods – Mid Square method – Folding method – Hash Collision: linear probing – Chaining - Bucketing – Sorting: Selection sort – Bubble sort – Insertion sort – Quick sort – Merge sort – Radix sort – Shell sort – Heap sort – Comparison of time complexity.

TEXT BOOKS

1. “Classic Data Structures”, D. Samanta, Prentice Hall of India Private Limited, New Delhi 2008
2. “Data Structure made simple”, Sathish Jain, Shashi Singh, BPB Publications, New Delhi 2006

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	PROGRAMMING IN JAVA	**B.Sc., Computer Science**
IV Semester		**Core: Theory**
		Credit: 4

Subject Description: This course presents the skills in Java Programming.

Goal: To enable the students to learn the Object oriented programming, Functions, Threads, Applets, Principles of programming techniques of java language

Objectives: On successful completion of the course the students should have understood the object oriented programming in java

CONTENTS

UNIT – I

An overview of Java: Object oriented programming – Java features – Java environment - Data types, variables and arrays. Operators- Expressions - Control Statements: Branching statements – Iteration statements – Jump statements – Sample java program.

UNIT – II

Classes – Objects – Methods – Constructors – The this keyword – finalize () method – Overloading methods – Returning objects – Recursion – Static – Final – Nested inner classes – Command line arguments – Inheritance.

UNIT – III

Packages and Interfaces: Packages – Access protection – Importing packages – Interfaces – Exception handling: Fundamentals – Exception types – Try and catch – Multiple catch – Nested try – throw – throws – finally – Build in exception.

UNIT – IV

Multithread programming: Thread model –Life cycle of thread – Creating thread – Multiple threads – Thread priorities – Synchronization – Inter thread Communication – Suspending, Resuming and Stopping threads – I/O Applets, and other topics.

Networking: Basics – Inetaddress – TCP/IP Client Sockets – URL – URL Connection – TCP/IP Server Sockets – Data gram.

UNIT – V

The Applet Class: Basics – Building applet code – Applet life cycle – Creating an executable applet – Designing a web page – Running the applet – Getting input from the user – Graphics programming: The graphic class – Lines and rectangles – Circles and ellipses – Using control loops in applets – Drawing bar charts.

TEXT BOOKS

1. "The Complete Reference" Java2, 3rd Edition, Patrick Naughton, Herbert Schildt, Tata McGraw Hill Pub. Ltd., New Delhi.
2. Programming with Java, 3rd Edition, E. Balagurusamy, Tata McGraw Hill Pub. Ltd., New Delhi.

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	PRACTICAL - II (C++ and JAVA)	**B.Sc., Computer Science**
III & IV Semesters		**Core: Practical-II**
		Credit: 3

C++ PROGRAMMING LIST:

1. Write a program to calculate ncr = n!/n!*(n-r)! (Use a function to find out factorial of a number)
2. Create a class by name triangle with the three sides a, b and c as its member data include member functions to perform the following
    a. To accept the sides of a triangle
    b. To display the sides of a triangle
    c. To find whether the triangle is a equilateral triangle
    d. To find whether the triangle is a isosceles triangle
    e. To find whether the triangle is a right angled triangle
3. Create a class by the name circle with radius as its member data. Provide constructors to initialize the objects of the class and find the area and circumference of a circle. Area = 3.14 * radius * radius Circumference = 2 * 3.14 * radius
4. Implement Push, Pop Operations of a Stack using (a). Array (b). Pointer.
5. Implements Add, Delete Operations Queue using(a). Array (b). Pointer
5. Write a Program to Convert an Infix Expression to Postfix Expression using Arrays.
6. Write a Program to Add Two Polynomials using Pointers.
7. Write a Program to Create a Doubly Linked List and to Insert or Delete an Element from Doubly Linked List
8. Perform all Tree Traversals for a Binary Tree using Arrays and Recursive.

JAVA PROGRAMMING LIST:

1. Write a program that accepts a shopping list of five items from the command line and stores them in a vector and accomplish the following

i. To delete an item in the list

ii. To add an item at a specified location in the list

iii. To add an item at the end of the list

iv. To print the contents of the vector

2. Implement of the concept of multiple inheritances to develop pay slip and design a package
3. Develop a simple real-life application program to illustrate the use of multithreads.
4. Create a try block that is likely to generate three types of exception and then incorporate necessary catch blocks to catch and handle them appropriately
5. Write a Java applet, which will create the layout below:

FORMAT

Enter your Name:

Enter your Age:

Select City: *Delhi *Madras

Select S/W: *Oracle *Visual Basic *Java

OK CANCEL

Handle the following simple validations. The name entered should be less than 25 characters wide. Age entered should be done ass the user exits the fields as well as when OK button is pressed. Hint use the Boolean action (Event evt, object arg)

6. Develop a java applet, which shows your name and address with in a window frame
7. Develop java program to client and server chatting

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	VISUAL PROGRAMMING	B.Sc., Computer Science
V Semester		Core: Theory
		Credit: 4

Subject Description: This course presents a visual basic programming.

Goal: Enable the student to be familiar with visual programming.

Objectives: On successful completion of the course the student should have:

- Understood the doing project, creating controls, variables, data types, functions, procedures, arrays.
- Understood the Fundamentals of GUI event programming.

CONTENTS

UNIT – I

Starting a new project – The properties of window – Common form properties – Scale properties – Color properties – Making a form responsive – Printing a visual representation of a form – typos – creating stand – alone windows programs – The toolbox – creating controls – The name(Control name) property – properties of command buttons – simple event procedures for command buttons –access keys – Image controls – Text boxes – labels – Navigating between controls – Message boxes – The Grid – The ASCII representation of forms

Unit –II

Statements in Visual Basic – Variables – Setting properties with code – Data Types – Working with variables – More on strings – More on numbers – Constants – Input boxes – Displaying information on a form – The format function – Picture boxes – Rich Text Boxes – The Printer Object – Determination loops – indeterminate loops – Making decisions – Select case – Nested If-Then's – The GoTo – String functions – Numeric Functions – Date and Time functions – financial functions.

Unit – III:

Function procedures – sub procedures – Advanced uses of procedures and functions – Using the Object Browser to Navigate among your subprograms – List: One-dimensional arrays – Arrays with more than one dimension – Using Lists and Array with functions and procedures – The new array-based string – Records (User-Defined Types)

UNIT – IV

The With statement – Enums – Control arrays – List and Combo Boxes – The Flex grid control – Code Modules: Global Procedures – The DoEvents Function and Sub Main – Accessing Windows function – Error Trapping – Creating an Object in Visual Basic – Building your own classes

UNIT – V

Fundamentals of graphics – Screen scales – The line and shape controls – Graphics via code – Lines and Boxes – Circles, Ellipses and Pie Charts. The Mouse event procedures – Dragging and dropping operations – File commands – Sequential files- Random access files – Binary files – sharing files – File system controls – The file system objects – The Clip Board

TEXT BOOK:

1. GRAY CORNELL, “VISUAL BASIC 6 from the GROUND UP”, Tata McGraw Hill Edition, 1999.

REFERENCE BOOKS:

1. Peter Norton’s & Michael Groh, 1998 – “Guide to Visual Basic 6 Techmedia” “Visual Basic”- Paul Sheriff – PHI – 1999.

2. “Mastering visual Basic 6” – Evangelus Petroutsos BPB Puhlnata

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	Relational Database Management Systems	B.Sc., Computer Science
V Semester		Core: Theory
		Credit: 4

Subject Description: This course presents the Relational Database Management System concepts and SQL programming.

Goal: To enable the students to learn the data base systems, relational algebra and calculus, normal forms, PL/SQL Programming.

Objectives: On successful completion of the course the students should have understood the designing the data base and concepts of data base management system.

CONTENTS

UNIT – I

Introduction: Database System Applications – Purpose of Database Systems – View of Data – Database Languages – Transaction Management – Database Architecture – Database users and Administrators.

Relational Model: Structure of Relational Databases – Database Design – ER Model – Overview of the Design Process – The Entity-relationship Model – Constraints – Entity Relationship Diagrams.

UNIT – II

Relational Algebra Operations – Relational Languages: The Tuple Relational Calculus – The Domain Relational Calculus – SQL: Background – Data Definition – Basic Structure of SQL Queries – Set Operations – Aggregate Functions – Null Values – Nested Sub-Queries – Views – Modification of the Database.

UNIT – III

Data Normalization: Pitfalls in Relational Database Design – Decomposition – Functional Dependencies – Normalization – First Normal Form – Second Normal Form – Third Normal Form – Boyce-Codd Normal Form – Fourth Normal Form – Fifth Normal Form – Denormalization – Database Security: Data Security Requirements – Protecting the Data within the Database – Granting and Revoking Privileges – Data Encryption.

UNIT-IV

PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. **Control Structures and Embedded SQL**:Control Structures – Nested Blocks – SQ L in PL/SQL – Data Manipulation – Transaction Control statements. **PL/SQL Cursors and Exceptions:** Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT…FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions.

UNIT-V

PL/SQL Composite Data Types: Records – Tables – Varrays. **Named Blocks**: Procedures – Functions – Packages –Triggers – Data Dictionary Views.

.

TEXT BOOKS

1) "Database System Concepts", Abraham Silberschatz, Henry F.Korth, S.Sudarshan , TMH 5th Edition (Units - I, II,)

2) "Fundamentals of Database Management Systems", Alexis Leon, Mathews Leon , Vijay Nicole Imprints Private Limited. (Unit – III)

3) "Database Systems Using Oracle" Nilesh Shah, 2nd edition, PHI.
UNIT-IV: Chapters 10 & 11 UNIT-V: Chapters 12, 13 & 14)

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	OPERATING SYSTEMS	**B.Sc., Computer Science**
V Semester		**Core: Theory**
		Credit: 4

Subject Description: This course presents the Operating system.

Goal: To enable the students to learn the basic of operating system, threads, deadlock, portioning, scheduling, file management

Objectives: On successful completion of the course the students should have:

- Understood operating system, threads, concurrency, semaphores, deadlock, memory portioning, paging, segmentation, virtual memory.
- Understood the Scheduling, file management, UNIX process management.

CONTENTS

UNIT – I

Introduction - OS goals and functions – History of operating system- Different kinds of operating system- Computer hardware review – Operation system concept- System calls- Operating system structure

UNIT – II

Processes and threads: Processes – threads – thread model and usage – inter process communication -**Deadlocks:** Resources- introduction to deadlocks – deadlock detection and recovery – deadlocks avoidance – deadlock prevention.

UNIT – III

Memory management: Basis memory management – virtual memory – page replacement algorithms - **Input/Output**: principles of I/O hardware - principles of I/O software.

UNIT – IV

Files systems: Files – directories - files systems implementation - **Multiple processor system**: multiprocessors – multi computers - distributed systems.

UNIT – V

UNIX and LINUX: History of UNIX - overview of UNIX – processes in UNIX - memory management in UNIX – input/ output in UNIX- UNIX file system – security in UNIX.

TEXT BOOK

"Modern Operating Systems", Second Edition, Andrew S. Tanenbaum, PHI private Limited, New Delhi, 2008

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	SOFTWARE ENGINEERING	**B.Sc., Computer Science**
V Semester		**Core: Theory**
		Credit: 4

Subject Description: This Subject deals with the Software Engineering

Goal: To enable the students to learn the basic of To learn about Software Engineering

Objectives: On Successful Completion of this subject the students should have: - Design Process, Analysis Concepts , User Interface Design.

CONTENTS

UNIT – I

Introduction – Software Engineering Discipline – Evolution and Impact – Programs Vs Software Products – Emergence of Software Engineering – Changes in Software Development Practices – Computer Systems Engineering.

Software Life Cycle Models: Use of a Life Cycle Models – Classical Waterfall Model – Iterative Waterfall Model – Prototyping Model – Evolutionary Model – Spiral Model.

Software Project Management: Responsibilities of a Software Project Manger – Project Planning – Metrics for Project Size Estimation – Project Estimation Techniques – COCOMO – A Heuristic Estimation Technique – Staff Level Estimation – Scheduling – Organization and Team Structures – Staffing – Risk Management – Software Configuration Management.

UNIT – II

Requirements Analysis and Specification: Requirements Gathering and Analysis – Software Requirements Specification (SRS) – Formal System Development Techniques.

Software Design: Characteristics of a Good Software Design – Cohesion and Coupling – Neat Arrangement – Software Design Approaches – Object-Oriented Vs Function – Oriented Design.

UNIT – III

Function-Oriented Software Design: Overview of SA/SD Methodology – Structured Analysis – Data Flow Diagrams(DFDs) – Structured Design - Detailed Design – Design Overview.

Object Modeling Using UML: Overview of Object-Oriented Concepts – UML – UML Diagrams – Use Case Model – Class Diagrams – Interaction Diagrams – Activity Diagrams – State Chart Diagram.-Object-Oriented Software Development: Design Patterns – Generalized OOAD Process.

UNIT – IV

User Interface Design: Characteristics of a User Interface – Basic Concepts – Types of User Interfaces – Component-Based GUI Development – User Interface Design Methodology.

Coding and Testing: Coding – Code Review – Testing – Unit Testing – Black-Box Testing – White-Box Testing – Debugging – Program Analysis Tools – Integration Testing – System Testing

UNIT – V

Software Reliability and Quality Management: Software Reliability – Statistical Testing – Software Quality – Software Quality Management System – ISO 9000 – SEI Capability Maturity Model.

Computer Aided Software Engineering: CASE Environment – CASE support in Software Life Cycle – Characteristics of CASE Tools – Second Generation CASE Tool – Architecture of a CASE Environment.

Software Maintenance: Characteristics of Software Maintenance – Software Reverse Engineering – Software Maintenance Process Models – Estimation of Maintenance Cost.

Software Reuse: Introduction – Issues in any Reuse Program – Reuse Approach – Reuse at Organization Level.

TEXT BOOK:

1. Fundamentals of Software Engineering - RAJIB MALL, Prentice Hall of India Private Limited, 2008

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	Practical - III (VB and RDBMS)	B.Sc., Computer Science
V Semester		Core: Practical-III
		Credit: 3

Visual programming Lab List

.Develop a VB Project to Perform following Operations in MS-ACCESS database using DAO .

A). Move First Record

B).Move Next Record

C).Move Previous Record.

D).Move Last Record.

1. Develop a VB Project to Insert a Record in MS-ACCESS database using ADO.
2. Develop a VB Project to Modify a record in MS-ACCESS database using ADO.
3. Construction of an Arithmetic Calculator (Simple)
4. Personal Information System (Using Tables)
5. Railways Reservation System (Using Tables)
6. Library Information System (Using Tables).

RDBMS Programming Lab List

1. Create the following table *(PK - Primary Key, FK – Foreign Key)* cat_head, route_head, place_head, route_detail, ticket_detail, ticket_head with the mapping given below:

(a). cat_head (cat_code PK)	route_head (cat_code FK)
(b).route_head (route_id PK)	route_detail (route_id FK)
(c). ticket_head (tick_no PK)	ticket_detail (tick_no FK)
(d). place_head (place_id PK)	route_detail (place_id FK*)*

(i) Alter the table ticket_header to add a check constraint on ticket_no to accept values between 1 and 500

(ii) Alter table route_header to add a column with data type as long.

2. Data Manipulation Basics

(a) Insert values to above tables

(b) Display only those routes that originate in madras and terminate at Cochin

(c) Display only distinct category code from the table route_header in descending manner.

(d) Update the table route_header to set the distance between madras and Coimbatore as 500

3. Queries

(a). Select rows from ticket_details such that ticket number greater than any ticket_number in Ticket_header.

(b). Select rows from route_header such that the route_id are greater than all route_id in route_detail Where place_id is "100".

(c). Create view tick from ticket_header with Ticket_no, Origin, Destination, route_id

PL/SQL:

1. a) Creation of student information records containing Roll number, Name, Subject Code Marks etc.,

   b) Finding the total and average marks, result for each student table.

   c) Record Manipulations such as Deletion, Modification, Addition and Counting the Record.

2. Writing a PL\SQL block to find the total amount based on rules similar to the following
   a. If UNIT <= 100 then price is 50 paise per UNIT
   b. If UNIT > 100 and <= 150 Rs. 1/- per UNIT
   c. If UNIT >150, Rs. 1.50 per UNIT

3. Write a PL/SQL block to count the number of students in each department. If the count value is greater than 50 in each department, then transfer the excess record into another table department wise. Use exception handler to handle this routine.

4. Write a Database trigger to implement the concept of master detail relationship

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	COMPUTER NETWORKS	B.Sc., Computer Science
VI Semester		Core: Theory
		Credit: 4

Subject Description: This course presents the computer networks

Goal: To enable the students to learn the basic of computer networks, layers, network security.

Objectives: On successful completion of the course the students should have:

- Understood the uses of computer networks, network hardware, network software, Layers
- Understood the network security.

CONTENTS

UNIT – I

Introduction: Uses of Computer Networks - Network Hardware – LAN, MAN and WAN- Network Software - Reference Models- Example Networks- Connection oriented Networks: X. 25, Frame Relay and ATM - Ethernet.

UNIT – II

Physical Layer: The Theoretical Basis For Data Communication - Guided Transmission media - Wireless Transmission - Communication Satellites- Public Switched Telephone Network- The Mobile Telephone System

UNIT – III

Data Link Layer: Data Link Layer Design Issues - Error Detection and Correction – Elementary data link protocols - Sliding Window Protocols - Protocols Verification - Channel Allocation Problem- Multiple Access Protocols

UNIT – IV

Network Layer: Network Layer Design Issues- Routing Algorithms-Congestion Control Algorithms- Quality of Service -Internetworking

Transport Layer: Transport Services – elements of transport protocols – simple transport protocols.

UNIT – V

Application layers: Domain name system – Electric mail – The World Wide Web.

Network security: Cryptograph- Symmetric- key algorithms- public – key algorithms – social issue.

TEXT BOOK:

1.“Computer Networks” Andrew S. Tanenbaum , Fourth edition,PHI private Ltd, New Delhi , 2008

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	MULTIMEDIA AND ITS APPLICATIONS	B.Sc., Computer Science
VI Semester		Core: Theory
		Credit: 4

Subject Description: This course presents the multimedia systems and applications

Goal: To enable the students to learn multimedia systems and applications

Objectives: On successful completion of the course the students should have:

- Understood the multimedia application, architecture, compression and decompression, data and file format TIFF, MIDI, JPEG DIB AVI INDEO.
- Understood the multimedia input/output technologies, design and user interface.

CONTENTS

UNIT – I

Multimedia element – Multimedia application - Multimedia system architecture – evolving technologies for multimedia system – Defining object for multimedia system - Multimedia data interface system – the need of data compression - Multimedia databases.

UNIT – II

Compression and Decompression: types of compression – binary image compression schemes – Color, Gray Scale, and still Video image compression – video image compression - audio compression.

UNIT – III

Data and File format standard – rich-text format – TIFF file format – resource interchange file format – MIDI file format – JPEG DIB file format for still and motion image – AVI INDEO file format

UNIT – IV

Multimedia input/output technologies: key technology issues - Pen input – Video and image Display systems – Print output technologies – Digital voice and audio – Video images and Animation – Full motion video

UNIT – V

Multimedia application design: Multimedia application classes – Type of multimedia system – Virtual Reality design - Organizing multimedia databases.

Multimedia authoring and user interface: multimedia authoring systems – hypermedia application design considerations – user interface system.

TEXT BOOK:

1. "Multimedia system Design ", Prabhat.K.Andleig, Kiran Thakrar, PHI Private limited, New Delhi, 2008

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	WEB TECHNOLOGY	**B.Sc., Computer Science**
VI Semester		**Core: Theory**
		Credit: 4

Subject Description: This subject deals TCP/IP, FTP, WWW and Web technologies like ASP, JVM, DCOM, XML and WAP.

Goal: Knowledge on various Web technologies

Objective: To inculcate knowledge web technological concepts and functioning internet

CONTENTS

UNIT-I

TCP/IP: TCP/IP Basics – Why IP address – Logical Address - TCP/IP Example- The concept of IP address – Basics of TCP – Features of TCP – Relationship between TCP and IP – Ports and Sockets – Active Open and Passive Open - TCP Connections – What makes TCP reliable? – TCP Packet format - Persistent TCP connections – UDP – Differences between TCP and UDP.

UNIT-II

DNS – E-mail – FTP – TFTP – History of WWW – Basics of WWW and Browsing – Local information on the internet – HTML – Web Browser Architecture – Web Pages and Multimedia – Remote Login (TELNET).

UNIT-III

Introduction to Web Technology: Web pages – Tiers – Concept of a Tier – Comparison of Microsoft and Java Technologies – Web Pages – Static Web Pages – Plug-ins – Frames – Forms. **Dynamic Web Pages:** Need – Magic of Dynamic Web Pages – Overview of Dynamic Web Page Technologies – Overview of DHTML – Common Gateway Interface – ASP – ASP Technology – ASP Example – Modern Trends in ASP – Java and JVM – Java Servlets – Java Server Pages.

UNIT-IV

Active Web Pages: Active Web Pages in better solution – Java Applets – Why are Active Web Pages Powerful? – Lifecycle of Java Applets – ActiveX Controls – Java Beans. **Middleware and Component-Based E-Commerce Architectures:** CORBA – Java Remote Method Invocation – DCOM. **EDI:** Overview – Origins of EDI – Understanding of EDI – Data Exchange Standards – EDI Architecture – Significance of EDI – Financial EDI – EDI and internet.

UNIT-V

XML: SGML – Basics of XML – XML Parsers – Need for a standard. **WAP:** Limitations of Mobile devices – Emergence of WAP – WAP Architecture – WAP Stack – Concerns about WAP and its future – Alternatives to WAP.

TEXTBOOKS:

1. **WEB TECHNOLOGIES TCP/IP to Internet Applications Architectures – Achyut S Godbole & Atul Kahate**, 2007 ,TMH.

(UNIT-I: 3.1-3.5,4.1-4.12 UNIT-II: 5.1-5. 4,6.1-6.7 UNIT III:8.1-8.1,9.1-9.13
UNIT IV: 10.1-10.7,15.1-15.3,16.1-16.8 UNIT-V: 17.1-17.4,18.1-18.6)

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	Practical - IV WEB DESIGNING	**B.Sc., Computer Science**
VI Semester		**Core: Practical - IV**
		Credit: 3

WEB DESIGNING Practical Programming List

1. Write HTML code to develop a web page having the background in red and title "My First Page" in any other color, giving details of your name, age, address.

2. Write HTML code to design a page containing a text in a paragraph give suitable heading style.

3. Create a page to show different attribute of Font tags - italic, bold, underline.

4. Write a HTML code to create a web page of blue color and display links in red color.

5. Write HTML code to create a WebPages that contains an insert an Image at its left hand side of the page when user clicks on the image; it should open another web page.

6. Create a web Page using HREF tag having the attribute ALINK, VLINK etc.

7 Create a web page, when user clicks on the link it should go to the bottom of the page.

8. Write a HTML code to create a web page of pink color and display moving message in red color.

9. Create a web page, showing an ordered list of name of your five friends.

10. Create a HTML document containing a nested list showing the content page of any book.

11. Create a web page, showing an unordered list of name of your five friends.

12. Create a web page which should contain a table having two rows and two columns and fill in the data in the table created.

13. Create the following table in HTML with Dummy Data

Name of the train	**Place**	**Destination**	**Train No.**	**Time**		**Fare**
				Arrival	Departure	

14.

Create a web page which should divide a page into two equal frames & 3 frames

Frame – 1	Frame - 2

Frame – 1	Frame - 2
	Frame - 3

College Name	
Links	Information

15. Create a web page having two frames one containing lines and another with contents of the link. When link is clicked appropriate contents should be displayed on Frame.

16. Create a home page for a your college in following format

17. Design a form using all input types.

18. Create a simple form accepting – Name, Register No. and Submit Button.

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	**Elective – I** PC HARDWARE AND TROUBLESHOOTING	**B.Sc., Computer Science**
V Semester		**Elective – I : Theory**
		Credit: 5

CONTENTS

UNIT – I:

Introduction to PC: What is a PC?–Types–System components. Processor: Processor specifications – Modes – Features – Manufacturing – Physical packaging – Multi Core Processors – Processor Upgrades – Processor Troubleshooting Techniques.

UNIT – II:

Motherboards and Buses: Motherboard form factors –Motherboard connectors - System Bus Types Functions & Features - Types of I/O buses – System resources - Resolving Resource Conflicts – Motherboard Selection Criteria.

UNIT – III:

Memory: Memory Basics: ROM – DRAM - Cache Memory – SD RAM – DDR SDRAM Memory Modules: SIMM- DIMM- RIMM. Hard disk Storage: Definition of Hard disk –Hard disk Drive Components – Drive Operation – Features.

UNIT –IV:

BIOS: BIOS Basics – BIOS Hardware/Software - Motherboard ROM BIOS – Upgrading the BIOS – Preboot Environment – CMOS Setup Specifications- Plug and Play BIOS – BIOS Error Messages.

UNIT – V:

System Assembling and Maintenance: System Assembly – Motherboard Installation – Troubleshooting New Installations – Installing the Operating Systems – PC Diagnostics – Diagnostics Software - PC Maintenance Tools – Preventive Maintenance.

TEXT BOOK:

"Upgrading & Repairing PCs", Scott Mueller, Pearson Education Pub, 2008. 18th Edition.

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2008-09 Onwards	**Elective – I** CLIENT/SERVER TECHNOLOGY	**B.Sc., Computer Science**
V Semester		**Elective – I : Theory**
		Credit: 5

Subject Description: This subject deals with concepts of Client / Server computing. Also it deals with various components of Client / Server Applications.

Goal: To enable the students to learn the data base systems, relational algebra and calculus, normal forms, parallel and distributed data bases.

Objectives: To inculcate knowledge on Client / Server concepts

CONTENTS

UNIT-I

Client/Server Computing – Advantages of Client / Server Computing – Technology Revolution – Connectivity – Ways to improve Performance – How to reduce network Traffic

UNIT-II

Components of Client/Server Applications – The Client: Role of a Client – Client Services – Request for Service. **Components of Client/Server Applications – The Server:** The Role of a Server – Server Functionality in Detail – The Network Operating System – What are the Available Platforms – The Server Operating system.

UNIT-III

Components of Client/Server Applications – Connectivity: Open System Interconnect – Communications Interface Technology – Interprocess communication – WAN Technologies.

UNIT-IV

Components of Client/Server Applications–Software: Factors Driving demand for application software development – Rising Technology Staff costs – Need to improve Technology – Need for Common Interface across Platforms – Client/Server System Development Methodology. **Components of Client/Server Applications–Hardware:**

Hadware/Network Acquisition – PC-Level Processing Units – Machintosh, notebooks, Pen – UNIX Workstation – x-terminals – Disk, Tape,
Optical Disks, NIC and UPS.

UNIT-V

Components of Client/Server applications–Service and Support: System Administration. **The Future of Client/Server Computing:** Enabling Technologies – Transformational Systems.

TEXTBOOK

1. **CLIENT/SERVER COMPUTING – Patrick Smith, Steve Guenferich ,** 2nd edition, Prentice Hall of India Private Limited, New Delhi (Chapters 1-8 & 10)

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	**Elective – I** MOBILE COMPUTING	**B.Sc., Computer Science**
V Semester		**Elective – I : Theory**
		Credit: 5

CONTENTS

UNIT – I

Introduction: Applications – A Simplified Reference Model. Wireless Transmission: Cellular System. Medium Access Control : Motivation for a Specialized MAC : Hidden and exposed terminals – Near and far terminals – SDMA – FDMA – TDMA : Fixed TDM – Classical Aloha – Slotted Aloha – Carrier Sense Multiple Access – Demand Sense Multiple Access – PRMA Packet Reservation Multiple Access – Reservation TDMA – Multiple Access With Collision Avoidance – Polling – Inhibit Sense Multiple Access. CDMA: Spread Aloha multiple access.

UNIT – II

Telecommunication Systems: GSM: Mobile Services – System Architecture – Radio Interface – Protocols - Localization And Calling – Handover – Security – New Data Services. DECT: System Architecture – Protocol Architecture TETRA.

Unit – III

UMTS and IMT 2000: UMTS Releases And Standardization – UMTS Architecture - UMTS Radio Interface – UTRAN – Core Network – Handover. Satellite System: History – Applications – Basics: GEO 173 – LEO 174 – MEO 175. Routing – Localization – Handover. Broad Cast Systems: Overview – Cyclical Repetition Of Data – Digital Audio Broadcasting – Digital Video Broadcasting – Convergence of Broadcasting and Mobile Communication.

UNIT – IV

Wireless LAN: Infra Red Vs Radio Transmission – Infrastructure And Ad-Hoc Network – IEEE 802.11: System Architecture – Protocol Architecture – Physical Layer –

Medium Access Control Layer – MAC Management – HIPERLAN: HIPERLAN1 -WATM – BRAN – HiperLAN2. Bluetooth: User scenarios – Architecture – Radio layer – Base band layer – Link manager protocol.

UNIT – V

Mobile Network Layer: Mobile IP – Dynamic Host Configuration Protocol – Mobile Ad-Hoc Networks. Mobile Transport Layer: Traditional TCP-Classical TCP Improvement-TCP Over 2.5/3G Wireless Networks – Performance Enhancing Proxies.

TEXT BOOK

1. **"Mobile Communications",** Jochen Schiller **,**Pearson Education.**,**Second Edition.

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	Elective – II SOFTWARE TESTING	B.Sc., Computer Science
VI Semester		Elective – II: Theory
		Credit: 5

CONTENTS

UNIT -I

Building a Software Testing Strategy – Software Testing Design Techniques – Software Testing Tools and Selection of Test Automation Products – Software Testing Lifecycle and Software Testing Process

UNIT -II

Testing Effort Estimation and Test Planning – Software Test Effort Estimation Technique – Pre-Development Testing Requirements and Design Phase – Best Practices in Program Phase Unit, System and Integration Testing

UNIT- III

A Case Study on Acceptance Testing – Implementation an Effective Test Management Process – Building an Effective Test Organization – Performance Issues and Optimization Techniques

UNIT -IV

Choosing a Load Testing Strategy – Dodging the Bullets – Validating Mission-Critical Server Software for Reliability – Probing the Blind Spot – Testing in Today's Business and Usability

UNIT- V

Testing of Web-based Applications – Testing of Embedded Software System used in Aerospace Applications – Testing Application for Security – Testing Metrics, Best Practices and Benchmarks

TEXT BOOK

1. "Software Testing Effective Methods, Tools and Techniques", Renu Rajani and Pradeep Oak , Tata McGraw-Hill

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	Elective – II E-COMMERCE	B.Sc., Computer Science
VI Semester		Elective – I I: Theory
		Credit: 5

CONTENTS

UNIT – I

Electronic commerce: Electronic Commerce – Electronic Data Interchange – Value Added Networks - Electronic Commerce over the internet – Internet Commerce Examples – Commerce Net. PCs and Networking: Networking – Communication Media. Electronic Mail: Computer communication system – ISO's Open System Interconnection model – Electronic Mail – The X.400 message handling system – internet mail – Email security – X.500 directory services – Mail user agent .

UNIT – II

The Internet: The Internet: A Brief Introduction- Internet Communication Protocols- Internet Services and Resources – Internet Mail – Internet Search – Concerns About The Internet – Browsers – Hypertext Markup Language – Java – The Java Electronic Commerce Framework – Internet 2. Intranets: Intranet – Intranet Services – Intranet Implementation – The Webmaster. Electronic Data Interchange: Electronic Data Interchange – Costs and Benefits – Components of EDI Systems – EDI Implementation Issues – Legal Aspects.

UNIT – III

The UN/EDIFACT Standard: Introduction – An EDIFACT Message – Interchange structure – UN/EDIFACT Message Directories. The Internet and Extranets for Electronic Commerce: E-Commerce – Commerce over The Internet – Commerce Over Extranets. Identification and Tracking Tools for Electronic Commerce: The EAN System – EANCOM – Article Numbering – Bar Coding – The serial shipping container code and the EAN label – EAN Location Numbers – How It Works: Warehousing Example. Internet Bandwidth and Technology Issues: Bandwidth Issues – Technology Issue for the Internet/NII – NII Standard – NII services – Actors in the NII – NII Agenda – GII.

UNIT – IV

Security Issues: Security Concerns – Security solutions – Electronic Cash over the Internet – Security and UN/EDIFACT Message – Internet Security – Guidelines for Cryptography Policy. Business Process Reengineering: Introduction – Approach to BPR – Strategic Alignment Model – BPR Methodology. Management of Change: Change Management – Change Management in Public Administration – The Implement Plan.

UNIT – V

Legal Issues: Legal Issues – Risks: Paper Documents Versus Electronic Document – Technology for Authenticating an Electronic Document – Laws for E-Commerce – EDI Interchange Agreement – Legal Issues for Internet Commerce. E-Commerce in India: EDI in India. The Internet in India – Laws for E-Commerce in India. Getting Started: Getting Connected: what do you need? – Setting Up a Website – web Servers – Business – To-Business EC – Payment for Goods and Services – Bottlenecks.

Case Studies: EDI in Indian customs – US Electronic Procurement – Banks – EDI Pilot Project in the Automotive Industry.

TEXT BOOK:
E-Commerce Strategy, Technologies and Applications David Whiteley Tata Mc-Graw-Hill

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	Elective – II SOFTWARE PROJECT MANAGEMENT	B.Sc., Computer Science
VI Semester		Elective – II: Theory
		Credit: 5

CONTENTS

UNIT - I

Introduction to software project management – Step Wise: an overview of project planning – Programme management and project evaluation.

UNIT - II

Selection of an appropriate project approach – Software effort estimation – Activity planning

UNIT - III

Risk management: Introduction – Risk – Categories of risk – A framework for dealing with risk – Risk identification –Risk assessment – Risk planning - Risk management – Evaluating risk to the schedule. Resource allocation

UNIT - IV

Monitoring and control : Creating the framework – Collecting the data – Visualizing progress – Cost monitoring – Earned value analysis – Prioritizing monitoring – Change control. Managing contracts: The supply process – Types of contract –Stages in contract placement – Typical terms of a contract – Contract management – Acceptance.

UNIT - V

Managing people and organizing teams: Understanding behavior – Organizational behavior – Motivation – Working in groups – Decision making – Leadership – Organizational structures – Dispersed and virtual teams – The influence of culture – Stress- Health and safety. Software quality: The place of software quality in project planning - The importance of software quality – Defining software quality – Practical software quality measures – Product versus process quality management – External standards – Techniques to help enhance software quality – Quality plans.

TEXT BOOK

1. " Software Project Management " by Bob Hughes and Mike Cotterell, Tata McGraw-Hill 4th Edition

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	Elective – III DATA MINING AND WARE HOUSING	B.Sc., Computer Science
VI Semester		Elective – III: Theory
		Credit: 5

CONTENTS

UNIT – I

Introduction: Data mining application – data mining techniques – data mining case studies- the future of data mining – data mining software - **Association rules mining: Introduction**- basics- task and a naïve algorithm- apriori algorithm – improve the efficient of the apriori algorithm – mining frequent pattern without candidate generation (FP-growth) – performance evaluation of algorithms.

UNIT – II

Classification : Introduction – decision tree – over fitting and pruning - DT rules-- naïve bayes method- estimation predictive accuracy of classification methods - other evaluation criteria for classification method – classification software

UNIT – III

Cluster analysis: cluster analysis – types of data – computing distances-types of cluster analysis methods - partitioned methods – hierarchical methods – density based methods – dealing with large databases – quality and validity of cluster analysis methods - cluster analysis software.

UNIT – IV

Web data mining: Introduction- web terminology and characteristics- locality and hierarchy in the web- web content mining-web usage mining- web structure mining – web mining software - **Search engines:** Search engines functionality- search engines architecture – ranking of web pages.

UNIT – V

Data warehousing: Introduction – Operational data sources- data warehousing - Data warehousing design – Guidelines for data warehousing implementation - Data warehousing metadata - **Online analytical processing (OLAP):** Introduction – OLAP characteristics of

OLAP system – Multidimensional view and data cube - Data cube implementation - Data cube operations OLAP implementation guidelines

TEXT BOOK:

1. “Introduction to Data mining with case studies”, G.K. Gupta, PHI Private limited, New Delhi, 2008.

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	**Elective – III** COMPILER DESIGN	**B.Sc., Computer Science**
VI Semester		**Elective – III: Theory**
		Credit: 5

CONTENTS

UNIT – I

Introduction to Compliers: Compliers and Translator – Need of Translator – The structure of a Complier – Lexical analysis – Syntax analysis – Intermediate code generation – optimization – code generation – Complier – writing tools. Finite automata and lexical Analysis: The role of the lexical analysis – A simple approach to the design of lexical analyzers. Regular expressions to finite automata – Minimizing the number of states of a DFA.

UNIT – II

The Syntactic specification of programming languages: context free grammars – derivations and parse trees – capabilities of context free grammars. Basic parsing techniques: Parsers – shift – reduce parsing – operator – precedence parsing – top down parsing – predictive parsers – automatic construction of efficient parsers: LR parsers – the canonical collection of LR (o) items - constructing SLR parsing tables – constructing canonical LR parsing tables.

UNIT – III

Syntax – directed translation: syntax – directed translation schemes – implementation of syntax – directed translators – intermediate code – postfix notation – parse trees and syntax trees – 3 address code – quadruples and triples – translation of assignment statements – Boolean expressions – statements that alter the flow of control. Symbol tables: the contents of a symbol table – data structures for symbol table – representing scope information.

UNIT – IV

Run time storage administration: Implementation of a simple stack allocation scheme – implementation of block-structured languages – storage allocation in block structured

languages. Error deduction and recovery: errors – lexical phase errors – syntactic phase errors – semantic errors.

UNIT – V

Introduction of code optimization: The principle sources of optimization – loop optimization – the DAG representation of basic blocks – value numbers and algebraic laws – Global data flow analysis. Code generation: Object programs – problems in code generation – a machine model – a simple code generator – register allocation and assignment – code generation from DAG's – peepholes optimization.

TEXT BOOK

1. "Principles of Complier Design", Alfred V.Aho, Jeffrey D.Ullman, Narosa Pub House.

PERIYAR UNIVERSITY, SALEM – 636 011

2008-09 Onwards	**Elective – III**	**B.Sc., Computer Science**
VI Semester	**ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEM**	**Elective – III: Theory**
		Credit: 5

CONTENTS

UNIT -I

Introduction of Artificial Intelligence: Overview of Artificial Intelligence – Knowledge: General Concepts – Lisp and other AI Programming Languages.

UNIT -II

Knowledge Representation – Formalized Symbolic logics – Dealing with Inconsistencies and Uncertainties – Probabilistic Reasoning - Structured Knowledge : Graphs, Frames and Related Structures – Object – Oriented Representations.

UNIT – III

Knowledge Organization and Manipulation: Search and Control Strategies – Matching Techniques – Knowledge Organization and Management

UNIT – VI

Perception and Communication: Natural Language Processing – Pattern Recognition – Visual Image Understanding.

UNIT -V

Expert System Architectures: Rule-Based System Architectures – Nonproduction System Architectures – Dealing with Uncertainty – Knowledge Acquisition and Validation – Knowledge system Building Tools.

TEXT BOOK

1. Introduction to Artificial Intelligence and Expert System – DAN W. Parrerson

PERIYAR UNIVERSITY, SALEM – 636 011

SBEC-1: OFFICE AUTOMATION	
Course	Common for B.Sc(CS) & BCA
Effective from	2008 -2009 and Onwards
Semester	II
SBEC	**SKILLED BASED ELECTIVE COURSE – I**

CONTENTS

UNIT – I

Getting Started: Starting a Program – Identifying Common Screen Elements – Choosing Commands – Finding Common Ways to Work – Getting Help with Office

UNIT – II

MS-WORD: Learning Word Basics – Formatting a Word Document – Working with Longer Document.

UNIT – III

MS-EXCEL: Creating a Simple Spreadsheet – Editing a Spreadsheet – Working with Functions and Formula – Formatting Worksheets – Completing Your Spreadsheet – Creating Charts

UNIT – IV

MS-POWERPOINT: Creating and Viewing Presentations – Editing a Presentation – Working with Presentation Special Effects

UNIT – V

MS-ACCESS: Creating an Access Database – Modifying an Access Database-reports

TEXT BOOK:

1. Microsoft Office XP – fast & easy, DIANE KOERS, Prentice Hall of India Private Limited, 2001

PERIYAR UNIVERSITY, SALEM – 636 011

SBEC-II: DTP Packages	
Course	Common for B.Sc(CS) ,B .Sc(IS)& BCA
Effective from	2008 -2009 and Onwards
Semester	IV
SBEC	**SKILLED BASED ELECTIVE COURSE – II**

UNIT – I

INTRODUCTION: Choosing the printing house - Hardware Requirement for DTP - General Design Considerations - Text Organization – Design Common Media Publication.

UNIT – II

PAGEMAKER: Getting Started with PageMaker – Working in PageMaker – The PageMaker window – Working with text – Multiple Text Block. **Editing Text:** Making Changing in the Publication – Searching by Format – Replacing the Text **Formatting Text:** Changing the Font Size – Making the text bold – Removing Boldface from the text – Underlining the text – Aligning the text.

UNIT – III

Master pages: Adding Text to the Publication – Element on master pages – Creating a new Publication – Working with Columns. **Managing and Printing a publication:** Page Orientation – Page Numbering – Page Size – Dimension – Table of Contents – Managing Books – Printing a Publication.

UNIT – IV

PHOTOSHOP- Starting Photoshop CS2 - Photoshop Program Window **Working with Images:** Editing Images – Color Modes

UNIT – V

Making Selections: Moving a Portion of Images – Editing Selections – Filling a Selection - Transforming Selections **Painting Tools**: Drawing Tools –Retouching Tools.

TEXT BOOK

"COMDEX-DTP Course Kit" Vikas Gupta, Dreamtech Publishers- New Delhi, 2008.

PERIYAR UNIVERSITY, SALEM – 636 011

SBEC - III: Multimedia Package	
Course	Common for B.Sc(CS) ,B .Sc(IS)& BCA
Effective from	2008 -2009 and Onwards
Semester	V
SBEC	**SKILLED BASED ELECTIVE COURSE – III**

UNIT – I

Introducing Flash: How Flash works – Uses of Flash – Obtaining Flash – Installing Flash – The Flash Environment- Getting Started: The Timeline – The Stage – Tools and toolbars –

UNIT – II

The Menu bar – Properties Inspector – Panels – Viewing options – Quick Start templates – Accessibility Creating Objects: Stage and overlay objects – Tools panel. Editing Objects : Grouping objects – Free Transform tool – Reshaping objects – Aligning objects

UNIT – III

Pixel snapping – Stacking order – Cut aways – Paste in place. Color and Text: Standard Color palette – Adding solid colors – Adding gradients – Fill Transform tool – More color options – Selecting colors – Adding, Formatting and Manipulating text.

UNIT – IV

Symbols and Instances: Definitions – The Library – Converting objects to symbols – Creating a new symbol – Symbol Editing Mode – Editing symbols – Editing Instances.
Sound and Video: Using sound – Importing sound – Editing sounds, Adding video – Manipulating video.

UNIT – V

Frames and Layers: Working with frames – Adding frames – Deleting and copying frames – Frame properties – Working with layers – Inserting layers – Deleting and copying layers – Animation: Elements of animation – Scenes – Frame-by-frame animation – Motion tweening – Motion guides – Shape tweening – Animating text – Distribute text to layers – Movie clips.

Text Book:

1. “FLASH MX in easy steps” - NICK VANDOME, Dreamtech, New Delhi.

PERIYAR UNIVERSITY, SALEM – 636 011

SBEC – IV : SOFT SKILLS	
Course	Common for B.Sc(CS) ,B .Sc(IS)& BCA
Effective from	2008 -2009 and Onwards
Semester	V
SBEC	**SKILLED BASED ELECTIVE COURSE - IV**

UNIT I

Nature of technical communication: Stages of communication – Channels of communication – Nature of technical communication – Importance and need for technical communication – Technical communication skills.

UNIT II

The Listening process: Types of listening – Listening with a purpose – Barriers to listening – The speech process – Conversion and oral skills – Body language.

UNIT III

Job interviews: Pre – interview preparation techniques – Interview questions – Answering strategies – Frequently asked interview questions – Projecting a positive image – Alternative interview formats.

UNIT IV

Group Discussion: Nature of group discussion – Characteristics of successful group discussions – Selection group discussion – Group discussion strategies – Techniques for individual contribution – Group interaction strategies.

UNIT V

Presentation Skills: Planning the presentation – Preparing the presentation – Organizing your presentation – Rehearsing the presentation – Improving delivery

TEXT BOOK

Effective Technical Communication , M. Ashraf Rizvi, Tata McGraw – Hill Publishing Company Limited , New Delhi.

PERIYAR UNIVERSITY, SALEM – 636 011

SBEC - V : HTML and Web Design	
Course	Common for B.Sc(CS) ,B .Sc(IS)& BCA
Effective from	2008 -2009 and Onwards
Semester	VI
SBEC	**SKILLED BASED ELECTIVE COURSE - V**

UNIT – I

Intermediate HTML: Introduction – unordered list – nested and ordered list – Basic HTML Tables – Intermediate HTML table and Formatting – basic HTML Forms and Formatting –

UNIT – II

More Complex HTML Forms – Frameset Element – Nested Frameset. Style Sheets and Graphics: Introduction to Style sheets – Formatting Text by Using Style Sheets – Formatting Paragraphs by Using Style Sheets

UNIT – III

Graphics: Selecting a Graphics Format – Preparing Graphics for Web Use – Inserting Graphics – Arranging Elements on the Page – Controlling Image Size and Padding –

UNIT – IV

Hyperlinking from Graphics – Utilizing Thumbnail Graphics – Including Alternate Text for Graphics.

Navigation: Creating Navigational Aids – Creating Tables – Formatting Tables Layouts: Creating Division-Based Layouts

UNIT – V

Creating User Forms – Using Frames for Layout – Incorporating Audio and VideoDynamic HTML: Introduction

TEXT BOOK

Microsoft Step by Step – HTML and XH, Faithe Wempen, Prentice Hall of India Private Limited, New Delhi, 2006

PERIYAR UNIVERSITY, SALEM – 636 011

SBEC-VI : Web Programming (Java script and VB script)	
Course	Common for B.Sc(CS) ,B .Sc(IS)& BCA
Effective from	2008 -2009 and Onwards
Semester	VI
SBEC	**SKILLED BASED ELECTIVE COURSE – VI**

UNIT – I

Java script: Introduction to Scripting: Introduction – memory concepts – arithmetic – decision-making – java script Internet & www resources. Java script Arrays: Passing arrays to functions – Multi Subscripted array.

UNIT – II

Java Script Control Structures – Selection Structure: If – If Else, Repetition Structure: While – For – Do While – Logical operators.

UNIT – III

Java Script Functions: Introduction – program modules in java script programmer defined functions – Function Definition: Duration of identifiers – scope rules – recursion – java script global functions

UNIT – IV

Java Script Objects: Introduction – Thinking about objects – Math, Strings, Date, Boolean and Number Objects.

UNIT – V

VB Script: Introduction- Operators – Data Type and Control Structures – VB Script Functions – Array – String Manipulation – Classes and Objects – Operator Precedence Chart- The MsgBox functions – input boxes – controlling the flow of code -Simple Program

Text Book:

Web Technology – A Developer's Perspective, N.P. Gopalan, J. Akilandeswari **,** Prentice Hall of India Private Limited, New Delhi,, New Delhi.

PERIYAR UNIVERSITY, SALEM – 636 011

NMEC - I : Fundamentals of Information Technology	
Course	**Offered to other department Students (Other than CA Departments)**
Effective from	2008 -2009 and Onwards
Semester	III
NMEC	Non Major Elective Course

UNIT – I

Introduction to Information Technology: Information Technology – Understanding the Digital Domain – Representing Numbers and text in Binary- binary codes

UNIT - II

Fundamentals of Computers: Computer Hardware – Software – system software- application software- Translators- Computer languages-MLL-HLL-ALL

UNIT - III

Transmission of Information: Fundamentals of Communications – Fiber Optics – Wireless Communications -ISDN

UNIT - IV

Computer Networking: Goals – Topologies - Local Area Networks – Wide Area Networks – Communication Protocols-

UNIT - V

Internet: Internet Architecture –- Types-Network Security-Internet applications- Internet address- domain name- E-mail

TEXT BOOK:

1. Introduction to Information Technology Pelin Aksoy, Laura DeNardis,Cengage Learning India Private Limited, First Indian Reprint 2008.

PERIYAR UNIVERSITY, SALEM – 636 011

NMEC-I : Basics of Computers and Office Automation	
Course	**Offered to other department Students (Other than CA Departments)**
Effective from	2008 -2009 and Onwards
Semester	III
NMEC	Non Major Elective Course

UNIT – I

Introduction to Computers – Five Generations of Modern Computers – Classification of Digital Computer Systems – Anatomy of a Digital Computer – Memory Units – Input and Output Devices – Auxiliary Storage Devices.

UNIT – II

Getting Started: Starting a Program – Identifying Common Screen Elements – Choosing Commands – Finding Common Ways to Work – Getting Help with Office

UNIT – III

MS-WORD: Learning Word Basics – Formatting a Word Document – Working with Longer Document.

UNIT – IV

MS-EXCEL: Creating a Simple Spreadsheet – Editing a Spreadsheet – Working with Functions and Formula – Formatting Worksheets – Completing Your Spreadsheet – Creating Charts

UNIT – V

MS-POWERPOINT: Creating and Viewing Presentations – Editing a Presentation – Working with Presentation Special Effects

TEXT BOOK:

1. Introduction to Computers – Alex Leon, Mathew Leon (UNIT – I)
2. Microsoft Office XP – fast & easy (UNIT II, III, IV & V), DIANE KOERS
   Publisher: Prentice Hall of India Private Limited, New Delhi, 2001

PERIYAR UNIVERSITY, SALEM – 636 011

NMEC-II : Introduction to Object Oriented Programming Language C++	
Course	**Offered to other department Students (Other than CA Departments)**
Effective from	2008 -2009 and Onwards
Semester	IV
NMEC	Non Major Elective Course

Unit – I

Overview of C++ Language: Object Oriented Concepts – Characteristics- Advantages- Keywords and Identifiers-Constants-Variables-Data types- Operators and Expressions

Unit – II

Program structure –Conditional Statements: If Statement – Switch statement – Goto Statement.

Looping Statements: while Loop-For Loop Do-While Loop-Jumps in Loops – Break – Continue statements

Unit – III

Functions: Advantages of Functions-Classification of Functions-Inline Functions-Function Overloading –Reference Variables – Storage Classes -Arrays: Definition of an Arrays-Arrays and Functions- Simple programs

Unit – IV

Classes and Objects- Passing Objects as arguments – Returning an object from functions – Arrays of objects – Members of classes – Static member data – Static member functions - Simple programs

Unit – V

Constructors and Destructors-Types of Constructors-Destructor and its Characteristics, Inheritance- Simple programs Types of **Inheritance** –Simple programs

TEXT BOOK:

“Programming in C++”, M. T. Somashekara, Prentice Hall of India Private Limited, New Delhi, 2008

PERIYAR UNIVERSITY, SALEM – 636 011

NMEC-II : HTML and Web Design	
Course	**Offered to other department Students (Other than CA Departments)**
Effective from	2008 -2009 and Onwards
Semester	IV
NMEC	Non Major Elective Course

UNIT – I

World Wide Web: Introduction the web defined – web browser details – web writing styles – web presentation outline, design ,and management – registering web pages. Searching the World Wide Web: introduction – directories, search engines and meta search engines – search fundamentals – search strategies – how does a search engine works. Telnet and FTP : introduction – telnet and remote login – File transfer – Computer Viruses .

UNIT – II

HTML Basics: Understanding HTML – Setting Up the Document Structure – Formatting Text by Using Tags – Using Lists and Backgrounds – Creating Hyperlinks and Anchors
Style Sheets and Graphics: Introduction to Style sheets

UNIT – III

Graphics: Selecting a Graphics Format – Preparing Graphics for Web Use – Inserting Graphics – Arranging Elements on the Page – Controlling Image Size and Padding

UNIT – IV

Hyper linking from Graphics – Utilizing Thumbnail Graphics – Including Alternate Text for Graphics- Navigation: Creating Navigational Aids – Creating Tables – Formatting Tables

UNIT – V

Layouts: Creating Division-Based Layouts – Creating User Forms – Using Frames for Layout – Incorporating Audio and Video

TEXT BOOK:

1. Microsoft Step by Step – HTML and XH, Faithe Wempen, Prentice Hall of India Private Limited, New Delhi, 2006

REFERENCE BOOK:

1. C.Xavier , " World Wide Web Design with HTML", TMH 2007

PERIYAR UNIVERSITY, SALEM – 636 011

I - YEAR (Allied – I: Mathematics - First Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	I
Allied – I:Course - I	**PAPER -1: Algebra and Differential Calculus**

Unit I

Characteristic Equation - Eigen values and Eigen Vectors - Cayley Hamilton Theorem (Statement only) and its Problems - Rank of a Matrix - Problems.

Unit II

Polynomial Equations - Imaginary and Irrational Roots - Relation between Roots and Coefficients - Transformation of Equations - Descarte's rule of signs - Problems.

Unit III

Successive Differentiation - nth Derivative - Leibnitz formula for nth Derivative - Problems.

Unit IV

Partial Differtiation - Partial Derivative of Higher orders - Homogeneous Functions - Problems.

Unit V

Radius of Curvature in Cartesian and Polar Coordinates - Pedal Equation of a curve - Radius of Curvature in p - r Coordinates.

Text Books

1. Algebra Volume-I, T.K.Manickavasagam Pillai and S.Narayanan, Vijay Nicole Imprints Pvt Ltd, Chennai, 2004

2. Algebra Calculus and Trigonometry, Dr.P.R.Vittal , Margham Publications, Chennai, 2000

Reference Books

1. Calculus, N.P. Bali, Krishna Prakasan, 1994.
2. Calculus, D. Sudha, Emerald Publishers, 1988

PERIYAR UNIVERSITY, SALEM – 636 011

I - YEAR (Allied – I: Mathematics - First Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	II
Allied – I: Course - II	**PAPER –II : Integral Calculus , Fourier series and Vector calculus**

Unit I

Integral Calculus - Integration by parts – Definite integrals and its properties -Reduction formulae for $\int_0^{JI/2} \sin^n x\,dx$, $\int_0^{\pi/2} \cos^n x\,dx$, $\int_0^{\pi/4} \tan^n x\,dx$, $\int \cot^n x\,dx$, $\int_0^a x^n e^{ax}\,dx$, $\int_0^a e^{-x} x^n\,dx$ - problems.

Unit II

Fourier series: Definition – To find the Fourier coefficients of periodic functions of period 2JI - even and odd functions - Half range series problems.

Unit III

Vector differentiation: Limit of a vector function – derivative of vector function - Definition of Gradient of a scalar point function - Directional derivative of a scalar point function – problems.

Unit IV

Vector point function: Divergence and curl of a vector point function – solenoidal and irrotational functions – Vector identities - Laplacian operator.

Unit V

Line integrals – surface integrals and volume integrals – Gauss's Divergence theorem – stoke's theorem – Green's theorem – (statement only) – problems.

Text Books

1. Allied Mathematics, T.K.Manickavasagam Pillai and S.Narayanan, S.Viswanathan and Co.,Chennai, 1992

2. Allied Mathematics, Dr.P.R.Vittal , Margham Publications, 2002

3. Allied Mathematics, A.Singaravelu, Meenakshi Traders, Chennai, 2002

Reference Books

1. Vector Calculus, K.Viswanathan and S.Selvaraj, Emerald Publishers, 1984.

2. Calculus, N.P.Bali, Krishna Prakasam, 1994

PERIYAR UNIVERSITY, SALEM – 636 011

I - YEAR (Allied – I: Mathematics - First Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	II
Allied – I: Course - III	**PAPER -III: Differential equations and Laplace Transforms**

Unit I

Second order differential equation with constant coefficient - purticular intergral of the type $e^{\alpha x}$, cosαx or sinαx , x^n , $e^{\alpha x}$ V where V is any function of cosax or sinax or x or x^2 or xsinax or xcosax.

Unit II

Formation of Partial differential Equation by eliminating arbitary constants and arbitary functions – Definitions – Complete , particular , singular and general integrals -problems .

Unit III

Solutions of standard types of Partial differential equations - Clairaut's Form –Lagrange's linear Partial Differential Equations Pp + Qq = R - problems.

Unit IV

Laplace transforms – Definition - Standard formula – Elementary theorems -problems.

Unit V

Inverse Laplace transforms – Standard formula – Elementary theorems –Applications to solving second order differential equations with constant coefficients –problems.

Text Books

1. Differential Equations and Laplace Transforms, Dr.P.R.Vittal, Margham Publications, Chennai , 2002
2. Allied Mathematics, Dr.P.R.Vittal , Margham Publications, 2002
3. Allied Mathematics, A.Singaravelu, Meenaksh Publicshers, Chennai, 2002

Reference Books

1. Engineering Mathematics, Gunavathi & Thilkavathy, Emerald Publishers, Chennai , 1984.
2. Calculus, N.P.Bali, Krishna Prakasam, 1994

PERIYAR UNIVERSITY, SALEM – 636 011

I - YEAR (Allied – I: Mathematics - Second Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	I
Allied – I: Course I	**PAPER –I: Discrete Mathematics**

Unit I

Mathematical Logic : Statements and Notation – Connectives – Negation – Conjunction – Disjunction – Statement formulas and truth tables – conditional – biconditional – Well – formed Formulas – Tautologies – Equavalence & Duality – Normal Forms – DNF , CNF , PDNF , PCNF .

Unit II

The Theory of Inference for the Statement Calculus – Validity Using Truth Tables - Rules of Inference- Theory of predicate calculus – Valid formulae – Equivalences.

Unit III

Algebraic systems – Definition & Examples – semigroups and Monoids – Definition and examples – Homomorphism of semi groups & monoids - sub semigroups & submonoids. – Polish rotation – conversion of Infix to polish – Group codes – The communication model and basic notations of Error correction – Generation of codes by using parity checks – Error recovery in group codes.

Unit IV

Relations & Ordering – Relations – Properties of binary relation in a set – Functions - Definition & Introduction – composition of Functions – Inverse Function – Binary and n-array oprations – Hashing Functions – Natural numbers – Peano Axioms & mathematical induction – Cardinality

Unit V

Latices as partially ordered sets – Definition and example – some properties of Latices – sub Latices – Direct product and Homomorphism – Boolean Algebra – Definition and Example – sub algebra – Direct product and Homomorphism –Boolean Functions – Boolean forms and Free Boolean Algebra – Values of Boolean expression and Boolean Function.

Text Book

1. Discrete Mathematical structures with Applications to Computer science, J.P.Trembley R. Manohar, Tata McGraw – Hill, NewDelhi, 2001

Reference Books

1. Discrete Mathematics, Prof.V.Sundaresan, K.S. Ganapathy Subramaniyam, K.Ganesan, Tata Mc Graw Hill, New Delhi, 2000

2. Discrete Mathematics, L.Lovarz, J.Pelikan, K.Vexztergombi, Springer International Edition, 2002

PERIYAR UNIVERSITY, SALEM – 636 011

I - YEAR (Allied – I: Mathematics - Second Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	II
Allied – I: Course II	**PAPER –II: Numerical Methods**

Unit I

Solution of Algebraic and Transcendental Equations – Introduction – Regula Falsi Method – Bisection Method – Iteration Method – Newton – Raphson Method – Problems.

Unit II

Calculus of Finite Differences – Introduction – Forward Differences – Backward Differences – Central Differences – Operators – Forward Differences – Backward Differences - Fundamental Theorem of Difference Calculus – Difference Operator Δ and E – Problems.

Unit III

Interpolation with equal intervals – Newton's Forward and Backward Interpolation Formula – Central Difference Interpolation Formula – Gauss's Forward and Backward Interpolation formula – Bessel's Formula – Stiring 's Formula .- Problems.

Unit IV

Numerical Differentiation and Numerical Integration – Derivatives using Newton's Forward – Newton's Backward – Striling 's Formula – Numerical Integration – General Quadrature Formula – Trapezoidal Rule – Simpson's 1/3 Rule – Simpson's 3/8 Rule –Problems .

Unit V

Numerical solutions of Ordinary Differential First and Second Order Equations – Introduction – Taylor's Series Method – Euler's Method – Modified Euler's Method – Runge Kutta Methods – Problems.

Text Books

1. Numerical Methods For Science And Engineering Computation, M.K.Jain, S.R.K.Iyenger & R.K.Jain, New Age International Pvt .Ltd

2. Numerical Methods, E.Balagurusamy, Tata McGraw Hill Publishing company Ltd,New Delhi, 2002

Reference Books

1. Introductory Methods of Numerical Analysis, S.S.Sastry, Prentice Hall of India Private Ltd , 2000,New Delhi.

2. Engineering Numerical Methods, T.K.Manickavasagam and Narayanan, S.Viswanathan &Co, Chennai , 1998

PERIYAR UNIVERSITY, SALEM – 636 011

I - YEAR (Allied – I: Mathematics - Second Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	II
Allied – I: Course III	**PAPER –III: Graph Theory**

Unit I

Graph – Definition 1.2 – Applications of Graph – 1.3 Finite and Infinite Graphs – 1.4. Incidence and Degree – 1.5. Isolated Vertex – Pendant Vertex – Null Graph

Unit II

Isomorphism – 2.2 Sub graphs – 2.3 A Puzzle with mulicoloured – 2.4 Walks, paths and circuits – 2.5 Connected Graphs – Disconnected Graphs and components.

Unit III

2.6 Euler Graphs – 2.7 operations on Graphs – 2.8 More on Euler Graphs – 2.9 Hamiltonian and circuit – 2.10 The Travelling salesman problem.

Unit IV

Trees 3.2 Properties of Trees – 3.3 Pendent Vertices in a Tree – 3.4. Distance and centres in a Tree – 3.5 Rooted and Binary Trees.

Unit V

On Counting Trees – 3.7 Spanning Trees – 3.8 – Fundamental circuits – 3.9 Finding all spanning Trees of a Graph.

Text Books

1. Graph Theory with applications to Engineering and computer science, Narasingh Deo, Ptentice Hall of India, New Delhi

Reference Books

1. Graph Theory, Harary, Narosa publications,New Delhi

2. A First look at Graph Theory, John Clark, Allied Publications Ltd, Madras

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I - Year / II Year (Allied – I / II: Statistics - Third Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	I or III
Allied – I / II: Course I	**PAPER –I: Allied Statistics -I**

Unit I:

Random variable – Discrete and continuous – Distribution functions – Marginal and conditional distributions – Mathematical exception - Moment generating function – Characteristic function – Tchebychev's inequality.

Unit II:

Theoretical standard distributions – Binomial, poisson rectangular and normal distributions – Derivations properties and Application – Simple problems.

Unit III:

Exact sampling distribution – Chi- square distribution, Student't' distribution and the 'F' distribution – Derivation of Mean, Variance, M.G.F and Characteristics function – Relationship between 't', Chi-square and F distributions.

Unit IV:

Correlation and Regression – Correlation co-efficient and rank correlation – Regression lines and regression co-efficients – Properties Partial and multiple correlation co-efficients (3 variables only).

Unit V:

Curve fitting – Method of least squares – Fitting of second degree parabola – Fitting of power curve and exponential curve, simple problems.

Reference Books:

1. Gupta, S.C. and Kapoor, V.K. (2001) Fundamentals of Mathematical Statistics (11th edition), Sultan Chand & Sons, New Delhi.
2. Sancheti, D.C and Kapoor V.K. (2005). Statistics (7th edition), Sultan Chand & Sons, New Delhi

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I - Year / II Year (Allied – I / II: Statistics - Third Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	II or IV
Allied – I / II: Course II	**PAPER –II: Allied Statistics -II**

Unit I:

Population and sample, parameter and statistic – Point estimation – Consistency, Unbiasedness, Efficiency (Cramer – Rao Inequality) and sufficiency (Rao – Blackwell theorem).

Unit II:

Methods of estimation – Maximum likelihood, Moments and minimum Chi- squares methods – Properties of these estimators – Interval estimation (Concept only)

Unit III:

Test of hypothesis – Concept of statistics hypothesis – Simple and composite hypothesis – Critical region – Type I and Type II errors – Power of a test – Neyman Pearson lemma – simple problems.

Unit IV:

Test of significance – Standard error – Large sample test with regard to mean, difference of means, proportions and difference of proportions – simple problems.

Unit V:

Test of significance – Exact sample test based on t and F distributions with regard to mean, variance and correlation co-efficient – Test based on chi-square distributions.

Reference Books:

1. Gupta, S.C. and Kapoor, V.K. (2001) Fundamentals of Mathematical Statistics (11^{th} edition), Sultan Chand & Sons, New Delhi.
2. Sancheti, D.C and Kapoor V.K. (2005). Statistics (7^{th} edition), Sultan Chand & Sons, New Delhi

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I - Year / II Year (Allied – I / II: Statistics - Third Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	II or IV
Allied – I / II: Course III	**PAPER –III: Allied Statistics -III**

Unit I:

Computation of measures of location and dispersion – Measures of skewness and kurtosis

Unit II:

Fitting of binomial, poisson and normal distributions – Tests of goodness of fit.

Unit III:

Curve fitting – Fitting of a straight line ($y = a+bx$), Second degree parabola ($y = a+bx+cx^2$), $y = ae^{bx}$, $y = ab^x$ and $y = ax^b$.

Unit IV:

Computation of correlation co-efficient – Rank correlation co-efficient – Regression lines.

Unit V:

Asymptotic and exact tests with regard to mean, variance and co-efficient of correlation – Test for independence of attributes.

Note:

Total **:** 100 Marks

Practical Record **:** 25 Marks

Practical Exam **:** 75 Marks

5 Questions are to the set without omitting any units. All questions carry equal marks. Any 3 question are to the answered in 3 hours durations.

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II - YEAR (Allied – II: Commerce - First Option)	
Course	Common to B.Sc(CS), BCA, & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	III
Allied – II	**PAPER -1: PRINCIPLES OF ACCOUNTANCY**

Unit I

Introduction – accounting concepts and conventions- journal- ledger- subsidiary books- Trial Balance

Unit –II

Final Accounts of a sole trader – Adjustments

Unit – III

Final Accounts of trading concerns- receipt and payments account – income and expenditure account – balance Sheet.

Unit – IV

Average due date – account current – Bank reconciliation statement

Unit – IV

Depreciation methods – fixed – diminishing – annuity – depreciation fund- provisions and reserves

Text Book:

1. Financial accounting , R.L Gupta and V.K.Gupta, Sultan Chand & sons, New Delhi
2. Financila accounting , S.P.Jain and K.L.Narang, Kalyani publisher, kludhiana

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II - YEAR (Allied – II: Commerce - First Option)	
Course	Common to B.Sc(CS),BCA & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	IV
Allied – II	**PAPER –II: COST AND MANAGEMENT ACCOUNTING**

UNIT - I

Cost Accounting- meaning, scope objectives- advantages and limitations - Differences between cost accounting and financial accounting- elements of cost- preparation of cost sheet.

UNIT -II

Material management- purchase procedure- various stock levels-Economic Order Quantity - Bin card and stores ledger - pricing of issues - FIFO, LIFO -Simple average and Weighted average methods- stock control.

UNIT-III

Management accounting: nature and scope - meaning and definition- objectives- management accounting and financial accounting- management accounting and cost accounting.

UNIT - IV

Budget and Budgetary control: Meaning, importance, preparation of sales budget, production budget-raw materials budget-cash budget-flexible budget

UNIT-V

Marginal costing-break-even analysis for profit planning and control -P/V ratio-BEP and margin of safety

TEXT BOOKS

1. Cost Accounting, Jain and Narang, Kalyani publishers , Ludhiana
2. Cost Accounting, Reddy and Hari Prasad Reddy, Margham publishers, Chennai-17
3. Management Accounting, Dr.S.Ganesan and Kalavathi, thirumalai Publication , Nagercoil.

4. Management Accounting, S.N.Maheswari, Sultan Chand & Sons, New Delhi.

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II - YEAR (Allied – II: Commerce - First Option)	
Course	Common for B.Sc(CS), B.Sc(IS), and BCA.,
Effective from	2008 -2009 and Onwards
Semester	III & IV
Allied – II	**PAPER –III: Allied Practical Lab -1:Commerce Practical**

1. Preparation of invoice, receipts. Voucher, delivery challan, entry pass, and gate pass debit and credit notes.

2. Preparation of transaction from the receipts, vouchers, credit notes and debit notes.

3. Preparation of application for shares and allotment letter for share transfer forms from the secretary.

4. Drawing, endorsing, and crossing of cheques filling up of pay in slip demand draft application and preparation of demand drafts.

5. Making entries in the passbook and filled up of account opening form for SB account, current account and FDR's, preparation of FDR's.

6. Filling up of application forms for admission to co-operative societies. Filling up of loan application forms and deposit challan

7. Using bin card and inventories.

8. Using cost sheets.

9. Filling up of an application form for a LIC policy, filling up of the premium form, sending premium notice and filling up the challan for remittance receipt for the

premium. The procedure to receive a lapsed policy and procedure for settling account while the insured is alive or dead.

10. Preparation of an advertisement copy, collection of advertisement in dailies and journal, critically evaluating the advertisement copy.

11. Filling up income –tax returns and application for permanent account number

NOTE:

Students may be requested to collect original or Xerox copies of the documents and affix then on the record note book after having filled up. Drawing of the documents should not be insisted.

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II - YEAR (Allied – II: Applied Electronics - Second Option)	
Course	Common to B.Sc(CS), BCA & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	III
Allied – II	**PAPER –I: Applied Electronics-I**

Unit – I

Introduction of Semiconductor, Intrinsic and Extrinsic semiconductors –N & P type Semiconductors– Junction diode- V-I Characteristics- Diode applications – Zener diode – Characteristics – LED-7 Segment LED.

Unit – II

Types of Resistors, Capacitors and Inductors – AC and DC Sources -Introduction to Transistor –Construction and Operation of Transistor – Transistor as an amplifier - Construction and Operation of FET.

Unit – III

Integrated circuit fabrication: Introduction & fundamentals of Monolithic IC technology – Basic planar processes – Fabrication of a circuit – Active & passive components & ICs – Diodes – resistors – capacitors – Monolithic transistors – Fabrication of FET, Introduction to Thin & Thick film technology.

Unit – IV

PC Trouble Shooting: System Types XT, AT and ATX – Processor Sockets – Intel Chipsets – AMD Chipsets – Mother Board Connectors – Power Supply Connectors- CRT display – LCD panels- VGA standards – Audio Adapter – Serial and Parallel Port Configuration – 104 Keyboard – Pointing Devices – USB Technical Details – USB adapter.

Unit – V

Printed Circuit Boards: Considerations for Lay out planning – Lay out rules for placing and mounding components – Supply and ground conductors – Design rules for Digital circuit PCP'S: Reflections – Crosstalk – EM interference - Artwork : Basic approaches – Taping guidelines – Rules – Computer Aided PCB Design.

Text Books

1. R.S. Sedha –A Text Book of Applied Electronics — S. Chand(UnitI&II)
2. D. Roy chouchury, Sahil Jain - Linear Integrated circuits – New age Publications(Unit-III)
3. Scott Mueller – Upgrading and repairing PC's – 17th Edition – Pearson Education. (Unit-IV)
4. Walter C bosshart - Printed Circuit Boards Design and technology – TMH(Unit-V)

Reference Books

1. B.L. Theraja -Basic electronics Solid State - S. Chand.
2. V.K. Metha -Basic Electronics- S. Chand.

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II - YEAR (Allied – II: Applied Electronics - Second Option)	
Course	Common to B.Sc(CS), BCA & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	IV
Allied – II	**PAPER –II : Applied Electronics-II**

Unit – I

Operational Amplifiers – Inverting and Non inverting Amplifiers – Adder-Subtractor – Integrator – Differentiator –Comparator - 555 Timer – Astable –Monostable- 8038 Function Generator-566 Waveform Generation.

Unit – II

Introduction to Oscillator- Phase Shift Oscillator – Multivibrators – Astable, Monostable and Bistable Multivibrators .Filters - Low pass, High Pass, Band Pass and Band Reject Filters.

Unit – III

Transducer – Classification - Linear Variable Differential Transducer (LVDT)- Peizo Electric Transducer -Strain gauge – Temperature Transducers – Thermistor – Thermocouple – Microphones – Loud Speaker

Unit – IV

Measuring Instruments: Electronic Volt Meters – The digital Voltmeter – Analog Multimeter - Digital Multimeter – Cathode Ray Oscilloscope –AFO. Introduction to invertors – UPS – SMPS

Unit – V

Modulation -Definition - Need for Modulation -Amplitude Modulation –Frequency Modulation – Pulse Modulation – Principles of PCM and Delta Modulation – FDM and TDM .

Text Books

1. B.L. Theraja -Basic electronics Solid State - S. Chand
2. Kennedy - Electronic communication Systems – TMH(Unit-V)

Reference Books

1. R.S. Sedha –A Text Book of Applied Electronics — S. Chand

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II - YEAR (Allied – II: Applied Electronics - Second Option)	
Course	Common to B.Sc(CS), BCA & B.Sc(IS)
Effective from	2008 -2009 and Onwards
Semester	III & IV
Allied – II : Practical	**Allied Practical -I : Electronics Lab -I**

Electronics laboratory Exercise: Electronics Lab -I

Any 16 Experiments:

1. Basic Logic gates using IC's
2. Integrator using 741
3. Differentiator using 741
4. 555 Astable Multivibrator
5. Basic Logic gates using diode / Transistors
6. V-I Characteristics of Junction Diode
7. Zener diode characteristics
8. Voltage Regulator using IC 7805
9. NAND / NOR as a Universal Gate
10. Design of SOP and POS Boolean functions
11. Binary to 7 Segment Converter
12. Half and Full Adder
13. Half and Full Subtractor
14. Multiplexer and Demultiplexer
15. Encoder, Decoder
16. Study of flip flops – RS and D flip flop
17. Study of flip flops – JK and Master-Slave and T flip flop
18. Shift Register
19. Ring Counter
20. Study of ALU

Reference Books :

1. S. Poorna Chandar B. Sasikala -Electronics Laboratory Primer - A Design Approach – S. Chand