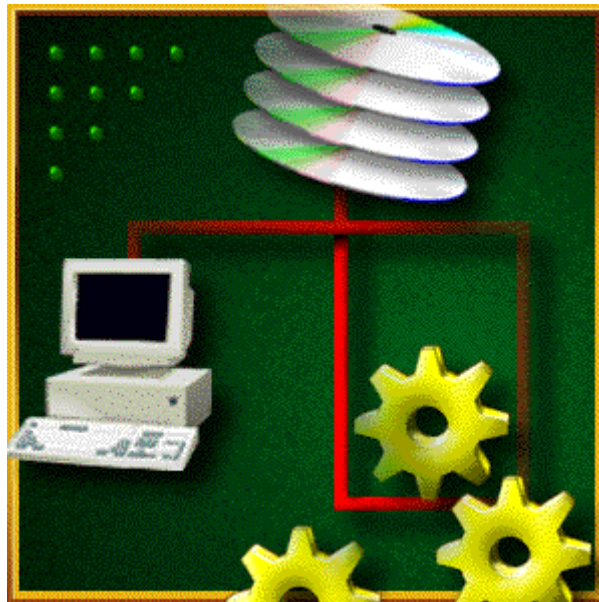


ARULMIGU PALANIANDAVAR ARTS COLLEGE FOR WOMEN, PALANI
(Accredited with B++ by NAAC
(AUTONOMOUS)

Bachelor of Computer Science
SYLLABUS

2011-14 ,2012-2015 & 2013-2016

Batches



PG DEPARTMENT OF COMPUTER SCIENCE

ARULMIGU PALANIANDAVAR ARTS COLLEGE FOR WOMEN

PG DEPARTMENT OF COMPUTER SCIENCE

B.Sc COMPUTER SCIENCE

REGULATIONS

1. Qualification for Admission

- Candidate should have passed the Higher Secondary Examination conducted by the board of Higher Secondary Examination, Govt. of Tamilnadu or any other Examination accepted by the syndicate as equivalent there to with Mathematics or Computer Science and at least one of the following subject.
 - Physics / Chemistry / Commerce.

2. Duration of the course

The students will undergo the prescribed course of study for a period of not less than three academic years (Six semesters).

3. Medium of Instruction: English

4. Subject of Study: As given in Appendix

5. Scheme of Examination: As given in Appendix

6. Eligibility of the degree:

- Candidates will be eligible if they complete the course with the required credits and pass in the prescribed examinations.
- The candidate requires 75% of attendance to attend the semester examination.
- Three internal exams will be conducted and best of two will be considered for the internal mark consolidation
- The passing minimum is 40% (both in internal and external separately) in each paper.
- The candidate can select three electives / a project. The electives have to be studied two in the fifth and one in the sixth semester, whereas the project will be undergone in the sixth semester.
- Project can be done within the department. The candidate can undergo the project individually or in a group of two.
- The candidate should undergo a compulsory project in sixth as a core.
- The Department offers two non-major elective courses. The students have to appear for two non-major elective course offered by other Department.

- The students have to study six skill based courses.
- To complete the course the students should gain the prescribed 140 credits.

7. Evaluation

- Evaluation of the candidates shall be through both internal and external assessment.
The ratio of internal and external assessment should be 25:75.
- The break-up for internal assessment shall be as follows:

Assignment	:	5 marks
Seminar	:	5 marks
Written Test	:	15 marks

For the practical, the Break-up for Internal & External assessment shall be as follows:

Internal	:	40 marks
External	:	60 marks

ARULMIGU PALANIANDAVAR ARTS COLLEGE FOR WOMEN
COMMON ACADEMIC STRUCTURE IN AUTONOMY
PG DEPARTMENT OF COMPUTER SCIENCE
B.Sc., COMPUTER SCIENCE

Semester	Title of paper	Hours	Marks			Credits
			Int.	Ext.	Total	
I	Part – I Tamil	6	25	75	100	3
	Part – II English	6	25	75	100	3
	Part – III :					
	Core – I Programming in C	4	25	75	100	3
	Core –II Digital Electronics	4	25	75	100	3
	Allied - Mathematics	4	25	75	100	5
	Core III Programming Lab I – C Programming	3	40	60	100	2
	Part – IV Skill Based I – Communicative English	2	25	75	100	2
	Value Education – Yoga & Meditation	1				-
	Total	30			700	21
II	Part – I Tamil	6	25	75	100	3
	Part – II English	6	25	75	100	3
	Part – III Core – IV Object Oriented Programming with C++	4	25	75	100	3
	Core –V Data Structures	4	25	75	100	3
	Allied – Probability & Statistics	4	25	75	100	5
	Core-VI Programming Lab II:C++ with Data Structures	3	40	60	100	2
	Part – IV Skill Based II: Programming Lab III- Office Automation	2	40	60	100	2
	Value Education-Yoga Practicals	1	25	75	100	2
	Total	30			800	23

Semester	Title of paper	Hours	Marks			Credits
			Int.	Ext.	Total	
III	Part – III Core VII-Computer Organization and Architecture	5	25	75	100	3
	Core VIII-Programming Lab IV Web Technology	4	40	60	100	3
	Core IX - Business Accounting	4	25	75	100	3
	Core X – Operating System	5	25	75	100	4
	Allied - Computer Oriented Numerical Methods	5	25	75	100	5
	Core XI-Programming Lab V – Tally	3	40	60	100	2
	Part- IV Skill Based III – Entrepreneurship Development	2	25	75	100	2
	Non Major Elective I –Internet and web browsing	2	25	75	100	2
	Total	30			800	24
IV	Part – III Core XII - Java Programming	6	25	75	100	4
	Core XIII – Computer Graphics & Multimedia	6	25	75	100	4
	Core XIV – Software Engineering	6	25	75	100	4
	Core XV – Programming Lab VI Java	5	40	60	100	2
	Allied - Computer Based Optimization Techniques	5	25	75	100	5
	Part IV Skill Based IV – Soft Skills	2	25	75	100	2
	Extension Activities					1
Total	30			600	22	

Semester	Title of paper	Hours	Marks			Credits
			Int.	Ext.	Total	
V	Part – III Core XVI – RDBMS & Oracle	6	25	75	100	5
	Core XVII – Visual Programming	5	25	75	100	5
	Core XVIII – Programming Lab VII Visual Programming	5	40	60	100	3
	Elective I	6	25	75	100	5
	Elective II	6	25	75	100	5
	Part – IV Skill Based V Career Guidance	2	25	75	100	2
	Total	30			600	25
VI	Part – III Core XIX – Computer Networks	6	25	75	100	5
	Core XX – Data Mining & Warehousing	6	25	75	100	4
	Core XXI – VB .NET with mini project	6	40	60	100	5
	Elective III	6	25	75	100	5
	Part – IV Skill Based VI – Programming Lab XI – Multimedia Lab	2	40	60	100	2
	Environmental studies	2	25	75	100	2
	Non Major Elective II – Principles of Information Technology	2	25	75	100	2
	Total	30			700	25

Total Marks : 4200

Total Credits of U.G : 140

CORE PAPERS	-	21
ELECTIVE	-	03
ALLIED	-	04
NME		02
SBC		06
TAMIL		02
ENGLISH		02
EVS		01
YOGA		01
EXTENSION ACTIVITY		01
TOTAL		43

Electives (Colleges can choose any one of the paper as electives)

Elective I

1. System Programming
2. Client Server Computing
3. PC Maintenance and Trouble shooting

Elective II

1. Object Oriented Analysis and Design
2. Internet and E-Commerce
3. Principles of information technology

Elective III

1. Software Testing
2. Digital Image Processing
3. Mobile Computing

Extra Credit Papers

1. Internet & Web Browsing
2. Incorporation Of Current Trends in IT

CORE I
PROGRAMMING IN C

Hours : 4

Semester: I
Credits : 3

UNIT I

Features – Declarations – Assignments and Variables – Integers – Arithmetic Expressions – More Data Types – Relational and Logical Operations – If and If.. Else If statements – While and Do.. While Statements.

UNIT II

For Loop – Printf and Scanf – Escape sequences – Control Characters – Conversion Specifications – User Defined Functions – Local and Global Variables – Parameters – Boolean Functions.

UNIT III

Arrays – Strings – Character Arrays – Break and Continue – Conditional Expressions – Multi Dimensional Array – Pointers and Direction Pointers – Address Operator – Array and Pointers.

UNIT IV

String and String functions – Static and Auto classes – Printf, Strcpy, Malloc, Sizeof and Strcmp – Structures: Concepts – Initialization – Tag – Pointers to structures – Period and arrow Operators.

UNIT V

Introduction – Defining and Opening a File – Closing a file – Input/Output Operations on Files – Error Handling During I/O Operations – Random Access to Files – Command Line Arguments

Text Books

1. Programming in ANSI C by E.Balagurusamy, Tata McGraw Hill Publishing Company, 2007.

Reference Book

1. Programming with C, Schaum's Outline Series, Gottfried, Tata McGraw Hill Publishing Company, 2006.
2. Let us C, Yaswant Kanetkar, BPB Publications.

CORE II

DIGITAL ELECTRONICS

Hours : 4

Semester : I

Credits : 3

UNIT I

Introduction to computer – Classification of Digital Computer System – Anatomy of a digital computer –Memory Units – Auxiliary storage devices – Input devices – Output devices .

UNIT II

Number Systems: Binary – Octal – Decimal – Hexadecimal Number System .
Conversion: Decimal to Binary – Hexa Decimal to Binary – Hexa Decimal to octal & Vice versa.

UNIT III

Arithmetic Operation: Binary Arithmetic operation – 1's & 2's Complement. Boolean algebra – Boolean Simplification – k map – Sum of Product method – Logic gates.

UNIT IV

Arithmetic And Combinational Circuits: Half Adder – Full Adder – Half Subtractor & Full Subtractor – Multiplexer and Demultiplexer.

UNIT V

Sequential Circuits: Flipflops RS, JK, D, T Flipflop – Synchronous & Asynchronous Counters – UP/Down counters. Shift Register: Serial In – Serial out – Parallel in – Parallel out.

Text Books

1. Fundamentals of Information Technology by Alexis leon, Mathews leon.-Unit I
2. Digital Circuits and Design by S.Salivahanan and S.Arivazhagan, Vikas Publishing House Pvt. Ltd. New Delhi, 2000. Unit II – Unit V.

Reference Books

1. Digital Principles and Applications by Malvino and Leech, TMH 1991.
2. Digital electronics by V.K.Puri, TMH, 1997.

ALLIED

A.1 MATHEMATICS

Hours : 4

Semester : I

Credits : 5

UNIT I

Matrices – Special type of Matrices – Operations – Inverse of Matrix – Elementary Transformation – Rank of Matrix – Simultaneous Linear Equations – Eigen values & Eigen Vectors – Cayley Hamilton Theorem.

UNIT II

Review of theory of Sets – Relations – Equivalence Relations – Partial Order – Function – Binary Operation.

UNIT III

Binomial, Exponential and Logarithmic series – statement and direct summation (Problems Only)

UNIT IV

Hyperbolic functions – Definitions – Relation between Hyperbolic functions – Inverse Hyperbolic functions.

UNIT V

Polynomial Equations – roots – Relation between Roots and coefficients – Imaginary and Irrational Roots – Descarte's Rule of Signs (Explanation and Application to simple problems only)- Newton's and Horner's Method.

Text Books

1. Treatment and contents as in Algebra by Manickavasagam Pillai and others, 11th Revised Edition, Vo.II
2. Ancillary Mathematics – Volume I Part II (Section B) By Narayanan and Manickavasagam Pillai Reprint 1986.
3. Modern Algebra by S.Arumugam & A.Thangapandi Isaac, New Gamma Publishing House, Palayamkottai.

Reference Books

Essential Computer Mathematics

Seymour Lipschutz(Schaum's Outline Series in Computers – McGraw Hill)

CORE III LAB I

C PROGRAMMING LAB

Hours : 3

Semester : I

Credits : 2

1. a) To find Sum of Digits of a number.
b) To reverse a given Digits.
2. Number checking.
3. a) prime no of series
b) Armstrong no series
4. Matrix manipulation and transpose of a matrix.
5. Palindrome using string
6. String concatenation
7. Count no.of words, character and lines.
8. Standard deviation.
9. Fibonacci using recursion.
10. Swapping using pointers.
11. To prepare student Mark list using Structure.
12. To prepare EB Bill using Files.

SKILL BASED I
COMMUNICATIVE ENGLISH

Hours : 2

Semester : I

Credits : 2

UNIT I

Listening skills: Listening to the passage read and answering the questions based on it.

Reading skills: Reading passages in English with correct pronunciation.

UNIT II

Speaking skills:

Introducing self & Others

Short dialogues using certain expressions

Framing verbal questions

Personal Interviews

Narrating daily routine

Guiding new comers to a spot

UNIT III

Writing skills:

Narrating personal experiences

Describing things/personality/place

Vote of thanks & welcome address

Importance of English

CORE IV

OBJECT ORIENTED PROGRAMMING WITH C++

Hours : 4

Semester : II

Credits : 3

Objectives:

- 1.To Discuss OOPs concepts.
- 2.To deal with I/O facilities, Control Structures which are important for a structured programming language
- 3.To discuss Structure and Union
- 4.To Develop programming skills in writing simple programs.

UNIT I

Principles of OOPS: OOPS Paradigm – Basic Concepts of OOP – Benefits of OOP – Object Oriented Languages – Applications of OOP.

Introduction to C++: Tokens, Keywords, Identifier, variables, Operators, Manipulators, Expressions and Control Structures in C++

UNIT II

Functions in C++ - Main function – Function Prototyping – Call by reference – Function Overloading – Friend and Virtual Functions.

UNIT III

Classes and Objects – Constructors and Destructors – Operator Overloading – Type Conversion.

UNIT IV

Inheritance – Single Inheritance – Multiple Inheritance - Multilevel Inheritance – Hierarchical Inheritance – Hybrid Inheritance – Pointers – Virtual Functions – Polymorphism – Managing Console I/O Operations.

UNIT V

Working with Files – Classes for File Stream operations – Opening and Closing a file – End – of – file detection – File pointers – Updating a file – Error handling during file operations – Command line arguments.

Text Book

1. Object Oriented Programming with C++ by E.Balaguruswamy, Tata McGraw Hill, New Delhi 2002,4TH Edition.

Reference book

1. Let Us C++ , Yaswant Kanitkar – BPB publications,First Edition.

CORE V
DATA STRUCTURES

Hours : 4

Semester: II
Credits : 3

Objectives

To Know About

- 1. Basic terminology, Notations and Operators.**
- 2. Stack, Queue, Linked list ,Tree and Graph.**
- 3. Data Structures representation in Memory, Operators and Applications.**

UNIT I

Overview – Sparks – How to create Programs – How to Analyse Programs. Arrays:

Ordered Lists – Sparse Matrices – Representation of Arrays.

UNIT II

Stacks and Queues: Fundamentals – A Mazing problem – Evaluation of Expression – Multiple Stacks and Queues.

UNIT III

Linked Lists: Singly Linked Lists – Linked Stacks and Queues – Doubly Linked Lists – Storage management – Garbage collection and compaction.

UNIT IV

Trees: Basic Terminology – Binary Trees – Binary Tree Representation – Binary Tree Traversal – More on Binary Trees – Threaded Binary Trees – Binary Tree Representation of Trees.

UNIT V

Graphs: Terminology and Representation – Traversals, connected components and spanning Trees, Shortest paths – Activity Networks and Critical paths.

Text Book

1. Fundamentals of Data Structures by Ellis Horowitz, Sartaj Sahini – Galgotia Publicaitons, 1998.

Reference Book

1. Data Structures using C++ - Ashok Kamthane

ALLIED
PROBABILITY AND STATISTICS

Hours : 4

Semester : II
Credits: 5

UNIT I

Frequency Distribution: Measures of Central Tendency – Arithmetic Mean – Median – Mode – Geometric Mean – Harmonic Mean – Measures of Dispersion Moments – Skewness and Kurtosis.

UNIT II

Curve Fitting – Principles of Least Squares – Correlation – Rank Correlation – Regression – Correlation Coefficient for a Bivariate Frequency Distribution.

UNIT III

Attributes – Consistency of Data – Independent and Association data – Index numbers – Time series.

UNIT IV

Probability: Conditional Probability – Baye's theorem – Random Variables – Discrete Random Variables – Mathematical Expectation – Moment Generating function.

UNIT V

Introduction to Theoretical Discrete Distribution – Bernoullis Distribution – Binomial Distribution – Poisson Distribution.

Text Book

1. Statistics by Dr.S.Arumugam, A.Thangapdisaac, New Gamma Publishing House, Palayamkottai.

Core-VI

Programming Lab II-C++ with Data structure Lab

Hours : 3

Semester : II

Credits : 2

1. To perform Fibonacci Series using constructor.
2. To perform Sum of Two Values using Operator Overloading.
3. To perform the Arithmetic Operation using Inline Function.
4. To Swap Two Values between Two class Object using Friend Function.
5. To overload Unary and Binary operation using Switch Case
6. To process Student mark list using Multiple Inheritance.
7. To calculate Inventory control using Files.
8. Stack operation.
9. Queue operation.
10. Tree traversal.
11. Linked list.
12. Shortest path.

SKILL BASED II PROGRAMMING LAB III

OFFICE AUTOMATION

Hours :2

Semester : II

Credits : 2

List of Programs

MS – Word

1. Formatting the Text
2. Macro Creation
3. Table Creation
4. Mail Merge

MS - Excel

5. Employee Payroll
6. Inventory Control
7. Chart Creation using Excel

MS - Access

8. Students Mark List
9. Employee Payroll
10. Form Creation

MS – PowerPoint

11. Scenery Creation
12. Creating Presentation using Wizard
13. Slide show on College Courses
14. Creation Charts using Power Point

CORE VII
COMPUTER ORGANIZATION & ARCHITECTURE

Semester : III

Hours : 5

Credits : 3

Objectives

- 1. To give the basics of computer architecture**
- 2. To discuss input – output organization**
- 3. To learn about micro processor and its architecture**

UNIT I

Basic Structure of Computer Hardware and Software

Functional Units-Basic Operational Concepts-Bus Structures-Addressing Modes.

The Processing Unit

Some fundamentals concepts: Fetching a word from memory-storing a word in a memory-register transfers-Performing an arithmetic or Logic Operation.

UNIT II

Input-Output Organization

Accessing I/O device, Interrupts: Enabling and Disabling Interrupts-Handling Multiple Devices-Exceptions-Direct Memory Access-I/O Hardware.

UNIT III

The Memory

Internal Organization of Memory Chips-Static Memories-Dynamic Memories-Read only Memories-Cache Memories: Mapping functions-Virtual Memories.

UNIT IV

Pipelining

Basic Concepts: Role of Cache Memories-Instruction Queue-Branching: Delayed Branch- Branch Prediction-Multiple Execution Units.

UNIT V

Microprocessor

Architecture – Bus Organization – Functional diagram and pin out diagram of 8085 – Addressing modes of 8085 – Instruction set of 8085 .

Text Book

1. Computer Organization by VcarlHamacher,Zronko G Vrancis,
Software G.Zaky-McGraw Hill publication, Fourth Edition,1996.
2. Digital Electronics, Circuits and Systems by V.K.Puri, Tata McGraw-Hill
Publishing Company, New Delhi.(Unit-V)

Reference book

Computer System Architecture by Morris Mano – 3rd Edition.

CORE VIII

LAB IV - WEB TECHNOLOGY

Hours: 4

Semester: III

Credits: 3

PROGRAMMING LIST

1. Table Creation
2. List Creation
3. Frames Creation
4. Application form creation
5. Create a web site for College
6. Create a Web Site for Murugan Temple
7. Employee Details
8. Student Table
9. Cascading Style-Sheet
10. Leave Letter
11. Home page Creation

CORE IX

BUSINESS ACCOUNTING

Semester : III

Credits :3

Hours: 4

UNIT I

Accounting –Definition and functions-Accounting conventions concepts-system of accounting –Rules of double –entry system of book keeping-preparation of journal and ledger accounting

UNIT II

Subsidiary books - Purchase book - sales book - Purchase return book - Sales return book – Bills payable, Bills receivable.

UNIT III

Cash book – Single, Double, Triple column cash book.

UNIT IV

Preparation of trial balance - Final accounting – trading, profit & Loss accounting of balance sheet with simple adjustments.

UNIT V

Budget preparation of Cash Budget - Flexible budget.

Text books

1.Principles of Accountancy -K.L.Nagarajan,N.Vinayakam,P.L.Mani Eurasia Publication House(Pvt)Ltd.,New Delhi. Treble

Reference Book

1.Management Accounting - Srinivasan and Ramachandran,SriramPublication.

CORE X
OPERATING SYSTEM

Semester: III

Hours: 5

Credits : 4

Objectives

- 1. To teach the fundamental aspect of operating system**
- 2. To give sufficient knowledge on various system resources**
- 3. To know about security and production policies.**

UNIT I

INTRODUCTION: Evolution, types, different views of operating system, Process : Concepts, System Programmer's view Scheduling : Types of scheduler's algorithm and performance evaluation.

UNIT II

Inter-Process Communication & Synchronization: Need for Synchronization, Semaphores-Message and Implementation issues, Deadlocks: Prevention, avoidance, detection and recovery.

UNIT III

Memory Management: Static, Dynamic Memory allocation and Segmentation, Paging, Virtual Memory.

File management: Disk Organization, Disk Controller and Driver, Operating system View of the File Management.

UNIT IV

Security and Production: Security Policies and Mechanisms, Authentication, Cryptography, Worms and Viruses.

UNIT V

Input & Output Programming: I/O Problem, I/O Interfaces, Program Controlled I/O and Interrupt Controlled I/O.

Text Book

Operating Systems (Concept and Design)-Milen Milankovic, II Edition, 1987, Tata McGraw-Hill INC (Chapters 1-9, 12, 13) .

Reference Book

Operating System Concepts-Hames L.Peterson,Abraham.

Operating System Concepts-Silberchaz, Peterson and Galvin –Addision Wesley.

ALLIED**COMPUTER ORIENTED NUMERICAL METHODS****Semester : III****Hours: 5****Credits : 5****UNIT I****Computer Arithmetic:**

Introduction – Floating point Representation of numbers – Arithmetic Operations with normalization floating point numbers – consequences of normalizers floating point representation of numbers – some pitfalls computing – Error in numbers.

Iterative Methods: Introduction – Beginning iterative method of Successive Bisection, False Position, Newton Raphson – Secant – Successive Approximation Solution of polynomial equation simultaneous non linear equations.

UNIT II

Solution of Simultaneous algebraic Equations: Introduction – Gauss Elimination – Pivoting – ill conditional equations – refinement of the solution obtained by Gauss Elimination – Gauss Seidal iterative method. Comparison of direct and iterative methods.

UNIT III

Interpolation: Introduction – Lagrange interpolation – Difference – Tables – Truncation error – in interpolation – spline interpolation.

Least Squares Approximation of Functions : Introduction – Linear regression – polynomial regression – fitting exponential and trigonometric functions.

UNIT IV

Differentiation and Integration: Introduction – Formulae for numerical differentiation – numerical Integration Simpson's rule Errors – Algorithms – Gaussian Quadrature – Comparison of Integration formulae.

UNIT V

Numerical Solution of Differential Equations: Introduction – Euler's Method – Taylor Series – Runge-Kutta Methods – Predictor – Corrector – High order differential equation – Comparison of Predictor – Corrector and Runge-Kutta Methods.

Text Book

Computer Oriented Numerical Methods by V.Rajaraman, Prentice Hall of India Limited, 1997 **Chapters:** 2,3,4,5,6,7,8,9

CORE XI LAB V

ACCOUNTING SOFTWARE (TALLY)

Semester: III

Hours : 3

Credits : 2

UNIT I

Creating of Company-Alteration of company-Creation of ledger account-Group of accounting

UNIT II

Voucher entries – Purchase – Sales – Expenses – cash – journal.

UNIT III

Preparation of Balance Sheet-Profit and Loss Account-Trading account-Various accounting statements-Alteration-Adjustment.

UNIT IV

Stock maintenance - Stock entries-Stock registers-Purchase registers-Sales registers-Godown registers-Reorder level registers

Programme List

1. Company Creation & Accounts master creation
2. Voucher Entry (2 Programs)
3. Day Book preparation
4. Preparation of Trial Balance
5. Preparation of Final Accounts (Profit & Loss A/c & Balance Sheet)
6. Stock Group & Stock item creation
7. Making voucher entries with Inventory details (3 programs)

Skill Based III

ENTREPRENEURSHIP DEVELOPMENT

Hours: 2

Semester : III

Credits: 2

UNIT I

Entrepreneurship – Meaning – Importance – Definition – Functions and Qualities of an Entrepreneur.

UNIT II

Steps to be taken to start a business – Licensing – Registration and local bye laws.

UNIT III

Institutional arrangements for entrepreneurship development – DIC, SIPCOT, ITCOT, SIDCO, NSIC, SISI – Institutional finance to entrepreneurs – TIIC, SIDBI, Commercial Banks.

UNIT IV

Project Reports – Meaning and Importance of Project – format for Report – Project Appraisal – Market feasibility and economic feasibility.

UNIT V

Entrepreneurship Development in India – Women Entrepreneurship in India

Books for Reference

Entrepreneurship – R.V.Badi & N.V.Badi

Dynamics of Entrepreneurship Development & Management – Vasanth & Desai

Entrepreneurship Development – C.B.Gupta & N.R.Srinivasan

NON-MAJOR ELECTIVE - I
INTERNET AND WEB BROWSING

Semester : III

Hours:2

Credits: 2

Objectives:

1. To know the internet basics
2. To search the website and browse
3. To send and receive e-mail.

UNIT I

INTRODUCTION: History of computer – Types of computer – Classification of computers – Applications of computers.

UNIT II

INTERNET BASICS: World Wide Web – Search Engines – Web Browsers.

UNIT III

E-Mail: Creation of E-Mail – Sending and Receiving E-Mail – Attachments.

UNIT IV

Searching the web – Downloading: Text and Pictures.

UNIT V

HTML: Introduction – Structure of a HTML – HTML Tags.

TEXT BOOK

Using the internet the easy way- by young kaiseng – Minerva publications , reprint 2003

**CORE XII
JAVA PROGRAMMING**

Hours : 6

Semester : IV

Credits : 4

Objectives:

- 1. To inculcate knowledge on java programming concepts.**
- 2. To create wide range of applications and applets using Java.**

UNIT I

Introduction-Simple Java Programming – Java Program Structure - Java Tokens, Constants, Variables, Data Types - Java Statements - Implementing a Java Program - Java Virtual Machine - Command Line Arguments.

UNIT II

Classes, Objects And Methods: Introduction-Defining a Class- Static Members-Overriding Methods-Final Variables and Methods-Final Classes-Finalizer Methods-Abstract Methods and Classes –Visibility Control.

UNIT III

Interfaces: Introduction-Defining Interfaces-Extending Interfaces - Implementing Interfaces-Accessing Interface Variables.

Packages : Java API Packages-Using System Packages-Creating Packages-Accessing a Package-Using a Packages-Adding a Class to Package-Hiding Classes.

UNIT IV

Multithreading Programming: Creating Thread-Extending the Thread Class-Stopping and Blocking a Thread, Life Cycle of a Thread-Thread Exception-Thread Priority-Synchronization-Implementing the “Runnable Interface”-Managing Error and Exceptions.

UNIT V

Applet Programming: Introduction-Preparing to Write Applets-Applet Life Cycle-Designing a web page-Passing Parameters to Applets.

Graphics Programming: The Graphics Class-Lines and Rectangles-Circle and Ellipses-Line Graphics-Using Control Loop in Applets.

Text book

Programming with JAVA-E.Balagurusamy,3rd Edition.

Reference Book

The complete Reference JAVA 2 Herbert Schildt

CORE XIII

COMPUTER GRAPHICS & MULTIMEDIA

Semester: IV

Credits :4

Hours: 6

Objectives:

- 1. To offer concepts on basic graphical techniques.**
- 2. To study about two dimensional transformations.**
- 3. To introduce basic concepts and various elements of multimedia.**

UNIT I

Output Primitives: Points and Lines – Line –Drawing Algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms – Ellipse-generating algorithms. Attributes of Output Primitives: Line Attributes – Curve Attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes.

UNIT II

Geometric Transformations: Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations

UNIT III

Viewing: The Viewing Pipeline – Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation – 2D Viewing Functions – Clipping Operations

UNIT IV

Text : Types of Text – Unicode Standard – Font – Insertion of Text – Text Compression – File Formats. Image : Image Types – Seeing Color – Color Models.

UNIT V

Audio : Introduction – Acoustics – Nature of Sound Waves – Fundamental characteristics of Sound – Microphone – Amplifier – Loudspeaker – Audio Mixer – Digital Audio Video : Analog Video Camera – Transmission of Video Signals – Video Signal Formats – Television Broadcasting Standards – PC Video – Video File Formats and CODECs – Video Editing – Video Editing Software.

Text Books:

1. Computer Graphics – Donald Hearn, M.Pauline Baker, 2nd Edition
2. Principles of Multimedia – Rajan Parekh, 2007, TMH

CORE XIV
SOFTWARE ENGINEERING

Hours : 6

Semester: IV

Credits :4

Objectives:

1. To know the concept of computer based system and products
2. To present the role of software, system analysis, design concepts, testing methods and strategies.

UNIT I

The Evolving Role of Software - What is Software Engineering - The Changing Nature of Software - Software Myths - Some Terminologies - Software Life Cycle Models: Build and Fix Model - Evolutionary Process Models - Selection of a Life Cycle Model.

UNIT II

Requirements: Analysis and Specifications: Type of Requirements - Feasibility Studies - Requirements Validation.

UNIT III

Project Planning: Size Estimation - The Constructive Cost Model (COCOMO) - The Putnam Resource Allocation Model.

UNIT IV

Soft Design: What is Design - Function Oriented Design - Software Testing: A Strategic Approach to Software Testing - What is Testing - Functional Testing - Structural Testing - Levels of Testing - Validation Testing.

UNIT V

What is Software Maintenance - Estimation of Maintenance Costs .

Text Book:

Software Engineering by K.K.Agarwal

Reference Book

1. Software Engineering: A Practical approach by Roger S.Pressman – McGraw Hill – 1987 Edition.

CORE XV LAB VI

JAVA PROGRAMMING

Hours : 5

Semester : IV

Credits : 2

PROGRAMMING LIST

1. To perform addition of complex numbers using class and objects.
2. To perform multiplication of matrices using class and objects.
3. To perform volume calculation using method overloading.
4. Using command line arguments, test if the given string is palindrome or not.
5. Using multilevel inheritance process student marks.
6. Implement multiple inheritance for payroll processing.
7. Package illustration.
8. To illustrate built-in exceptions (any four).
9. To create multiple threads
 - a. Using Thread class
 - b. Using Runnable interface
10. String manipulation using string methods.
11. Applet – Graphical methods

ALLIED

COMPUTER BASED OPTIMIZATION TECHNIQUES

Semester : IV

Hours : 5

Credits : 5

UNIT I

Development of OR-Definition of OR-Modeling - Characteristics and Phases-Tools, Techniques and methods-Scope of OR.

UNIT II

Linear Programming problem-Formulation-Stack Surplus Variables-Graphical Solution of LPP.

UNIT III

Simplex method-Computational Procedure-Artificial Variable Techniques-Two Phase Method –Duality.

UNIT IV

Mathematical Formulation of Assignment Problem-Method of solving the Assignment Problem. Mathematical Formulation of Transportation problem-Initial Feasible solution-Optimal Solution-Degeneracy in TP-Unbalanced TP.

UNIT V

PERT Network and Timing Estimates-Critical Path Method(CPM)

Text Book

“Operations Research”-Theory and Applications By J.K.Sharma,McMillan Publishers.

SKILL BASED IV

SOFT SKILLS

Hours : 2

Credits : 2

UNIT I: Soft skill

Attitude and Aptitude - Lateral Thinking - Time is money- Are Leaders born or made? - Team Building - Interpersonal Skills

UNIT II: Business Communication:

Business Communication in English - Presentation Skills - Business Correspondence

UNIT III: Group Dynamics :

Interviews - Group Dynamics

UNIT IV: Internet and Soft Skills

Internet for Job Seekers
Resume Preparation.

Text Book

1. G.Ravichandran, S.P.Benjamin Elango and L.Arokiam, "Success through Soft Skills", ICT, 2007

SOFT SKILLS

Model Question Paper

Section A

I Answer all the questions :

1. What is meant by aptitude?
2. How is time wasted?
3. Define inter-personal skills.
4. Write briefly on 'listening'.
5. How can a presentation be made effective?
6. Comment on e-mail etiquette.
7. Why is an interview conducted ?
8. What is meant by a 'Stress interview'?
9. What are the skills tested in 'Group Dynamics'?
10. Write briefly on the 'Internet'.

Section B

II Answer the following briefly :

11. a. Explain 'Lateral thinking ' with examples.

Or

- b. Write a short note on 'aggressive people'.

12. a. Show how one can be an effective writer.

Or

- b. Comment on the use of telephones.

13. a. Present your curriculum vitae.

Or

- b. Write on the do's before the interview.

CORE XVI
RELATIONAL DATABASE MANAGEMENT SYSTEMS
& ORACLE

Hours : 6

Semester : V

Credits : 5

Objectives:

To inculcate knowledge on RDBMS concepts and Programming with Oracle.

UNIT I

Introduction: Purpose of Database System – View of Data – Data Models – Database Languages – Transaction Management – Storage Management – Database Administrator – Database Users – Overall System Structure.

UNIT II

Entity – Relationship Model: Basic Concepts – Design Issues – Mapping cardinalities – Keys – E-R Diagrams – Weak entity sets – Extended E-R feature – Design of an E-R Database scheme – Reduction of an E-R scheme to Table.

UNIT III

Relational Model: Structure of Relational Database – Relational Algebra – The Tuple Relational Calculus – The Domain Relational Calculus – Extended Relational – Algebra Operations – Modifications of the Database – Views. Integrity Constraints.

UNIT IV

Relational Database Design : Relational Database Design – Decomposition – Normalization using Functional Dependencies – Multivalued Functional Dependencies – Join Dependencies – Domain-Key Normal Form – Alternative Approaches to Database Design.

UNIT V

Database System Architecture: Centralized System – Client Server System – Parallel System – Distributed Systems – Network types.

Text Book

Database System Concepts (III Edition) by Abraham Silberschtz, Henry F.Horth
S.Sundershan McG Hill International Editions, 1997.

CORE XVII
VISUAL PROGRAMMING

Semester : V

Hours:5

Credits:5

Objectives:

To inculcate knowledge on Programming and Project Development using Visual Basic.

UNIT-I:

Introducing Visual Basic: What is VB? – Events and Event Procedures – Object-related concepts –VB program Development Process – Required Computer Skills – Logical Program Organization -VB Program Components – VB environment – Opening, Saving, Running a VB Project – Getting Help – Sample VB project. Visual Basic Fundamentals: Numeric, String constants – Variables – Data Types and Declarations – Operators and Expressions –Hierarchy of Operations – Inserting Parentheses – Special Rules concerning Numeric Expressions – String Expressions - Assigning Values to Variables – Displaying output – Library Functions – Program Comments. Branching and Looping: Relational operators and Logical Expressions – Branching with If-Then, If-Then-Else blocks – Selection Select Case – Looping with For-Next, Do-Loop, While-Wend – Stop statement.

UNIT-II:

Visual Basic control Fundamentals: Control tools – Control tool Categories – Working with Controls – Naming Forms and Controls – Assigning Property values to Forms and Controls– Executing commands – Displaying Output data – Entering Input Data – Selecting Multiple Features, Exclusive Alternatives, Form from a List - Assigning Properties collectively –Generating Error Messages – Creating timed Events – Scroll Bars.

UNIT-III:

Menus and Dialog Boxes: Building Drop-Down Menus – Accessing a Menu from Keyboard – Menu Enhancements – Submenus – Pop-Up Menus – Dialog Boxes – more about Msg BoxFunction – The Input Box function. Executing and Debugging a New Project: Syntactic errors – Logical errors – Setting Breakpoints – Defining Watch Values – Stepping Through a Program – User-induced Errors – Error-handlers – Generating a Stand alone Executable Program.

UNIT-IV:

Procedures: Modules and Procedures – Sub Procedures – Event Procedures – Function Procedures – Scope – Optional Arguments. Arrays: Characteristics – Declarations –

Processing –Passing Arrays to Procedures – Dynamic Arrays – Array-related Functions – Control Arrays –Looping with for Each-Next.

UNIT-V:

Data Files: Characteristics – Accessing and Saving a File in VB: The Common Dialog Control – Processing a Data file – Sequential Data Files – Random-Access Data files –Binary files.

TEXTBOOK:

1. VISUAL BASIC – Byron S. Gottfried, Schaum’s Outline series, TMH.

(UNIT-I: Chapters 1, 2 & 3 UNIT II: Chapter 4 UNIT-III: Chapter 5 & 6 UNIT-IV: Chapters 7 & 8 UNIT V: Chapter 9)

REFERENCE BOOK:

1. The Complete reference VISUAL BASIC – Noel Jerke, TMH.

**CORE XVIII LAB VII
VISUAL PROGRAMMING LAB**

Semester : V

Hours : 5

Credits : 3

1. Write a simple VB program to accept a number as input and convert them into
 - a. Binary
 - b. Octal
 - c. Hexa-decimal
2. Write a simple VB program to add the items to list box with user input and move the selected item to combo box one by one.
3. Write a simple VB program to develop a calculator with basic operation.
4. Design an form using common dialog control to display the font, save and open dialog box without using the action control property.
5. Write a simple program to prepare a Questionnaire.
6. Write a VB Program to develop a menu driven program
Add a MDI window in the form and arrange them in the cascading/horizontal style using menus (Create a menu to add form, arrange) (Menu Item 1).
Also change the form color using the menu in another menu item (Menu Item 2).

ORACLE

Data Definition Basics

7. 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:

cat_head route_head

(*cat_code PK*) (*cat_code FK*)

route_head route_detail

(*route_id PK*) (*route_id FK*)

ticket_head ticket_detail

(*tick_no PK*) (*tick_no FK*)

place_head route_detail

(*place_id PK*) (*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.

Data Manipulation Basics

8.
 - (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 1 and 500 Queries

8.
 - 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 iroute_detai lWhere place id is "100".
 - C. Create view tick from ticket_header with Ticket_no, Origin, Destination, route_id Report

10. Generate a report from the table ticket_detail for the particular ticket_no

PL/SQL

11.

- a. Write a PL/SQL block to update the bus_station to be "ERODE" where place_id is '01' or '05' [place_header]
- b. Write a PL/SQL block to satisfy the following condition by accepting the route_id as user input. If the distance is less than 500 than update the fare to be 200
- c. Write a Database trigger before insert for each row on the table route_detail not allowing transaction on Saturday / Sunday
- d. Write a Database trigger before delete for each row not allowing deletion and give the appropriate message on the table route_details

PROJECT

12. Develop a Simple Project for Student Database Management System using VB as front end and ORACLE as back end.

E 1.1 SYSTEM PROGRAMMING

Semester : V

Hours: 6

Credits:5

Objectives:

Enable the student to get sufficient knowledge on various system resources.

UNIT I

Introduction: System Software and Machine Architecture – SIC, CISC – RISC machines.

UNIT II

Assemblers: Basic Assembler Functions – Machine Dependent, Independent Assembler features – Assembler design options.

UNIT III

Loaders and Linkers: Basic Loader functions – Machine Dependent, Independent Loader features – Loader design options.

UNIT IV

Macroprocessors: Basic Macroprocessor functions – Machine Independent Macroprocessor features – Macro processor Design options.

UNIT V

Compiler: Basic Compiler functions – Machine Dependent and Independent compiler features – Compiler Design options.

Text Book

System Software (An Introduction to System Programming) – III Edition – 1997 – Addison Wesley.

Chapters: 1-5

E 1.2 OBJECT ORIENTED ANALYSIS AND DESIGN

Semester: V

Hours: 6

Credits:5

Objectives:

- 1. Understood the trends and principles of object oriented methodologies.**
- 2. Gained problem solving skills using developing object based models.**

UNIT I

Object Orientation – System Development – Review of Objects – Inheritance – Object Relationships – Dynamic binding – OOSD life cycle – Process – Analysis- Design - Prototyping– Implementation – Testing – Overview of Methodologies

UNIT II

OMT – Booch methodology, Jacobson – Methodology – patterns – Unified approach– UML –Class Diagrams – Dynamic Modeling

UNIT III

Using Case model – Creation of classes – Noun Phrase approach – responsibilities – Collaborators and relationships – Super – Sub class - Aggregation

UNIT IV

OO Design axioms – Class visibility – refining attributes- Methods – Access layer – OODBMS – Class mapping view layer

UNIT V

Quality Assurance testing – Inheritance and testing - Test Plan – Usability testing – User satisfaction testing

References:

1. Ali Brahmi , “ Object Oriented System Development” , *McGraw-Hill International Edition*
2. Object-Oriented Analysis and Design by Grady Booch, *Addison – Wesley*
3. Object Oriented Modelling and Design by James Rumbaugh ,*MichealBlaha, Prentice Hall*

E 1.3 PC MAINTENANCE AND TROUBLE SHOOTING

Semester : V

Hours:6

Credits:5

Objectives:

1. To know the peripheral of computer.
2. To do simple trouble shooting techniques.

UNIT I

The Basic Microcomputer System – Processor subsystem – 8086 processor – clock generator 8284 - Bus subsystem Bus controller 8288 – Latch 74LS373 – Transceiver 74LS245 – Memory subsystems – Decoder 74LS138 – DMA Controller 8237 – I/O subsystem – PPI 8255 – PIC 8259 – PIT 8253 – Tips and Trouble Shootings.

UNIT II

Inside the IBM PC system unit - * power supply - cabling and connectors - *system board functions – system configuration.

UNIT III

Peripherals – Memory peripherals - * Floppy disk drive – working principle – Removal and Installation – Cleaning and preventive maintenance – Floppy disk format – Winchester disk - *CRT working principle – IBM PC display adapter – printers – interface standards – Modems and Acoustic couplers – Trouble shooting keyboards.

UNIT IV

Servicing – Switch Settings – Cables and connectors – Operation – post – preventive maintenance.

UNIT V

Diagnostics and Troubleshooting – Test equipments – Login problem – oscilloscope.

Text Book

1. Stuart M. Asser, Vincent J. Stigliano, Richard F. Bahrenburg, “Microcomputer servicing practical system and Trouble Shooting”, A Bell & Howell Information Company Columbus, 1990.

E 2.1 CLIENT SERVER COMPUTING

Semester : V

Hours: 6

Credits:5

Objectives:

To inculcate knowledge on Client / Server concepts

UNIT I

Introduction to client/server computing – main frame – centric client/server computing – downsizing and client/server computing – client/server development tools – advantages of client/server computing – connectivity – user productivity reduction in network traffic – faster delivery of systems.

UNIT II

Components of client/server applications – the client – the role of the client, client services – request for service – dynamic data exchange (DDE) – object linking and embedding (OLE) - Common Object Request Broker Architecture (CORBA)- component of client/server applications.

UNIT III

Role of the server – Server functions – network operating systems – Novell Netware – LAN manager – IBM LAN server – Banyan VINES – PC Network file service – server operating systems: Netware, OS/2, Windows NT, Unix –System application Architecture (SAA).

UNIT IV

Components of client / server architecture – connectivity – open system interconnect (OSI) – Inter- process communication – communication interface technology – wide area network technology – Client/Server systems development software – platform migration and reengineering of existing of systems – client server development methodology – client server systems development hardware PC level processing units – Unix Workstation – server hardware – mirrored disk RAID-disk array – CD-ROM-WORM- network interface cards(NIC)

UNIT V

Client/server systems development – service and support – system administration availability – reliability – serviceability – performance – Network management – remote systems management – security – LAN and network management – Client server systems development – training – training advantage of GUI applications – system administrator training – LAN administration – WAN issue – operation system issues – application issues – database administration training – end user training .

Text Book

1. Robert Orfali, Dan Harkey and Jerry Edwards, “Essential Client/server Survival Guide” John Willey and Sons Inc., 1996.
2. Patrick /smith and Steve Guengerich,” Client/Server Computing”, prention Hall of India, Second Edition, 1997.

E 2.2 INTERNET & E-COMMERCE

Semester : V

Hours:6

Credits:5

Objectives:

- 1. To inculcate knowledge on E-Commerce concepts in the present IT world.**
- 2. To know the Internet basics .**

UNIT I

Introduction: Electronic Commerce Frame Work – The anatomy of E-Commerce Applications – Electronic Commerce Consumer Applications – Electronic Commerce Organization Applications – The Network infrastructure for electronic Commerce: Components of the Highway – Network Access Equipment – Global Information Distribution Networks.

UNIT II

The internet as a Network Infrastructure: The Internet Terminology Chronological History of the Internet – NSFNET – Architecture and Components – National Research and Education Network – Globalization of the Academic Internet - The Business of Internet Commercialization: Telco/Cable/Online Companies – National independent ISPs-Regional Level ISPs-Local Level ISPs-Service Provided Connectivity – Internet Connectivity Options.

UNIT III

Network Security and Firewalls: Client Server Network Security – Firewalls & Network Security – Data & Message Security – Challenge Response System – Encrypted Documents & Electronic Mail – Electronic Commerce & World Wide Web: Architectural Framework for Electronic Commerce – Technology Behind the Web – Security and the Web – Consumer Oriented Electronic Commerce: Consumer Oriented Applications – Mercantile Models from the consumers Perspective.

UNIT IV

Electronic Payment System: Types of Electronic Payment Systems – Digital Token Based: Electronic Payment Systems Smart Card & Electronic Payment Systems – Credit Card Based Electronic Payment Systems – Risk & Electronic Payment Systems –Designing Electronic Payment Systems – Inter Organizational Commerce & EDI:

Electronic Data Interchange – EDI Applications in Business – EDI – Implementations, MIME< and value Added Networks: EDI Software Implementations – EDI Envelope for Message Transport – Value – Added Networks (VANS) –Internet – Based EDI.

UNIT V

Advertising and marketing on the Internet: The New age of information Based Marketing – Advertising on the Internet – Charting the On –line Marketing Process – Consumer Search and Resource Discovery: Information search and Retrieval – Electronic Commerce Catalogues or Directories – Information Filtering – Consumer Data Interface Emerging Tools – On Demand Education and Digital Copyrights: Computer Based Education on Demand – Software Agents: Characteristics and Properties of Agents – The Technology Behind Software Agents – Applets, Browsers and Software Agents.

Text Book

1.Ravikalakota& Andrew Whinston, “Froniters of Electornic Commerce”, Addison Wesley, 2000.

Reference Book

1.Pete Loshin, & Paul A.Murphy, “Electronic Commerce”, 2ndE.d., Jaico Publishing House, 2000.

E 2.3 PRINCIPLES OF INFORMATION TECHNOLOGY

Semester : V

Hours: 6

Credits:5

Objectives:

1. To know the various aspects of information Technology.
2. Understand the concepts and technology involved in the field of information Technology.

UNIT I

Information Technology Today – introduction to IT – information systems –software and data – IT in business and industries – applications area of IT – computers in hiding – Global Positioning System. Information Technology in Business – Corporate computing – transaction processing – information tools for management – marketing, advertising and sales – design, production and manufacturing – business on Internet.

UNIT II

The Computer System and CPU – Types of Computers – Anatomy of computer-foundations of modern technology – microprocessor – path of progress – microprocessor fabrication – types of memory – buses – communication with peripherals. Input and Output-Input and Output devices – pointing devices – foundations of modern output – display screen – printers.

UNIT III

Secondary Storage – foundations of modern storage – Storage media-media – floppy disk, hard disk drive and optical disk – increasing data storage capacity – backing up your data – Software – user interface – applications programs – operating system – introduction, types, file management and utilities – document – centric computing – major software issues – network computing.

UNIT IV

Internet and World Wide Web – Introduction to World Wide Web and Web – getting connected to web – browsing web – locating information on Web – Web multimedia Communications – electronic Web – network applications – foundations of modern networks – Local Area Network – Introduction, architecture and system – introduction to Wide Area Network – link between networks – devices, media and protocols – dial – up access – high bandwidth personal connections.

UNIT V

Multimedia – an introduction – tools of multimedia – paint and draw applications, graphic effects and techniques, sounds and music, video and multimedia authoring tools – delivering multimedia –multimedia on the web. Personal, Social and Ethical Issues: Computers and youth health – viruses – Computer crime – cryptography – burning issue.

Text book

1. “Information Technology” – The Breaking Wave, Dennis P.Curtin, Kim Foley, KunalSen& Cathleen Morin, Tata McGraw Hill Ed., 1999.

Chapters: 1,2,3,4,5,6,9,10,11& 13.

Reference Books

- 1.Fundamentals of Computers, Rajaraman V., 2/e Prentice Hall of India, New Mumbai, 1999.
- 2.Fundamentals of Information Technology. Alex Leon, Leon Techno publications, Chennai, 1999.
- 3.Understanding and Using Internet, Subhash Mehta, Global Business Press, New Mumbai, 1996.

CORE XIX

COMPUTER NETWORKS

Semester : VI

Hours : 6

Credits : 5

Objectives:

1. To impart knowledge on network concepts like layers wireless concepts, transmission and security.
2. To give knowledge on networking technologies like broadband and Bluetooth.

UNIT I

Introduction: Uses – Hardware – Software – Reference Models – Examples.

UNIT II

Physical Layer: Transmission Media – Wireless Transmission – Telephone System – Cellular Radio – Communication Satellites.

UNIT III

Data Link Layer and Multiple Access Layer: Data Link Layer Design Issues – Elementary data link Protocols – Multiple Access Protocols, Ethernet.

UNIT IV

Network Layer: Network layer Design Issues – Routing algorithms – Transport Layer Design Issues – Elements of Transport Layer Protocol.

UNIT V

Application Layer: Network Security – E-Mail – WWW – Multimedia.

Text Book

Computer Network by Andrew S. Tanenbawm PHI, III Edition, 1996.

CORE XX

DATA MINING AND WAREHOUSING

Semester : VI

Hours:6

Credits:4

Objectives:

- 1. To present fundamentals of data warehousing.**
- 2. To inculcate knowledge on Data mining Concepts.**
- 3. To have sound knowledge on Data Mining Techniques.**

UNIT I

Data Warehousing: Introduction – Definition – Multidimensional Data Model OLAP operations – Warehouse Schema – Architecture – Metadata – OLAP Engine backend process.

UNIT II

Data Mining – Definition – Comparison with other fields – Techniques – Issues Application Areas Association rules – Methods – A Priori algorithm – Partition Algorithm – Princer Search Algorithm – Border Algorithm – Generalized association rule with Item constraints.

UNIT III

Clustering Techniques – Paradigms – Algorithms – CLARA – CLAEAN Hierarchical clustering – DBSCAN – Categorical Clustering Algorithms – STIRR Decision Trees – Tree construction principle – Best split – Splitting indices – criteria algorithms – CART – ID3.

UNIT IV

Other Techniques – Neural Network – Genetic Algorithm – Rough Sets – support vector machines.

UNIT V

Web Mining – Introduction – Web content mining – Web structure mining – web usage mining – text mining – hierarchy of categories – text clustering.

Text Book:

Data Mining techniques – Arun K Pujari – Universitites Press – 2001.

Reference book

1. Jaiwei Han, MichelinneKamber, “Data Mining :Concepts and Techniques”
2. Pang-NingTan,Michael Steinbach, VipinKumar, ”Introduction to Data Mining” 2007.

CORE XXI

VB .NET WITH MINI PROJECT

Semester : VI

Hours : 6

Credits: 5

PROGRAMMING LIST

1. Write a program to find a grade of students.
2. Write a program to find factorial of given number using functions.
3. Write a program to arrange names in alphabetical order.
4. Write a program to display the user information.(personal details)
5. Calculator.
6. Notepad
7. Employee Details.
8. Hospital Management system.
9. Sales Transaction System.
10. News Paper Vendor Details.

E 3.1 SOFTWARE TESTING**Semester : VI****Hours:6****Credits:5****Objectives:**

- 1. To inculcate knowledge on Software testing concepts.**
- 2. To deal with testing of software at various levels.**

UNIT-I: Software Development Life Cycle models: Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation – Process Model to represent Different Phases - Life Cycle models. White-Box Testing: Static Testing – Structural Testing –Challenges in White-Box Testing.

UNIT-II: Black-Box Testing: What is Black-Box Testing? - Why Black-Box Testing? – When to do Black-Box Testing? – How to do Black-Box Testing? – Challenges in White Box Testing - Integration Testing: Integration Testing as Type of Testing – Integration Testing as a Phase of Testing – Scenario Testing – Defect Bash.

UNIT-III: System and Acceptance Testing: System Testing Overview – Why System testing is done? – Functional versus Non-functional Testing - Functional testing - Non-functional Testing – Acceptance Testing – Summary of Testing Phases.

UNIT-IV: Performance Testing: Factors governing Performance Testing – Methodology of Performance Testing – tools for Performance Testing – Process for Performance Testing – Challenges. Regression Testing: What is Regression Testing? – Types of Regression Testing – When to do Regression Testing – How to do Regression Testing – Best Practices in Regression Testing.

UNIT-V: Test Planning, Management, Execution and Reporting: Test Planning – Test Management – Test Process – Test Reporting –Best Practices. Test Metrics and Measurements: Project Metrics – Progress Metrics – Productivity Metrics – Release Metrics.

TEXTBOOKS:

1. SOFTWARE TESTING Principles and Practices – Srinivasan Desikan&Gopalswamy

Ramesh, 2006, Pearson Education.

(UNIT-I: 2.1-2.5, 3.1-3.4 UNIT-II: 4.1-4.4, 5.1-5.5 UNIT III: 6 .1-6.7

(UNIT IV: 7.1-7.6, 8.1-8.5 UNIT-V: 15.1-15.6, 17.4-17.7)

REFERENCE BOOKS:

1. EFFECTIVE METHODS OF SOFTWARE TESTING–William E.Perry, 3rd ed, Wiley India.

2. SOFTWARE TESTING – RenuRajani, Pradeep Oak, 2007, TMH.

E 3.2 DIGITAL IMAGE PROCESSING**Semester: VI****Hours: 6****Credits: 5****Objectives:**

- 1. To understand the Fundamental Steps in Digital Image Processing.**
- 2. To inculcate knowledge on image compression and image segmentation.**

UNIT I

What is Digital Image Processing? The Origin of Digital Image Processing – Elements of digital image processing – Steps involved in DIP – Fundamental Steps in DIP – Structure of the Human Eye – Brightness Adaptation and Discrimination – Image Acquisition using a single sensor – Image Acquisition using sensor arrays.

UNIT II

Basic concepts in image sampling and Quantization – Representing Digital Images – Spatial and Gray level resolution – Zooming and shrinking digital images – Neighbors of a pixel – Adjacency, Connectivity – Regions and Boundaries – Distance Measures, Image Operations on a pixel basis.

UNIT III

Image Enhancement in Spatial Domain – Gray level transformation – Image Negatives – Log Transformations – Enhancements using arithmetic/logical operations – Image Subtraction – Image Averaging.

UNIT IV

Image Compression: Coding Redundancy – Interpixel redundancy – Psycho visual redundancy – Image compression models – The source encoder and decoder – The channel Encoder and Decoder.

UNIT V

Image Segmentation: Detection of discontinuous – Point detection – Line Detection – Edge Detection – Representation of Images: Chain Codes – Polygonal approximation – Signatures – Boundary segments – Skeletons.

REFERENCE BOOKS:

1. Digital Image Processing Rafael C. Gonzalez & Richard. E. Woods Addison – Wesley publishing Company Inc.(Third Indian Reprint, 2000).

E 3.3 MOBILE COMPUTING

Semester : VI

Hours:6

Credits:5

Objectives:

- 1. To know about the information access device.**
- 2. To impart knowledge on Internet protocols and formats.**
- 3. To offer concepts of wireless Technology.**

UNIT I

Information Access Devices – Handheld Computers – Palm OS – Based Devices
Windows CE – Based Handheld Computers – EPOC Based Handheld Computers – S
Notebooks – Phones – Cellular Phones – Data transmission capabilities – Smart Phones
Screen Phones.

UNIT II

Smart Identification – Smart Cards – Smart Labels – Smart Tokens – Embedded
Controls – Smart Sensors and Actuators – Smart Appliances and home network – Automotive
computing.

UNIT III

Internet Protocols and Formats – HTTP – HTML – XML – Xforms – Mobile Internet
– WAP 1.1 Architecture – Wireless Application Environment 1.1 – WAP 2.0 Architecture –
i-node.

UNIT IV

Voice – Voice Technology Trends – Voice on the web – Standardization.

UNIT V

Connectivity – Wireless Wide Area Networks – Short Range Wireless
Communication.

Text Book

Principles of Mobile Computing – UweHansmann, LotharMerk, Martin S.Nicklous,
Thomas Stober, Springer – Second Edition – 2003.

SKILL BASED V LAB IX
MULTIMEDIA LAB

Semester: VI

Hours: 2

Credits: 2

1. Scenery Creation.
2. Greeting Card Design.
3. Visiting Card Design.
4. Motion Tweening.
5. Shape Tweening.
6. Animation Using Mask Layer.
7. Animation Using Guide Layer.
8. Transforming Object Using Buttons.
9. Screen Creation.
10. Greeting Design & Star Blinking.

Non Major – Elective II
PRINCIPLES OF INFORMATION TECHNOLOGY

Semester: VI

Hours: 2

Credits: 2

Objectives:

- 1. To know the various aspects of an information Technology.**
- 2. To understand the different phases of evaluation of information Technology.**

UNIT I

Introduction: Information Systems – Computers in Business & Industry –
Computers in Home.

UNIT II

Computers in Education & Training - Computers in Entertainment, Science,
Medicine & Engineering

UNIT III

Internet & World Wide Web: Introduction – the Web – Getting connected to
the Web – Browsing the Web – Locating Information on the Web – Web Multimedia.

UNIT IV

Multimedia: Introduction to Multimedia – Multimedia Tools

UNIT V

New technologies in Information Technology: E-commerce – Hypermedia –
Geographic Information System.

TEXT BOOK

Fundamentals of Information Technology – Alexis Leon, Mathews Leon –

Published by Leon Vikas

PG DEPARTMENT OF COMPUTER SCIENCE

Extra Credit Paper I

INTERNET AND WEB BROWSING

Semester: VI

Credits: 2

Objectives:

- 1. To know the internet basics**
- 2. To search the website and browse**
- 3. To send and receive e-mail.**

UNIT I

INTRODUCTION: History of computer – Types of computer – Classification of computers – Applications of computers.

UNIT II

INTERNET BASICS: World Wide Web – Search Engines – Web Browsers.

UNIT III

E-Mail: Creation of E-Mail – Sending and Receiving E-Mail – Attachments.

UNIT IV

Searching the web – Downloading: Text and Pictures.

UNIT V

HTML: Introduction – Structure of a HTML – HTML Tags.

TEXT BOOK

Using the internet the easy way- by yaungkaiseng – Minerva publications, reprint 2003

PG DEPARTMENT OF COMPUTER SCIENCE

Extra Credit Paper II

INCORPORATION OF CURRENT TRENDS IN INFORMATION TECHNOLOGY

Credits: 2

Objectives:

To give knowledge on current Trends in Information Technology

UNIT I

Web development concepts – Web page creation – web site – web hosting.

UNIT II

Focusing of web site based on subject: Search Engines – Online Education – E-mail Servers – Job seeking sites.

UNIT III

Softwares : Free Softwares and downloading – Entertainment – Historical Sites.

UNIT IV

Innovative softwares and its applications : Multimedia and graphics softwares – Scientific Applications – Software development platforms.

UNIT V

Software: Testing – Maintenance – Integration.

Reference Book

1. HTML & XHTML – Thomas A. Powell
2. Internet and web technologies – Rajkamal.

Pattern of the Question Paper(External)

Maximum : 75 marks

Time : 3 Hours.

Part – A

I. Answer any Five questions: (5*3=15)

All questions carry equal marks. Out of 8 questions 5 should be answered.

Part – B

II. Answer any Three questions: (3*10=30)

All questions carry equal marks. Out of 5 questions 3 should be answered.

Part – C

III. Answer any Two questions : (2*15=30)

All questions carry equal marks. Out of 4 questions 2 should be answered.

**Skill Based Course offered by
Computer Science Department to all First year UG students**

UNIT I

Introduction to computers – Definition and characteristics – Functioning of a computer – Generations of a computer – Hardware - Software.

UNIT II

Input Devices: Keyboard, Mouse, Barcode Reader.

Output Devices: Monitor, Printers: Impact and Non-Impact printers.

UNIT III

Memory – Primary memory: RAM and ROM.

Secondary Memory: Floppy disk, Hard Disk, Magnetic Tape & CD-ROM.

UNIT IV

MS Word: Windows Layout – menus: File, Edit, View, Insert, Format, Tools, Table, Windows – Saving & Exiting – Spell check – Table creation – Inserting pictures.

UNIT V

Computer Applications in various areas – Internet: Introduction to Network – Internet services.

BOOKS FOR REFERENCES

1. Computer Today – Donald H.Sanders – 2nd Edition, McGraw Hill.
2. MS Office 2000 – Sanjay Saxena – Vikas Publishing Pvt. Ltd., New Delhi.
3. Easy Office 2000 – First Edition – SISO Books, Thiruvannathapuram.

**Skill Based Course Offered By
PG Department Of Computer Science
To**

All First Year UG Students

Course Name: COMPUTER *LITERACY*

With effect from 2011-2012

Pattern of the Question Paper (External)

Maximum: 75 marks

Time : 3 Hours.

Part – A

I. Answer all questions (objective type): (20*2=40)

All questions carry equal marks.

Part – B

II. Answer any ten questions: (10*2=20)

All questions carry equal marks. Out of 15 questions 10 should be answered.

Part – C

III. Answer any two questions: (2*7.5=15)

All questions carry equal marks. Out of 4 questions 2 should be answered.

