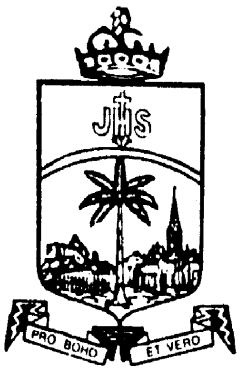
M.Sc. COMPUTER SCIENCE

SYLLABUS : 2012

CHOICE BASED CREDIT SYSTEM (CBCS)



St. JOSEPH'S COLLEGE (Autonomous)

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

College with Potential for Excellence by UGC

TIRUCHIRAPPALLI - 620 002, INDIA.

FEATURES OF CHOICE BASED CREDIT SYSTEM

PG COURSES

The Autonomous (1978) St. Joseph's College, accredited with Five Star status in 2001, Re-accredited with **A⁺ Grade** from **NAAC (2006),** Re-accredited with **A Grade** from **NAAC (3rd cycle)**, had introduced the Choice Based Credit System **(CBCS**) for PG courses from the academic year 2001-2002. As per the guidelines of Tamil Nadu State Council of Higher Education (TANSCHE) and the Bharathidasan University, the College has reformulated the CBCS in 2008-2009 by incorporating the uniqueness and integrity of the college.

OBJECTIVES OF THE CREDIT SYSTEM

- To provide mobility and flexibility for students within and outside the parent department as well as to migrate between institutions
- To provide broad-based education
- To help students learn at their own pace
- To provide students scope for acquiring extra credits
- To impart more job oriented skills to students
- To make any course multi-disciplinary in approach

What is credit system?

Weightage to a course is given in relation to the hours assigned for the course. Generally one hour per week has one credit. For viability and conformity to the guidelines credits are awarded irrespective of the teaching hours. The following Table shows the relation between credits and hours.

Sem.	Specification	No. of Papers	Hour	Credit	Total Credits
I – IV	Core Courses (Theory & Practical)	14	6	14 x 5	70
	Project	1	--	1 x 5	05
I – IV	3 – Core Electives 1 – Soft Skill Course (Common) (IDC-1)	3	4	3 x 4	12
	1 – Inter Dept. Courses (IDC-2)	2	4	2 x 4	08
I – IV	SHEPHERD – Extension Activity	~	70	5	05

Total Minimum Credits **100**

Other Additional Credits (Dept. Specific) **….**

However, there could be some flexibility because of practicals, field visits, tutorials and nature of project work.

For PG courses a student must earn a minimum of 100 credits. The total number of courses offered by a department is 20. However within their working hours a few departments can offer extra credit courses.

Course Pattern

The Post Graduate degree course consists of three major components. They are Core Course, Elective Course and Inter Departmental Course (IDC). Also 2 compulsory components namely Project / Project related items and SHEPHERD, the extension components are mandatory.

Core Course

A core course is the course offered by the parent department, totally related to the major subject, components like Practicals, Projects, Group Discussions, Viva, Field Visits, Library Record form part of the core course.

Elective Course

The course is also offered by the parent department. The objective is to provide choice and flexibility within the department. The student can choose his/her elective paper. Elective is related to the major subject. The difference between core course and elective course is that there is choice for the student. The department is at liberty to offer three elective courses any semester. It must be offered at least in two different semesters. The staff too may experiment with diverse courses.

Inter Departmental Course (IDC)

IDC is an inter departmental course offered by a department for the students belonging to other departments. The objective is to provide mobility and flexibility outside the parent department. This is introduced to make every course multi-disciplinary in nature. It is to be chosen from a list of courses offered by various departments. The list is given at the end of the syllabus copies. Two IDC s must be taken by students which are offered in Semester II & III. In

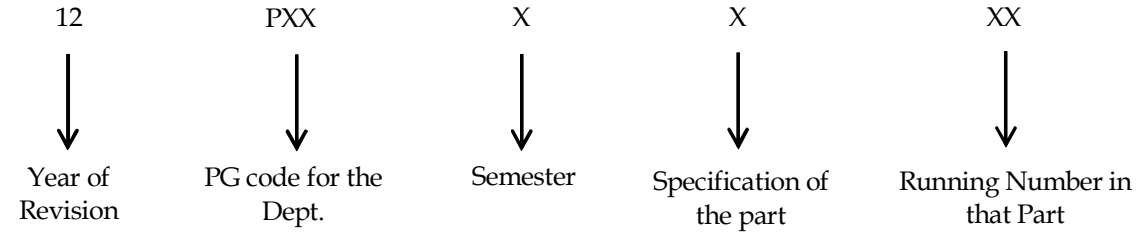
semester II, a common IDC, Soft Skills is to be offered by JASS (Joseph Academy of Soft Skills).

Day College (Shift-I) student may also take an IDC-2 from SFS (Shift-II) course and vice versa

The IDC are of application oriented and inter-disciplinary in nature.

Subject Code Fixation

The following code system (9 characters) is adopted for Post Graduate courses:



01 – Core Courses: Theory & Practical
02 – Core electives
03 – Additional Core Papers (if any)
04 – Inter Departmental Courses
05 – Project
06 – SHEPHERD

CIA Components

The CIA Components would comprise of two parts: (1) Test Components conducted by Controller of Examination (COE) and (2) Teacher specific component. The two centralized tests will be conducted by the COE (Mid-Semester Test & End-Semester Test) for 30% each administered for 2 hours duration. The remaining 40% would comprise of any three components as listed below and will be carried out by the faculty concerned for that paper.

* Assignment, Quiz (Written / Objective), Snap Test, Viva-Voce, Seminar, Listening Comprehension, Reading Comprehension, Problem Solving, Map Reading, Group Discussion, Panel Discussion, Field Visit, Creative Writing, Open Book Test, Library Record, Case Study, etc.

* As a special consideration, students who publish papers in referred journals would be exempted from one of the teacher specific internal components in one of the papers. At the beginning of each semester, the four internal components would be informed to the students and the staff will administer those components on the date specified and the marks acquired for the same will be forwarded to the Office of COE.

Evaluation

For each course there are formative continuous internal assessment (CIA) and semester examinations (SE) in the weightage ratio 50:50.

Once the marks of CIA and SE for each course are available, the Overall Percentage Mark (OPM) for a student in the programme will be calculated as shown below:

$$OPM = \frac{\sum_i C_i M_i}{\sum_i C_i}$$ where C_i is the credit earned for that course in any semester and M_i is the marks obtained in that course.

The Scheme of Over-all Results is as follows:

	PG	
Class	**Arts (OPM)**	**Science (OPM)**
SECOND	50 to 59.99	50 to 59.99
FIRST	60 to 74.99	60 to 79.99
DISTINCTION	75 & Above	80 & Above

Declaration of Result

Mr./Ms. _____ has successfully completed M.Sc./M.A. degree course in _____. The student's overall average percentage of marks is _____ and has completed the minimum 100 credits. The student has also acquired _____ (if any) additional credits from courses offered by the parent department.

M.Sc. Computer Science - Course Pattern

SEM	CODE	SUBJECT	HR	CR
I	12PCS1101	JAVA PROGRAMMING	5	5
	12PCS1102	ADVANCED DATABASE SYSTEMS	5	5
	12PCS1103	MATHEMETICAL FOUNDATIONS	5	5
	12PCS1104	LAB: JAVA PROGRAMMING	6	6
	12PCS1105	LAB: RDBMS & D2K	5	5
	12PCS1201A	ELECTIVE I: OOAD & UML (OR)	4	4
	12PCS1201B	ELECTIVE I: MIS	(4)	(4)
		Total For Semester I	**30**	**30**
II	12PCS2106	WEB DEVELOPMENT WITH ASP.NET	6	6
	12PCS2107	DISTRIBUTED OPERATING SYSTEM	5	5
	12PCS2108	MICROPROCESSORS AND INTERFACING	5	5
	12PCS2109	LAB: ASP.NET	6	6
	12PCS2202A	ELECTIVE II: FUNDAMENTALS OF MOBILE AND PERVASIVE COMPUTING (OR)	4	4
	12PCS2202B	ELECTIVE II: COMPILER DESIGN	(4)	(4)
	12PSK2401	IDC I: SOFT SKILLS	4	4
		Total For Semester II	**30**	**30**
III	12PCS3110	PHP WITH MYSQL	5	5
	12PCS3111	SOFTWARE ENGINEERING	5	5
	12PCS3112	CRYPTOGRAPHY AND NETWORK SECURITY	5	5
	12PCS3113	LAB: PHP	4	4
	12PCS3114	MINI PROJECT	3	3
	12PCS3203A	ELECTIVE III: DATA WAREHOUSING & DATA MINING(OR)	4	4
	12PCS3203B	ELECTIVE III: ARTIFICIAL NEURAL NETWORKS	(4)	(4)
	12PCS3402A	IDC II: FLASH (OR)	4	4
	12PCS3402B	IDC II: WEB DESIGN	(4)	(4)
		Total For Semester III	**30**	**30**
IV	12PCS4501	MAJOR PROJECT		5
II-III	12PCS4601	EXTENSION SERVICE: SHEPHERD		5
		TOTAL FOR ALL SEMESTERS	**100**	**100**

SEM: I ***Hours/Week : 5***

12PCS1101 ***Credits : 5***

JAVA PROGRAMMING

AIM

✶ To develop the programming skills of the students in JAVA language.

UNIT I **13 Hrs**

OVERVIEW OF JAVA: Object-Oriented Programming- Creation of Java – Byte code - Features. **CLASSES AND OBJECTS:** Class Fundamentals – Declaring Objects – Introducing Methods. Overloading Methods – Overloading Constructors – Returning Objects – Introducing Access Control – Understanding Static. **INHERITANCE:** Basics – Super – Method Overriding - Dynamic Method Dispatch – Abstract Class – Final with Inheritance. **STRING HANDLING:** String Class **-** String Operations.

UNIT II **13 Hrs**

PACKAGES AND INTERFACES: Packages – Access Protection – Importing Packages – Interfaces. **EXCEPTION HANDLING:** Exception Handling Fundamentals – Exception Types – try and catch – Multiple Catch Clauses – throw – throws – finally – Built-in Exceptions – Creating Your Own Exception. **I/O:** Basics - Streams – Byte Streams and Character Streams – The Predefined Streams - Reading Console Input – Writing Console Output – Stream Classes – The Byte Stream – FileInputStream – FileOutputStream.

UNIT III **13 Hrs**

MULTITHREADED PROGRAMMING: The Java Thread Model - The Main Thread – Creating a Thread – Thread Priorities – Synchronization – Interthread Communication – Suspending, Resuming and Stopping Threads. **JDBC:** Driver – Connection – Statements. **RMI:** Client / Server Application using RMI.

UNIT IV **13 Hrs**

THE APPLET CLASS: Applet Basics – Applet Architecture -

An Applet Skeleton – Simple Applet Display Methods – Requesting Repainting –The HTML APPLET Tag – Passing Parameters to Applets. **EVENT HANDLING:** Event Classes – Event Listeners. **AWT CONTROLS:** Control Fundamentals - Labels – Buttons – Checkboxes – Checkbox Group – Choice Controls - Lists – Scroll Bars – TextField – TextArea – Layout Managers – Menu Bars And Menus. **SWING:** JApplet – Icons and Labels – Text Fields – Buttons – Combo Boxes – Tabbed Panes – Scroll Panes – Trees – Tables.

UNIT V **13 Hrs**

NETWORKING: Networking Basics – TCP/IP Client Sockets – TCP/IP Server Sockets – Datagrams. **JAVA BEANS:** Introduction of Java Bean – Advantages of Java Beans – Application Builder Tools – Bean Developer Kit – JAR Files – Developing Simple Bean using BDK. **SERVLETS:** The Life Cycle of a Servlet – A Simple Servlet – The Servlet API – The javax.servlet Package – Reading Servlet Parameters.

BOOKS FOR STUDY

1. Herbert Schildt, "The Complete Reference Java 2", McGraw-Hill, 5th Edition, New Delhi,2002.
2. Narayana Rao Surapaneni Dhanajay Katre, "Java & .Net", 1st Edition, Prentice Hall of India, New Delhi, 2004. UNIT: III (JDBC).

BOOK FOR REFERENCE

C. Muthu, "Programming with JAVA", Vijay Nicole Imprints, Chennai, 2004.

SEM: I *Hours/Week: 5*

12PCS1102 *Credits : 5*

ADVANCED DATABASE SYSTEMS

AIM

✶ To offer exposure to the design and concepts of advanced database systems.

UNIT I **13 Hrs**

INTRODUCTION TO DATABASE SYSTEM: Basic concepts and Definition – Data dictionary- Data base – Database System – Database Administrator – File oriented System versus Database Systems – Data language. **DATABASE SYSTEM ARCHITECTURE:** Introduction – Schema, Sub-schema and Instances – Structure – Components and Function of DBMS – Data models – Types of database systems.

UNIT II **13 Hrs**

RELATIONAL QUERY LANGUAGE: Structured Query Language – QBE. **ENTITY RELATIONSHIP MODEL:** Basic E-R concepts – Conversion of E-R model into Relations – E-R Diagram Symbols. **NORMALIZATION:** Normal Forms – Boyce code normal form – Multi-valued Dependencies & Fourth Normal Form – Join Dependencies & Fifth Normal Form.

UNIT III **13 Hrs**

TRANSACTION PROCESSING AND CONCURRENCY CONTROL: Transaction concepts – Concurrency control – Locking Methods – Timestamp Methods – Optimistic Methods. **DATABASE RECOVERY SYSTEM:** Database Recovery concepts – Types of database failures – Types of database Recovery – Recovery Techniques.

UNIT IV **13 Hrs**

OBJECT ORIENTED DATABASES: Object Oriented Data Model - Concept of Object Oriented Database – Object Oriented DBMS. **OBJECT RELATIONAL DATABASE:** ORDBMS query language – ORDBMS Design.

UNIT V **13 Hrs**

PARALLEL DATABASE SYSTEMS: Architecture – Key Elements – Query Parallelism. **DISTRIBUTED DATABASE SYSTEM:** Distributed database – Architecture – DDBS Design – Distributed query processing. **EMERGING DATABASE TECHNOLOGIES:** Internet Databases – Digital Libraries – Multimedia Databases – Mobile Databases – Spatial Databases – Disaster proof Databases.

BOOK FOR STUDY

Shio Kumar Singh, "Database systems concepts, Design and application", 2nd Edition, Dorling Kindersley India Pvt .Ltd - 2011.

BOOKS FOR REFERENCE

1. C.J. Date, "An Introduction to Database Systems", Addison-Wesley, New Delhi, 2005.
2. Abraham Silberschatz, Henry F. Korth, S. Sudarshan, "Database System Concepts", Tata McGraw – Hill, California, 2002.

SEM: I *Hours/week: 5*

12PCS1103 *Credits: 5*

MATHEMATICAL FOUNDATIONS

AIM

- To impart the mathematical concepts and numerical methods required for Information Technology.
- To make the student solve real life problems in Business and Management.

UNIT I **13 Hrs**

OPERATION RESEARCH: Basics of OR – OR & Decision Making -Linear Programming- Mathematical Formulation- Graphical Solution – Canonical & Standard Forms of LPP.

UNIT II **13 Hrs**

SIMPLEX METHOD: Simplex Method for <, =, > constraints – Charne's Method of Penalties– Transportation Problem and its Solution.

UNIT III **13 Hrs**

MATHEMATICAL LOGIC: Propositions - Precedence Rules for Operators - Tautologies- Laws of Equivalence –Substitution Rules - Natural Deduction System - Developing Natural Deduction System Proofs.

UNIT IV **13 Hrs**

INTERPOLATION: Lagrange's and Newton Interpolation- Interpolating Polynomials using Finite Difference **NUMERICAL INTERGRATION:** Trapezoidal, Simpson's rules and Romberg Integration.

UNIT V **13 Hrs**

NUMERICAL METHODS: Polynomial Equation: Brige - Vieta, Graeffe's Root Squaring Methods. **INTEGRATION:** Gauss Lagrange – Gauss Chebyshev- Gauss Hermite Methods.

BOOKS FOR STUDY

1) Manmohan & Gupta, "Operations Research", Sultan Chand Publishers, New Delhi, 2002. UNIT I

2) Kanti Swarup-Gupta-ManMohan: Operations Research-Seventh edition 1994. UNIT II

3) David Gries, "The Science of Programming", Narosa Pub. House, New Delhi, 1993. Chapters1, 2, 3.1 to 3.3 UNIT III

4) M.K.Jain, S.R.K. Lyengar, R.K.Jain," Numerical Methods for Scientific and Engineering Computation", 3rd ED., New Age Pub., New Delhi, 1992, Chapters: 2.8, 5.8 UNITS IV & V.

SEM: I ***Hours/Week : 6***

12PCS1104 ***Credits : 6***

LAB – JAVA PROGRAMMING

1. Class, Object and Constructor
2. Inheritance, Interface & Packages
3. Polymorphism
4. Exception Handling
5. I/O Streams
6. Applet & AWT
7. JDBC Connectivity
8. Thread
9. Networking
10. Java Beans
11. Swing
12. Servlets

SEM: I *Hours/week: 5*

12PCS1105 *Credits : 5*

LAB – RDBMS &D2K

SQL

1. Basic Queries and Aggregate Functions.
2. Set Operations
3. Joins
4. Sub Queries
5. View

PL/SQL

6. Cursors
7. Triggers
8. Exceptions
9. Procedures and Functions
10. Packages

D2K

11. Form Creation using Menu
12. Form Validation

SEM: I *Hours/week: 4*

12PCS1201A *Credits : 4*

ELECTIVE I: OOAD & UML

AIM

- To impart the concepts of Object oriented methodologies and Unified Modeling Language.

UNIT I **12 Hrs**

INTRODUCTION: An Overview of Object Oriented Systems Development - Object Basics - Object Oriented Systems Development Life Cycle. **OBJECT ORIENTED METHODOLOGIES:** Rambaugh Methodology - Booch Methodology - Jacobson Methodology - Unified Approach.

UNIT II **12 Hrs**

OBJECT ORIENTED ANALYSIS: Identifying Use Cases - Object Analysis - Classification - Identifying Object Relationships - Attributes and Methods. **OBJECT ORIENTED DESIGN:** Object Oriented Design Process and Design Axioms – Designing Classes.

UNIT III **12 Hrs**

UML: Importance of modeling - Principles of Modeling- Object Oriented Modeling- Introducing UML. **BASIC STRUCTURAL MODELING**: Classes - Relationships - Common Mechanisms- Diagrams – Class Diagrams.

UNIT IV **12 Hrs**

BASIC BEHAVIORAL MODELING: Interactions- Use Cases –Use Case Diagrams-Interaction Diagram – Activity Diagram. **ADVANCED BEHAVIORAL MODELING**: State Diagrams.

UNIT V **12 Hrs**

ARCHITECTURAL MODELING: Artifacts - Deployments – Collaborations – Patterns and Frame works - Artifact Diagrams - Deployment Diagrams.

BOOKS FOR STUDY

1. Ali Bahrami, "Object Oriented systems Development", Irwin – McGraw Hill, New Delhi, 2008. CHAPTERS: 1-3, 4, 6-10, UNITS I & II.
2. Grady Booch, James Rambaugh, Ivar Jacobson, "The Unified Modeling Language User Guide" Pearson Education, New Delhi, 2004. Chapters: 1, 2 and 4, 5-20, 25, 26, 28, 30-32. UNITS III, IV & V.

BOOKS FOR REFERENCE

1. Stephen R. Schach, "Introduction to Object Oriented Analysis and Design", Tata McGraw-Hill, 2003.
2. James Rumbaugh, Ivar Jacobson, Grady Booch "The Unified Modeling Language Reference Manual", Addison Wesley, 1999.
3. Hans-Erik Eriksson, Magnus Penker, Brain Lyons, David Fado, "UML Toolkit", OMG Press Wiley Publishing Inc., 2004.

SEM: I *Hours/Week : 4*

12PCS1201B *Credits : 4*

ELECTIVE I - MANAGEMENT INFORMATION SYSTEMS

AIM

- To give an understanding about Information Systems, how it relates to a managerial end-user's business and to impart the knowledge on ERP Systems.

UNIT I **10 Hrs**

INTRODUCTION TO INFORMATION SYSTEMS (IS): Why Study IS - Why Business Need Information Technology (IT) - Fundamentals of IS Concepts - Overview of IS - Solving Business Problems with IS - Developing IS Solutions.

UNIT II **12 Hrs**

INFORMATION SYSTEMS FOR BUSINESS OPERATIONS: Business IS - Marketing, Manufacturing, Human Resource, Accounting and Financial Information Systems - Transaction Processing System - Management Information and Decision Support Systems. **MANAGING INFORMATION TECHNOLOGY:** Managing Information Resource and Technologies - Global IT Management - Planning and Implementing Business Change with IT.

UNIT III **12 Hrs**

ENTERPRISE RESOURCE PLANNING (ERP): An Overview - Benefits of ERP - ERP and Related Technologies - Business Process Reengineering. **ERP IMPLEMENTATION:** ERP Implementation Life Cycle - Implementation Methodology - Hidden Cost - Organizing the Implementation - Vendors, Consultants and Users Contracts with Vendors, Consultants and Employees Project Management and Monitoring - ERP Present and Future - ERP and E-commerce - ERP and Internet.

UNIT IV **13 Hrs**

FROM E-COMMERCE TO E-BUSINESS: Linking Today's Business with Tomorrow's Technology – E-business – Structural Transformation – E-business Requires Flexible Business Design Challenge Traditional Definition of Value – E-business Trend Spotting: Increase Speed of Service – Empower your Customer – Provide Integrated Solution, Not Piecemeal Products – Integrate your Sales and Service – Ease of Use – Provide Flexible Fulfillment and Convenient Service Delivery – Increase Process Visibility.

UNIT V **13 Hrs**

E-BUSINESS DESIGN: Construction an E-business Design – Self Diagnosis – Reversing the Value Chain – Choosing a Narrow Focus – Constructing the E-business Architecture: The New Era of Cross – Functional integrated Apps – Aligning the e-business Design with Application Integration. **CUSTOMER RELATIONSHIP MANAGEMENT:** Defining CRM – The New CRM Architecture – Next-Generation CRM Trends.

BOOKS FOR STUDY

1. James A O'Brien, "Management Information Systems for Managing IT in the Internetworked Enterprise", 7th Ed., Tata McGraw Hill, New Delhi, 1999. UNITS I & II
2. Alexis Leon, "ERP Demystified", Tata McGraw Hill, New Delhi, 2000. UNIT III
3. Ravi Kalakota and Marcia Robinson, "e-Business Roadmap for Success", Addison-Wesley, New Delhi, 2000. UNITS IV & V

BOOK FOR REFERENCE

W.S. Jaswadekar, "Management Information Systems", Tata McGraw Hill, New Delhi, 1998.

SEM: II *Hours / Week: 6*

12PCS2106 *Credits: 6*

WEB DEVELOPMENT WITH ASP.NET

AIM

✶ To provide fundamental concepts of ASP.NET programming and a brief introduction about XML & Web Services.

UNIT I **13 Hrs**

INTRODUCTION: The .NET Framework - Learning .NET Languages – Understanding Namespaces & Assemblies – Setting up ASP.NET and IIS. **USING VISUAL STUDIO.NET:** Starting VS.NET Project – Web Form Designer – Writing Code – VS.NET Debugging.

UNIT II **13 Hrs**

WEB CONTROLS: Stepping Up to Web Controls – Web Control Classes – AutoPostBack and Web Control Events. **VALIDATION & RICH CONTROLS:** Calendar – AdRotator – Validation Controls – Server Side Validation – Understanding Regular Expression. **STATE MANAGEMENT:** View State – Transferring Information-Cookies – Session State – Session State Configuration – Application State

UNIT III **13 Hrs**

ADO.NET OVERVIEW: Characteristics of ADO.NET – ADO.NET Object Model-**ADO.NET DATA ACCESS:** Creating a Connection – Using Command with Data Reader – Updating Data – Accessing Disconnected Data. **DATALIST AND DATAGRID** – Using Templates with DataList – Data Binding with Multiple Templates – Selecting Items – Editing Items – Paging with DataGrid – Sorting with DataGrid.

UNIT IV **13 Hrs**

USING XML: Basics – XML Classes – XML Validation – XML Display and Transforms – XML in ADO.NET – **CACHING AND PERFORMANCE TUNING:** Caching - Data Caching – AJAX

UNIT V **13 Hrs**

WEB SERVICES ARCHITECTURE: Internet Programming Then and Now – WSDL – SOAP – Communicating With a Web Service – Web Service Discovery and UDDI. **CREATING WEB SERVICES:** Basics – StockQuote Web Service – Documenting Web Service – Testing Web Service.

BOOK FOR STUDY

Mathew MacDonald, "ASP.NET: The Complete Reference", Tata McGraw Hill Ltd, New Delhi, 2008.

BOOK FOR REFERENCE

Dr. C. Muthu, "ASP.NET", Shalom InfoTech Pvt. Ltd., 2011.

SEM: II *Hours / Week: 5*

12PCS2107 *Credits : 5*

DISTRIBUTED OPERATING SYSTEM

AIM

✶ To provide fundamental concepts in the design of the Unix Operating System and Design Principles that is applicable to distributed operating system.

UNIT I **13 Hrs**

DISTRIBUTED COMPUTING SYSTEM: Evolution – Models – Distributed Operating System – Issues In Designing DOS – DCE. **MESSAGE PASSING:** Features of a Good Message Passing – Issues in IPC by Message Passing – Multidatagram Messages – Encoding and Decoding of Message Data – Process Addressing – Failure Handling – Group Communication.

UNIT II **13 Hrs**

REMOTE PROCEDURE CALL: The RPC Model – Transparency Of RPC – RPC Messages – Server Management – Parameter Passing Semantics – Call Semantics – **DISTRIBUTED SHARED MEMORY:** General Architecture of DSM Systems – Design And Implementation Issues of DSM - Structure of Shared Memory Space – Consistency Models – Advantages of DSM.

UNIT III **13 Hrs**

SYNCHRONIZATION: Clock Synchronization – Event Ordering – Mutual Exclusion – Deadlock. **PROCESS MANAGEMENT:** Process Migration – Threads. **DISTRIBUTED FILE SYSTEM:** Features of A Good Distributed File System – File Models – File Accessing Models.

UNIT IV **13 Hrs**

GENERAL OVERVIEW OF THE SYSTEM: History – System Structure – User Perspective – Operating System Services. **KERNEL**: Architecture of the UNIX operating system – Introduction to System Concepts – Kernel Data Structures – System Administration.

UNIT V **13 Hrs**

BUFFER CACHE: Buffer Headers - Structure of the Buffer Pool - Advantages and Disadvantages. **INTERNAL REPRESENTATION OF FILES:** Inodes – Structure of a Regular File – Directories – Conversion of a Path Name to an Inode – Super block **SYSTEM CALLS FOR THE FILE SYSTEM:** Open – Read – Write – File and Record Locking – Adjusting the Position of File I/O –LSEEK – Close – File Creation – Creation of Special Files – Pipes – Dup – Mounting and Unmounting File Systems

BOOKS FOR STUDY

1. Pradeep K. Sinha, "Distributed Operating System Concepts and Design ", PHI, New Delhi, 2007. UNITS I, II & III
2. Maurice J. Bach, "The Design of the Unix Operating System", Pearson Prentice Hall, New Delhi, 2007 UNITS IV & V

BOOK FOR REFERENCE

Andrew S Tanaenbaum, "Modern Operating System", PHI, New Delhi, 2001.

SEM: II *Hours / Week: 5*

12PCS2108 *Credits: 5*

MICROPROCESSORS AND INTERFACING

AIM

- To impart knowledge on 8085 microprocessor architecture and its interfacing and to give necessary technical basis for understanding modern processors.

UNIT I **12 Hrs**

MICROPROCESSOR ARCHITECTURE: Intel 8085 – Instruction Cycle – Timing Diagram.

UNIT II **13 Hrs**

INSTRUCTION SET OF INTEL 8085: Instruction and Data Formats – Addressing Modes – Status Flags – Intel 8085 instructions.

* ***Stress is not given to programming***

UNIT III **14 Hrs**

PHERIPHERAL DEVICES AND THEIR INTERFACING: Address Space Partitioning – Memory & I/O interfacing – Data Transfer Schemes – Interrupts of Intel 8085 – Interfacing Devices & I/O Devices – I/O Ports – Programmable DMA Controller – Programmable Interrupt Controller – Programmable Communication Interface – Programmable Counter/Interval Timer.

UNIT IV **12 Hrs**

MICROPROCESSOR – BASED DATA ACQUISITION SYSTEM: ADC 0800 - Digital to Analog Converter **APPLICATIONS:** Delayed Subroutines – T-Segment LED Display – Microprocessor Based Traffic Control – Interfacing of Digital Multiplexer/Data Selector.

UNIT V **14 Hrs**

INTEL'S MICROPROCESSORS: INTEL Pentium Processor – MMX Technology – Pentium MMX – Pentium Pro MP – Dynamic Execution of Instructions – Speculation Execution – Branch Prediction – Pentium II – Pentium III – Pentium IV

BOOK FOR STUDY

B. RAM, "FUNDAMENTALS OF MICROPROCESSORS AND MICROCOMPUTERS", 6th Edition, Dhanpat Rai Publications (P) Ltd., New Delhi, 2009. CHAPTERS: 3, 4, 7.1 – 7.11, 8.1, 8.6, 8.12, 9.1 – 9.3, 9.8, 9.9, 12.3 – 12.11, 12.13.

BOOK FOR REFERENCE

RAMESH GOANKAR, "MICROPROCESSOR ARCHITECTURE, PROGRAMMING, AND APPLICATIONS WITH THE 8085", 5th Edition, Penram International Publishing (India) Private Limited, Mumbai, 2008.

SEM II ***Hours / Week: 6***

12PCS2109 ***Credits: 6***

LAB – ASP.NET

1. Form Design using Various Web Controls
2. Ad Rotator, Calendar Control and Login Control (Page Should Expire after 3 wrong attempts)
3. Validation Controls
4. Cookie Manipulation
5. State Management (using Session and Application)
6. Data Retrieval, Updating using ADO.NET (using Stored Procedure)
7. Designing Templates using DataList and DataGrid
8. Sorting and Paging using DataGrid
9. Day Planner Preparation using XML and ADO.NET
10. Data Caching
11. Partial Page Refresh using AJAX
12. Creating and Testing a Simple Web Service

SEM: II *Hours / Week: 4*

12PCS2202A *Credits : 4*

ELECTIVE II - FUNDAMENTALS OF MOBILE AND PERVASIVE COMPUTING

AIM

- To provide basis for various techniques in Mobile Computing and Mobile Computing.

UNIT I **12 Hrs**

MOBLIE COMPUTING: Adaptability – The Key to Mobile Computing – Mechanisms for Adaptation – Development or incorporation of adaptations in applications. **MOBILITY MAGNAGEMENT**: Concept of Mobility Management – Location Management – Principles and techniques.

UNIT II **12 Hrs**

Data Dissemination – Mobile Data Caching – Mobile Cache Maintenance Schemes – Moblie Web Caching – **CONTEXT-AWARE COMPUTING :** Ubiquitous of pervasive Computing – Various Definitions and types of contexts – Context Aware Computing & Applications – Middleware Support. **INTRODUCTION TO MOBILE MIDDLEWARE:** Definition of Mobile Middleware – Application – Agents – Service Discovery.

UNIT III **12 Hrs**

INTRODUCTION TO AD-HOC AND SENSOR NETWORKS: Overview – Properties of an Ad-hoc Network – Unique Features of Sensor Networks – Proposed Applications – Challenges – Constrained Resources – Security – Mobility.

UNIT IV **12 Hrs**

WIRELESS SECURITY: Traditional Security Issues – Mobile and Wireless Security Issues. **MOBILITY:** Problems in Ad-hoc Networks. **ADDITIONAL ISSUES:** Commerce – Additional Types of Attacks. **APPROACHES TO SECURITY**: Limit the Signal – Encryption – Integrity Codes – IPSec – Other Security Related Mechanisms.

UNIT V **12 Hrs**

SECURITY IN WPAN: Security in Wireless Personal Area Networks – Basic Idea – Bluetooth Security Modes – Basic Security Mechanisms – Encryption: Authentication – Limitation and Problems. **SECURITY IN WLAN:** Security in Wireless Local Area Networks – Basic Ideas – Wireless Alphabet Soup – Wired-Equivalent Privacy (WEP) – WPA Fixes and Best Practices.

BOOK FOR STUDY

Frank Adelstein, Sandeep K.S., Gupta Golden G. Richard III Loren Schwibert "Fundamentals of Mobile and Pervasive Computing", Tata Mcgraw Hill Education Private Limited, 2005.

BOOKS FOR REFERENCE

1. Jochen Burkhardt, Horst Henn, Stefan Hepper, Thomas Schaeck "Pervasive Computing", Pearson Publications, 2002.
2. Asoke K Talukder, Hasan Ahmed, Roopa Yavagal, "Mobile Computing" 2nd edition Tata Mcgraw Hill Education Private Limited, 2010.

SEM: II *Hours / Week: 4*

12PCS2202B *Credits : 4*

ELECTIVE II – COMPILER DESIGN

AIM

✶ To inculcate various phases of a compiler and also to develop the skill of a student in designing a compiler.

UNIT I **12 Hrs**

INTRODUCTION: Different Phases of Compiler - Finite State Automation and Lexical analysis – A Simple Approach to the Design of Lexical Analyzers - Regular Expressions - A Language for Specifying Lexical Analyzers.

UNIT II **12 Hrs**

SYNTAX SPECIFICATION: Context Free Grammars – Parsers - Derivation and Parse trees – Shift Reduce Parsing – Operator Precedence Parsing - Top-Down Parsing - Predictive Parsers.

UNIT III **12 Hrs**

CODE GENERATION: Intermediate Code Generation – Translation – Implementation of Syntax – Directed Translators – Intermediate Code – Postfix Notation – Parse Trees and Syntax Trees – Three Address Codes, Quadruples and Triples.

UNIT IV **12Hrs**

SYMBOL TABLES: Contents of a Symbol Table – Data Structures for Symbol Tables – Implementation of a Simple Stack Allocation Scheme – Implementation of Block Structured Languages – Storage Allocation in Block Structured Languages – Errors – Lexical Phase Error.

UNIT V **12 Hrs**

CODE OPTIMIZATION AND CODE GENERATION: Elementary Code Optimization technique – Loop Optimization – DAG Representation of Basic Blocks – Value Numbers and Algebraic

Laws – Object Programs – Problems in Code Generation – A Machine Model – A Simple Code Generator.

BOOK FOR STUDY

Alfred V. Aho, Jeffery D.Ullman, "Principles of Compiler Design", Narosa, New Delhi, 2002. Ch:1.1-1.11,3.1-3.7,4.1,4.2,5.1-5.5,7.1–7.6, 9.1, 9.2, 10.1, 10.2, 11.1, 11.2, 12.1-12.4,15.1-15.4.

BOOKS FOR REFERENCE

1. Dick Grune, Henri E. Bal, Ceriel J.H.Jacobs, Koen G. Langondeon, "Modern Compiler Design", Wiley, Singapore, 2003.
2. Louden K., "Compiler Construction, Principles and Practice", Thomson, New Delhi, 2003.

SEM-II *Hours/Week - 4*
12PSK2401 *Credits - 4*

IDC-I: SOFT SKILLS

Unit 1: Effective Communication & Resume Writing 12 Hours

Effective Communication

Definition of communication, Process of Communication, Barriers of Communication, Non-verbal Communication, Johari Window, The Art of Listening, Kinesthetic, Production of Speech, Organization of Speech, Modes of delivery, Conversation Techniques, Dialogue, Good manners and Etiquettes.

Resume Writing

What is Resume? Types of Resume? Chronological, Functional and Mixed Resume**,** Steps in preparation of Resume.

Unit II: Group Discussion, Interview Skills & Team Building 18 hours

Group Discussion (GD)

Group Discussion Basics, GD Topics for Practice, Points for GD Topics, Case-Based and Article based Group Discussions, Points for Case Studies, and Notes on Current Issues for GD.

Interview Skills

Common interview questions, Attitude, Body Language, The mock interviews, Phone interviews, Behavioral interviews.

Team Building

Team Vs Group – synergy, Stages of Team Formation, Dabbawala-Case Study-PPT, Broken Square-Exercise, Group dynamics, Win as much as you win- Exercise, Leadership – Styles, Work ethics.

Unit III: Personality Development, Attitude & Motivation 18 hours
Personality Development

Self awareness, Assertiveness, Goal setting, Problem-solving, Conflict and Stress Management, Decision-making skills, Positive and Creative thinking, Lateral thinking, Time management.

Attitude

Concept, Significance, Factors affecting attitudes, Positive attitude, Advantages, Negative attitude, Disadvantages, Ways to develop positive attitude, Difference between Personalities having positive and negative attitude.

Motivation

Concept of motivation, Significance, Internal and external motives, Importance of self-motivation, Factors leading to demotivation.

Unit IV: Numerical Ability **8 hours**

- Average, Percentage
- Profit and Loss**,** Simple Interest, Compound Interest
- Time and Work, Pipes and Cisterns
- Time and Distance**,** Problems on Trains**,** Boats and Streams
- Calendar**,** Ratios and Proportions.

Unit- V: Test of Reasoning **8 hours**

Verbal Reasoning

- Series Completion, Analogy
- Data Sufficiency, Assertion and Reasoning
- Logical Deduction

Non-Verbal Reasoning

- Series
- Classification

References

* Aggarwal, R.S. *Quantitative Aptitude*, S.Chand & Sons.
* Aggarwal, R.S. (2010). *A Modern Approach to Verbal and Non Verbal Reasoning*. S.Chand & Co., Revised Edition.
* Alex, K. (2009). *Soft Skills*, New Delhi, S. Chand & Company Ltd.

* Covey, Stephen. (2004). *7 Habits of Highly effective people,* Free Press.

* Egan, Gerard. (1994). *The Skilled Helper* (5th Ed), Pacific Grove, Brooks/Cole.

* Khera, Shiv (2003). *You Can Win,* Macmillan Books, Revised Edition.

* Murphy, Raymond. (1998). *Essential English Grammar*, 2nd ed., Cambridge University Press.

* Prasad, L.M. (2000). *Organizational Behaviour*, S.Chand & Sons.

* Ravindran, G., Elango, S.P.B., Arockiam, L. (2009). *Success through Soft skills*, IFCOT Publications.

* Sankaran, K. & Kumar, M. *Group Discussion and Public Speaking*. M.I. Pub, Agra, 5th ed., Adams Media.

* Schuller, Robert. (2010). *Positive Attitudes*, Jaico Books.

* Thamburaj, Francis (2009). *Communication Soft skills*, Grace Publications.

* Trishna's (2006). *How to do well in GDs & Interviews*, Trishna Knowledge Systems.

** Yate, Martin. (2005). H*iring the Best: A Manager's Guide to Effective Interviewing and Recruiting**

SEM: III *Hours/Week : 5*
12PCS3110 *Credits : 5*

PHP WITH MYSQL

AIM

✶ To understand the fundamental concepts of the Apache, MySQL, PHP and the vital role of open source in programming paradigm.

UNIT I **11 Hrs**

INTRODUCTION: Brief Introduction to PHP, Apache, MySQL, and Open Source – Pieces of AMP Module – Configuring Installation – Apache, PHP, and MySQL.

UNIT II **14 Hrs**

CREATING PHP PAGES: PHP Structure and Syntax – Creating First Program – HTML to Spice Pages - Constants and Variables – Passing Variables – Using If/Else Arguments – Using Includes and Functions for Efficient Code – Arrays - Alternative Syntax for PHP.

UNIT III **14 Hrs**

USING PHP WITH MYSQL: MySQL Structure and Syntax – Connecting to MySQL Server – Querying the Database. **USING TABLES TO DISPLAY DATA**: Creating a Table – Populating Table – Creating Master/Child Relationship. **FORM ELEMENTS:** First Form – Driving the User Input

UNIT IV **14 Hrs**

MANPULATING DATA AND IMAGES IN PHP – Editing Database – Working With GD Library - Allowing Users to Upload Images – Converting Image Files Types – Validating User Input – Handling and Avoiding Errors.

UNIT V **12 Hrs**

CASE STUDY: Sending Emails - User Logins, Profiles and Personalization. Content Management System - Online Stores.

BOOK FOR STUDY

Elizabeth Naramore, Jason Gerner, "Beginning PHP5, Apache, MySQL, with Web Development", Wiley Publishing, Inc., Indianapolis, Indiana, 2005.

BOOKS FOR REFERENCE

1. Jason Gerner Elizabeth Naramore, Morgan L. Owens, Matt Warden, "Professional Lamp, Linux, MySQL and PHP5 and Web Development" Wiley Publishing, 2006.
2. James Lee & Brent Ware, "Open Source Web Development with LAMP using Linux, Apache, MySQL, PERL and PHP" Pearson, 2003.

SEM: III *Hours / Week: 5*

12PCS3111 *Credits : 5*

SOFTWARE ENGINEERING

AIM

- To provide basic concepts of Software Engineering, Various models, Software Design, Software Development and Various Testing Strategies.

UNIT I **13 Hrs**

SOFTWARE ENGINEERING: Software Engineering – A Layered Technology – A Process Framework - CMMI - **PROCESS MODELS:** Prescriptive Models – The Waterfall Model – Incremental Process Model – Evolutionary Process Model - Specialized Process Model. **SYSTEM ENGINEERING:** The System Engineering Hierarchy. **REQUIREMENTS ENGINEERING:** Requirements Engineering Tasks – Initiating the Requirements Engineering Process.

UNIT II **12 Hrs**

BUILDING THE ANALYSIS MODEL: Requirements Analysis - Data Modeling Concepts – Flow Oriented Modeling. **DESIGN ENGINEERING:** Design Process – Design Concepts – Design Model. **ARCHITECTURAL DESIGN:** Software Architecture – Architectural Styles and Patterns - Architectural Design. **COMPONENT- LEVEL DESIGN:** Component – Designing Class Based Components. **UI DESIGN:** The Golden Rules - UI Analysis and Design.

UNIT III **14 Hrs**

METRICS FOR PROCESS AND PROJECTS: Metrics in the Process and Project Domains – Software Measurement – Metrics for Software Quality. **ESTIMATION FOR SOFTWARE PROJECT:** Resources – Decomposition Techniques. **PROJECT SCHEDULING:** Project Scheduling - Defining a Task Set for the Software Project.

UNIT IV **13 Hrs**

RISK MANAGEMENT: Software Risks – Risk Identification – Risk Projection. **QUALITY MANGEMENT:** Quality Concepts – Software Quality Assurance - Formal Technical Reviews - Software Reliability. **CHANGE MANAGEMENT:** Software Configuration Management – The SCM Process.

UNIT V **13 Hrs**

SOFTWARE TESTING: A Strategic Approach to Software Testing – Test, Test Case and Test Suite – Verification and Validation – Alpha, Beta and Acceptance Testing – Functional Testing – Structural Testing – Levels of Testing – Validation Testing – The Art of debugging – Testing Tools.

BOOKS FOR STUDY

1. Roger S. Pressman, "Software Engineering – A Practitioners Approach", McGraw Hill International, 6th Edition, 2005 UNITS: I, II, III & IV.
2. K.K. Aggarwal, Yogesh Singh, "Software Engineering", 3rd Edition, New Age International Publishers, 2008. UNIT: V.

BOOKS FOR REFERENCE

1. Ian Sommerville, "Software Engineering", Eighth Edition, Pearson Education, South Asia, 2009.
2. Srinivasan Desikan and Gopalasamy Ramesh, "Software Testing for Principles and Practices", Pearson Education, South Asia, 2007.

SEM: III *Hours / Week: 5*

12PCS3112 *Credits : 5*

CRYPTOGRAPHY AND NETWORK SECURITY

AIM

- The basic issues to be addressed by a network security capability are explored through Cryptography.

UNIT I **13 Hrs**

INTRODUCTION: OSI Security Architecture- Security Attacks - Security Services - Security Mechanisms **–** a Model for Network Security. **CLASSICAL ENCRYPTION TECHNIQUES:** Symmetric Cipher Model - Substitution Techniques - Transposition Techniques - Steganography.

UNIT II **13 Hrs**

BLOCK CIPHER AND DATA ENCRYPTION STANDARD: Block Cipher Principles - The Data Encryption Standard - The Strength of DES. **ADVANCED ENCRYPTION STANDARD:** The AES cipher. **INTRODUCTION TO NUMBER THEORY:** Prime numbers – Testing for Primality.

UNIT III **13 Hrs**

PUBLIC- KEY CRYPTOGRAPHY AND RSA: Principles of Public Key Cryptosystems - The RSA Algorithm. **MESSAGE AUTHENTICATION AND HASH FUNCTIONS: A**uthentication Requirements - Message Authentication Codes – Hash Functions. **DIGITAL SIGNATURE AND AUTHENTICATION PROTOCOLS:** Digital Signature, Authentication Protocols.

UNIT IV **13 Hrs**

AUTHENTICATION APPLICATIONS: X.509 Authentication Service, Public Key Infrastructure. **ELECTRONIC MAIL SECURITY:** S/MIME. **IP SECURITY:** IP Security Overview, IP Security Architecture. **WEB SECURITY:** Web Security Considerations - Secure Socket Layer and Transport Layer Security.

UNIT V **13 Hrs**

INTRUDERS: Intrusion Detection - Password Management**.** **MALICIOUS SOFTWARE:** Virus and Related Threats. **FIREWALL**S: Firewall Design Principles.

BOOK FOR STUDY

William Stallings, "Cryptography and Network Security-Principles and Practices", PHI Learning Private Limited, New Delhi, 2008.

BOOK FOR REFERENCE

Atul Kahate, "Cryptography and Network Security", Tata McGraw Hill Publications, New Delhi, 2008.

SEM: III ***Hours/Week: 4***
12PCS3113 ***Credits: 4***

LAB – PHP

1. Using Controls and Functions
2. Message Passing Mechanism between Pages
3. String Functions and Arrays.
4. Display Student Information using MySQL Table.
5. Develop a College Application Form using MySQL Table
6. Check File System Functions, Network Functions, Date and Time Functions.
7. Session
8. Cookies
9. Parsing Functions (using Tokenizing)
10. Regular Expression & Hashing Functions.

SEM: III *Hours / Week: 4*

12PCS3203A *Credits : 4*

ELECTIVE III - DATA WAREHOUSING & DATA MINING

AIM

✶ To provide an understanding of Data Warehousing and Data Mining concepts.

UNIT I **12 Hrs**

DATA MINING AND DATA PREPROCESSING: Data Mining – Motivation – Definition – Data Mining on Kind of Data – Functionalities – Classification – Data Mining Task Primitives – Major Issues in Data Mining – Data Preprocessing – Definition – Data Clearing – Integration and Transformation – Data Reduction.

UNIT II **12 Hrs**

DATA WAREHOUSING: Multidimensional Data Model – Data Warehouse Architecture – Data Warehouse Implementation – From data Warehousing to Data Mining – On Line Analytical Processing - On Line Analytical Mining.

UNIT III **12 Hrs**

FREQUENT PATTERNS, ASSOCIATIONS AND CLASSIFICATION: The Apriori Algorithm – Definition of Classification and Prediction – Classification by Decision Tree Induction - Bayesian Classification – Rule Based Classification – Classification by Back Propagation – Lazy Learners – K-Nearest Neighbor – Other Classification Methods.

UNIT IV **12 Hrs**

CLUSTER ANALYSIS: Definition – Types of data in Cluster Analysis – Categorization of major Clustering Techniques – Partitioning Methods – Hierarchical Clustering – BIRCH - ROCK – Grid Based Methods – Model Based Clustering Methods – Outlier Analysis.

UNIT V **12 Hrs**

SPATIAL, MULTIMEDIA, TEXT AND WEB DATA: Spatial Data Mining – Multimedia Data Mining – Text Mining – Mining the World Wide Web – Data Mining Applications – Trends in Data Mining.

BOOK FOR STUDY

Jiawei Han and Micheline Kamber, "Data Mining Concepts and Techniques", 2nd Ed., Morgan Kaufmann Publishers, 2006.

BOOK FOR REFERENCE

Margret H. Dunham, "Data Mining: Introductory and Advanced Topics", Pearson Education, 2003.

SEM: III *Hours / Week: 4*

12PCS3203B *Credits : 4*

ELECTIVE III - ARTIFICIAL NEURAL NETWORKS

AIM

✶ To introduce some of the fundamental techniques and principles of neural network systems.

UNIT I **12 Hrs**

INTRODUCTION : Definition – Fundamental Concepts – Applications – Advantages and Disadvantages – Classifications – Biological Neural Network – Artificial Neural Structure – Activation Functions –Adding Bias – Perception – MLP

UNIT II **12 Hrs**

FEEDFORWARD ANNs: Feed Forward Neural Network Structure-Delta Rule-Architecture and Training-Radial Basis Function-Time Delay NN.

UNIT III **12 Hrs**

ATTRACTOR ANNs : Association Learning – Attractor NN – Linear Associative Memory – Hopfield Network – Content Addressable Memory – Simulated Annealing – Boltzmann Machine – Bidirectional Associative Memory.

UNIT IV **12 Hrs**

UNSUPERVISED ANNs : Clustering Procedures – C-Means Algorithm – Learning Vector Quantization – MAXNET – Self – Organization Feature Maps – Adaptive Resonance Architectures.

UNIT V **12 Hrs**

ANN SIMULATION IN MATLAB: Creating a Custom Neural Network - Initialization - Setting Weights and Bias - Using Different Transfer Functions - Using Training Parameters - Simulating and Plotting Network - Designing Self Organizing Maps (Unsupervised).

BOOK FOR STUDY

Robert J.Schalkoff, "Artificial Neural Network", McGraw-Hill, New Delhi,1997.

BOOKS FOR REFERENCE

1. Haykin Simon, "Nerual Networks: A Comprehensive Foundation", 2nd Ed., Addition Wesley, Singapore, 2001.
2. Freeman A. James and Skapura M. David, "Neural Networks: Algorithms, Applications and Programming Techniques", Addition-Wesley Longman, California, 2002.

SEM: III *Hours/Week: 4*
12PCS3402A *Credits : 4*

IDC II – FLASH

AIM

✶ To understand the Basic Concepts of Flash and To provide hands on experience on the tools in Flash.

UNIT I **10 Hrs**

MASTERING THE FLASH ENVIRONMENT : Interface Fundamentals : Getting Started – Managing Windows and Panels – The Tools Panel – The Document Window – The Timeline Window. **DRAWING IN FLASH:** Using Geometric Shape Tools – Using Drawing Tools – Creating Precise Lines with the Pen Tool – Using Fill and Stroke Controls – Optimizing Drawings – Putting Selection Tools to Work – Designing and Aligning Elements.

UNIT II **10 Hrs**

SYMBOLS, INSTANCES AND THE LIBRARY: Understanding the Document Library – Defining Content Types – Editing Symbols – Modifying Instance Properties – Building Nested Symbol Structures – 9-Slice Scaling for Movie Clip Backgrounds. **Applying Color :** Introducing Color Basics – Working in the Color Swatches Panel – Using the Color Mixer Panel – Working with Droppers, Paint Buckets and Ink Bottles.

UNIT III **10 Hrs**

WORKING WITH TEXT: Text Field Types in Flash – The Text Tool and the Property Inspector – Modifying Text. **MODIFYING GRAPHICS:** Sampling and Switching Fills and Strokes – Transforming Gradients and Bitmaps Fills – Gradient Transform Used for Lighting Effects – Applying Modify Shape Menu Commands – Free Transform Commands and Options – Modifying Item Types – Working with Drawing Objects and Combine Object Commands – Working with Component Shapes – Editing with Find and Replace.

UNIT IV **10 Hrs**

CREATING ANIMATION AND EFFECTS: Timeline Animation **–** Basic Methods of Flash Animation – Frame by Frame Animation – Modifying Multiframe Sequences using Tween's for Animation – Integrating Multiple Animation Sequences – Organizing Symbol Instances on the Main Timeline – Reusing and Modifying Symbol Instances. **APPLYING FILTERS AND EFFECTS:** Applying Filters in Flash – Controlling Color – Layering – Graphics with Blend mode – Using Timeline Effect for Graphics and Animation.

UNIT – V **10 Hrs**

APPLYING LAYER TYPES : Guide Layers – Motion Guides – Mask Layers – Motion Guides and Movie Clip Masks – Using Distribute to Layers. **ADDING SOUND:** Importing Sounds into Flash – Assigning Sounds to a Button – Adding Sounds to the Timeline.

BOOK FOR STUDY

Robert Reinhardt, Snow Dowd, "Macromedia Flash 8 Bible", Kanak Enterprises, India, 2006.

BOOK FOR REFERENCE

Ellen Finkelstein & Gurdy Leete, "Macromedia Flash 8 For Dummies", Wiley Publishing Inc. 2006.

SEM: III *Hours/Week: 4*
12PCS3402B *Credits : 4*

IDC II – WEB DESIGN

AIM

✶ To understand the basis of Internet, HTML and JAVA SCRIPT.

UNIT I **12 Hrs**

INTERNET CONCEPT: Introduction to the Internet – History – Application – Protocols – Host Machines and Host Names – Internet Architecture and Packet Switching – Client/Server Model – Domains and Addresses – Domain Name System – IP Addresses. **EMAIL**: Anatomy of an Email Message – Viewing – Sending – Replying Email Messages.

UNIT II **12 Hrs**

HTML: Tags - Comment – HTML Documents – Anchor Tag – Hyper Links - Head and Body Section **-** Title – Colorful Webpages – Aligning the Heading – Images and Pictures – Unordered List – Ordered List - Nested List.

UNIT III **12 Hrs**

TABLES: Table Creation in HTML – Cells Spanning Multiple Rows/Columns – Nested Tables. **FRAMES:** Frame Definition – Nested Framesets – Forms. **STYLE SHEETS:** Inline Styles – External Style Sheets – Multiple Styles.

UNIT IV **12 Hrs**

JAVASCRIPT: Objects – Methods – Events and Program Flow – Running Script Using Names. **OBJECT AND METHODS:** Built in Objects – Operators and Variables - Keyword - Object Interaction. **INTERACTIVE WEBPAGES:** Conditional Statements for Decision Making – Functions in JavaScript.

UNIT V **12 Hrs**

DYNAMIC WEBPAGES: Changing Pages based on Date and Time – Arrays – Changing the Background Color through Random Numbers - Using the Images and Area - Field level Validation.

BOOKS FOR STUDY

1. Wendy G. Lehnert, "Internet 101 – A Beginner's Guide to The Internet and The World Wide Web", Addition Wesley, 1999. UNIT I
2. C. Xavier, "World Wide Web Design with HTML", Tata McGraw Hill Ltd., New Delhi, 2000. UNITS II & III.
3. Lee Purcell, Mary Jane Mara, "The ABC's of JavaScript ", BPB Pub., New Delhi, 1997. UNITS IV & V.

BOOK FOR REFERRENCE

Steven Holzer "HTML Black Book" Paraglyph Press, USA 2009.

INTER DEPARTMENTAL COURSE – IDC

BIOCHEMISTRY

12PSK2401	SOFT SKILLS
12PBI3402	FIRST AID MANAGEMENT

BIOTECHNOLOGY

12PSK2401	SOFT SKILLS
12PBT3402	APPLIED BIOTECHNOLOGY

BOTANY

12PSK2401	SOFT SKILLS
12PBO3402	HORTICULTURE & LANDSCAPING

CHEMISTRY

12PSK2401	SOFT SKILLS
12PCH3402	HEALTH CHEMISTRY

COMMERCE

12PSK2401	SOFT SKILLS
12PCO3402	FINANCIAL ACCOUNTING FOR MANAGERS

COMMERCE (CA)

12PSK2401	SOFT SKILLS
12PCC3402	CAREER PLANNING AND MANAGEMENT

COMPUTER APPLICATIONS

12PSK2401	SOFT SKILLS
12PCA3402	COMPUTER APPLICATIONS FOR SOCIAL SCIENCES
12PCA3403	FUNDAMENTALS OF PROGRAMMING

COMPUTER SCIENCE

12PSK2401	SOFT SKILLS
12PCS3402A	FLASH
12PCS3402B	WEB DESIGN

ECONOMICS

12PSK2401 SOFT SKILLS

12PEC3402 INDIAN ECONOMY

ELECTRONICS

12PSK2401 SOFT SKILLS

12PEL3402 COMPUTER HARDWARE

ENGLISH

12PSK2401 SOFT SKILLS

12PEN3402 ENGLISH FOR MEDIA STUDIES

HISTORY

12PSK2401 SOFT SKILLS

12PHI3402 INDIAN CONSTITUTION

HUMAN RESOURCE MANAGEMENT

12PSK2401 SOFT SKILLS

12PHR3402 FUNDAMENTALS OF HRM

INFORMATION TECHNOLOGY

12PSK2401 SOFT SKILLS

12PIT3402A FLASH

12PIT3402B WEB DESIGN

MATHEMATICS

12PSK2401 SOFT SKILLS

12PMA3402 OPERATIONS RESEARCH

PHYSICS

12PSK2401 SOFT SKILLS

12PPH3402 MODERN PHOTOGRAPHY

TAMIL

12PSK2401 நுண்வகைமைத்திறன்கள்

12PTA3402 அரசுப்பணித்தேர்வுத் தமிழ் - I