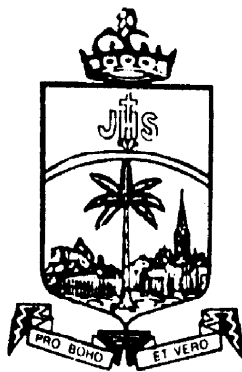


# **M.Sc. INFORMATION TECHNOLOGY SYLLABUS : 2012**

## **CHOICE BASED CREDIT SYSTEM (CBCS)**



**St. JOSEPH'S COLLEGE (Autonomous)**

*Re-accredited with 'A' Grade (3<sup>rd</sup> 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 (3<sup>rd</sup> 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 (TANSICHE) 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	3	4	3 x 4	12
	1 - Soft Skill Course (Common) (IDC-1)				
	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 Practical, 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 IDCs must be taken by students which are offered in Semester II & III. In

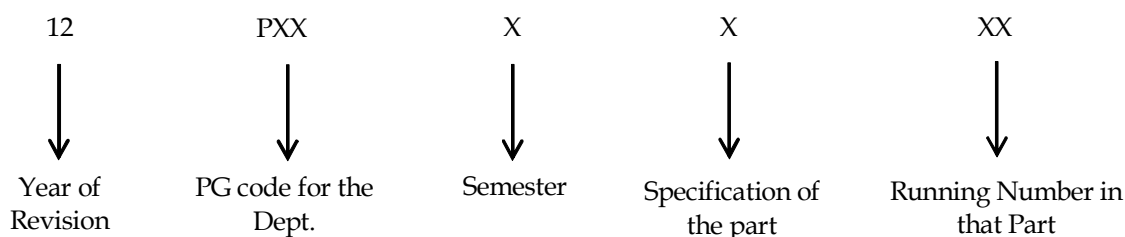
semester II, a common IDC, Soft Skills is to be offered by JASS (Joseph Academy of Soft Skills).

**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:

$$OPM = \frac{\sum_i C_i M_i}{\sum_i C_i} \text{ where } C_i \text{ is the credit earned for that course in any}$$

semester and  $M_i$  is the marks obtained in that course.

The Scheme of Over-all Results is as follows:

Class	PG	
	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. Information Technology - Course Pattern

SEM	CODE	SUBJECT	HR	CR
I	12PIT1101	C++ AND DATA STRUCTURES	5	5
	12PIT1102	ADVANCED DATABASE SYSTEMS	5	5
	12PIT1103	OPERATING SYSTEMS	5	5
	12PIT1104	LAB: C++ AND DATA STRUCTURES	6	6
	12PIT1105	LAB: RDBMS & D2K	5	5
	12PIT1201A	ELECTIVE I: UNIFIED MODELING TECHNIQUES (OR)	4	4
	12PIT1201B	ELECTIVE I: MIS	(4)	(4)
		<b>Total For Semester I</b>		<b>30</b>
II	12PIT2106	JAVA PROGRAMMING	5	5
	12PIT2107	WEB DEVELOPMENT WITH ASP.NET	5	5
	12PIT2108	LAB: JAVA	6	6
	12PIT2109	LAB: ASP.NET	6	6
	12PIT2202A	ELECTIVE II: GRAPHICS AND MULTIMEDIA (OR)	4	4
	12PIT2202B	ELECTIVE II: ARTIFICIAL INTELLIGENCE	(4)	(4)
	12PSK2401	IDC I: SOFT SKILLS	4	4
		<b>Total For Semester II</b>		<b>30</b>
III	12PIT3110	PHP WITH MYSQL	5	5
	12PIT3111	SOFTWARE ENGINEERING	5	5
	12PIT3112	COMMUNICATION NETWORKS	5	5
	12PIT3113	LAB: PHP, PHOTOSHOP & FLASH	4	4
	12PIT3114	MINI PROJECT	3	3
	12PIT3203A	ELECTIVE III: DATA WAREHOUSING & DATA MINING (OR)	4	4
	12PIT3203B	ELECTIVE III: PROJECT MANAGEMENT	(4)	(4)
	12PIT3402A	IDC II: FLASH (OR)	4	4
	12PIT3402B	IDC II: WEB DESIGN	(4)	(4)
		<b>Total For Semester III</b>		<b>30</b>
IV	12PIT4501	MAJOR PROJECT		5
II-III	12PIT4601	EXTENSION SERVICE: SHEPHERD		5
		<b>TOTAL FOR ALL SEMESTERS</b>	<b>100</b>	<b>100</b>

SEM: I

12PIT1101

Hours/Week: 5

Credits : 5

## **C++ AND DATA STRUCTURES**

### AIM

- \* To develop the programming skills in C++ language and to understand the basic principles of data structures and algorithms.

### UNIT I

13 Hrs

Principles of OOP - Beginning with C++ - Token, Expressions and Control Statements - Functions.

### UNIT II

13 Hrs

Classes and Objects - Constructor and Destructors - Operator Overloading and Type Conversion- Inheritance.

### UNIT III

13 Hrs

Polymorphism - Friend Function - Virtual Function - Working with Files - Templates - Exception Handling.

### UNIT IV

13 Hrs

**DATA STRUCTURES:** Stack - Queue - Linked List - Evaluation of Expression - Tree - Binary Trees and Traversal  
**SEARCHING:** Linear - Binary - Hash

### UNIT V

13 Hrs

**SORTING:** Bubble Sort - Insertion Sort - Selection Sort - Heap Sort - Quick Sort. **ALGORITHM DESIGN TECHNIQUES:** Greedy Algorithm (Minimum Spanning Tree), Divide and Conquer (Merge Sort), Dynamic Programming (All Pairs Shortest Path) - Back Tracking (Eight Queens) - Recursion (Tower of Hanoi)

### BOOKS FOR STUDY

1. E.Balagurusamy, "Object Oriented Programming with C++", TATA McGraw Hill, 4<sup>th</sup> Edition, New Delhi, 2007, UNITS I, II & III.
2. Ellis Horowitz and Sartaj Sahni, "Fundamentals of Data Structures", Galgotia, 2005. UNIT IV



3. Nicklaus Wirth, "Algorithms + Data Structure = Programs", PHI, New Delhi, 2002. UNIT V

#### **BOOKS FOR REFERENCE**

1. Robert Lafore, "Object - Oriented Programming in Microsoft C++", Golgotia Publications, New Delhi, 2003.
2. Aho, Hopcroft, Ullman, "Design and Analysis of Computer Algorithms", Pearson Education, New Delhi, 4<sup>th</sup> Edition, 2009.

SEM: I

Hours/Week: 5

12PIT1102

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- Database - 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**

**14 Hrs**

**PL/SQL:** Basic structure - PL/SQL Data Types - Using Variables - Controlling Program Flow -Cursors - Exception Handling - Procedures - Functions - Packages -Types of Triggers - System Triggers - Creating Triggers. **TRANSACTION PROCESSING AND CONCURRENCY CONTROL:** Transaction Concepts - Concurrency Control - Locking Methods - Timestamp Methods - Optimistic Methods.

### **UNIT IV**

**13 Hrs**

**DATABASE RECOVERY SYSTEM:** Database Recovery Concepts - Types of Database Failures - Types of Database Recovery

- Recovery Techniques. **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

12 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.

## BOOKS FOR STUDY

1. Shio Kumar Singh, "Database Systems Concepts, Design and Application" 2<sup>nd</sup> Edition, Dorling Kindersley India Pvt. Ltd. - 2011.
2. Scott Urman, Ron Hardman, Michael Mclaughlin, "Oracle Database 10g PL/SQL Programming", Tata McGraw Hill Edition Ltd, New Delhi-2004 UNIT -III (PL/SQL).

## 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

12PIT1103

Hours/Week: 5

Credits : 5

## **OPERATING SYSTEMS**

### **AIM**

- \* To provide the basic concepts of an Operating System and explore Windows Operating System using WIN32 API with MFC and the rudiments of UNIX Operating System.

### **UNIT I**

**13 Hrs**

**INTRODUCTION:** Operating System – Mainframe Systems – Multiprocessor Systems - Distributed Systems – Real Time Systems – Hand Held Systems. **OPERATING SYSTEM STRUCTURES:** System components - System calls - Virtual Machines. **PROCESS:** Process Concept - Operation on Processes. **CPU SCHEDULING:** Basic concepts -Scheduling Algorithms - Real Time Scheduling.

### **UNIT II**

**13 Hrs**

**PROCESS SYNCHRONIZATION:** Background - Critical Selection Problem-Semaphores. **DEADLOCKS:** Methods for Handling Deadlocks - Deadlock Avoidance -Recovery from Deadlock. **MEMORY MANAGEMENT:** Background -Swapping-Paging - Segmentation with Paging. **VIRTUAL MEMORY:** Demand Paging - Page Replacement - Allocation of Frames - Thrashing.

### **UNIT III**

**13 Hrs**

**FILE-SYSTEM INTERFACE:** File Concept - Access Methods - Directory Structure. **FILE SYSTEM IMPLEMENTATION:** File-System Structure - Directory Implementation - Allocation Methods - Efficiency and Performance - Recovery. **MASS-STORAGE STRUCTURE:** Disk Structure - Disk Scheduling – Swap-Space Management.

### **UNIT IV**

**13 Hrs**

**SECURITY:** The Security Problem – User Authentication – Program Threats – System Threats – Securing Systems and Facilities. **FUNDAMENTALS OF WINDOWS AND MFC:** Windows

Programming Model - Introduction to MFC – MFC Application -  
Drawing in a window: Windows GDI – Drawing with GDI.

**UNIT V**

**13 Hrs**

**UNIX - INTRODUCTION TO THE KERNEL:** Architecture of the UNIX OS – Introduction to System Concepts – Kernel Data Structure. **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. Abraham Silberschatz, Peter Bear Galvin and Greg Gagne, “Operating System Concepts”, 6<sup>th</sup> edition, John Wiley & Sons Inc, 2007 UNITS I, II & III.
2. Jeff Proise, “Programming Windows with MFC”, 2<sup>nd</sup> edition, Microsoft Press, 2003. UNIT IV
3. Maurice J.Bach, “The Design of The Unix OS”, PHI Learning Private Ltd, New Delhi, 2009. UNIT V

**BOOKS FOR REFERENCE**

1. Harvey M. Deitel, “An Introduction to Operating System”, Addison Wesley, New York, 1999.
2. Shirly Wodtke, “Learn MFC C++ Classes”, BPB Publications, New Delhi, 1997.
3. Graham Glass, King Ables, “Unix For Programmers and Users”, 3<sup>rd</sup> Edition, Pearson Education India, 2003.

SEM: I

12PIT1104

Hours/Week: 6

Credits : 6

## **LAB - C++ AND DATA STRUCTURES**

### **C++**

1. Classes and Objects
2. Constructors and Destructors
3. Operator Overloading
4. Inheritance
5. Polymorphism
6. File I/O Operations

### **DATA STRUCTURES**

7. Stack Operation
8. Queue Operation
9. Linked List
10. Tree Traversal
11. Sorting
12. Searching

**SEM: I**  
**12PIT1105**

**Hours/week: 5**  
**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

12PIT1201A

Credits : 4

## **ELECTIVE I: UNIFIED MODELING TECHNIQUES**

### AIM

\* To impart knowledge about UML concepts.

### UNIT I

12 Hrs

**INTRODUCTION:** Importance of Modeling - Principles of Modeling - Object Oriented Modeling - Overview of UML - Conceptual model of the UML - Architecture - Software Development Life Cycle. **BASIC STRUCTURAL MODELING:** Classes - Relationships - Common Mechanisms - Diagrams - Class diagrams.

### UNIT II

12 Hrs

**ADVANCED STRUCTURAL MODELING:** Advanced Classes - Advanced Relationships - Interfaces - Types and Roles - Packages - Instances - Object Diagrams

### UNIT III

12 Hrs

**BASIC BEHAVIORAL MODELING:** Interactions - Use Cases - Use Case Diagrams - Interaction Diagrams - Activity Diagrams.

### UNIT IV

12 Hrs

**ADVANCED BEHAVIORAL MODELING:** State Chart Diagrams. **ARCHITECTURAL MODELLING:** Patterns and Frameworks - Artifact Diagrams- Component Diagrams- Deployment Diagrams. **Rational Unified Process.**

### UNIT V

12 Hrs

**THE UNIFIED PROCESS:** The four P's (People, Project, Product and Process in Software Development) - Use Case Driven Process - Architecture - Centric Process - Iterative and Incremental Process.



## **BOOKS FOR STUDY**

1. Grady Booch, James Rumbaugh, Ivar Jacobson, "The Unified Modeling Language User Guide", Second Edition, Pearson Education, 2009. UNITS I, II, III & IV
2. Grady Booch, James Rumbaugh, Ivar Jacobson, "The Unified Software Development Process", Pearson Education, 2009. UNIT V

## **BOOKS FOR REFERENCE**

1. Grady Booch, James Rumbaugh, Ivar Jacobson, "The Unified Modeling Language Reference Manual", Second Edition, Pearson Education, 2009.
2. Craig Larman, "Applying UML and Patterns: An introduction to Object - Oriented Analysis and Design and Unified Process", Pearson Education, 2002.

SEM: I

12PIT1201B

Hours/Week : 4

Credits : 4

## **ELECTIVE I - MANAGEMENT INFORMATION SYSTEMS**

### **AIM**

- \* To give an understanding about Information Systems, how it relates to managerial end-users 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 Resources, 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 of 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", 7<sup>th</sup> 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  
12PIT2106

Hours/Week : 5  
Credits : 5

## **JAVA PROGRAMMING**

### **AIM**

\* To develop the programming skills in JAVA language.

### **UNIT I** **13 Hrs**

**OVERVIEW OF JAVA:** Object-Oriented Programming- Creation of Java - Bytecode - 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:** 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 APPLLET CLASS:** 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:** 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, 5<sup>th</sup> Edition, New Delhi, 2002.
2. Narayana Rao Surapaneni Dhanajay Katre, "Java & .Net", 1<sup>st</sup> 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: II

Hours / Week: 5

12PIT2107

Credits: 5

## **WEB DEVELOPMENT WITH ASP.NET**

### **AIM**

- \* To provide the 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:** Web Service 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**

**12PIT2108**

**Hours/Week: 6**

**Credits: 6**

**LAB – JAVA**

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 II**  
**12PIT2109**

**Hours / Week: 6**  
**Credits: 6**

**LAB – ASP.NET**

1. Form Design using Various Web Controls
2. Ad Rotator and Calendar Control, 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. 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

12PIT2202A

Hours/Week:4

Credits: 4

## **ELECTIVE II- GRAPHICS AND MULTIMEDIA**

### **AIM**

- \* To understand the fundamental concepts of Graphics, Multimedia, Flash, and Photoshop.

### **UNIT I**

**12 Hrs**

#### **GRAPHICS DEVICES, LINE AND CIRCLE DRAWING**

**ALGORITHMS:** Overview of Graphics Systems - Display Devices - Hard Copy Devices - Interactive Input devices - Display Processors, Graphics software - Line drawing - Various Algorithms and Comparisons - Circle Drawing Algorithms.

### **UNIT II**

**12 Hrs**

#### **FILLING TRANSFORMATIONS AND SEGMENTS:**

Attributes - Area Filling Algorithms - Scan Conversion Algorithms - Transformations - Two Dimensional - Basic Composite and Other Transformations - Matrix Representations - Windowing and Clipping - View Port Transformation - Segments - Introduction to 3D Graphics.

### **UNIT III**

**12 Hrs**

**MULTIMEDIA:** Uses of Multimedia - Compression Technologies for Multimedia - Text - Digital Images - Computer Graphics and Image Editing - Digital Audio - Video and Animation - Designing Multimedia.

### **UNIT IV**

**12 Hrs**

**FLASH:** Interface Fundamentals - Drawing in Flash - Applying Color - Working with Text - Modifying Graphics - Animation Strategies - Timeline Animation - Applying Filters and Effects - Applying Layer Types - Adding Sound - Displaying Video - Publishing Flash Movies.

**UNIT V**

**12 Hrs**

**PHOTOSHOP:** Photoshop Inside Out – Image Management  
– Painting and Retouching – Filling and Stroking – Shapes and Styles  
– Fully Editable Text – Mapping and Adjusting Colors – Animating  
and Working with Video – Printing and Publishing with Photoshop.

**BOOKS FOR STUDY**

1. Donald Hearn, M. Pauline Baker, “Computer Graphics”, 2nd Edition, Pearson Education, 2008. UNITS I & II.
2. Ashok Banerji, Ananda Mohan Glosch, “MULTIMEDIA TECHNOLOGIES”, Tata McGraw-Hill Publishing Company Limited, New Delhi. UNIT III
3. Robert Reinhardt and Snow Dowd, “MACROMEDIA FLASH 8 BIBLE”, Wiley Publishing Inc, New Delhi, 2006 UNIT IV
4. Laurie Ulrich Fuller, Robert C. Fuller, “PHOTOSHOP CS3 BIBLE”, Wiley Publishing Inc. UNIT V.

SEM: II

Hours/Week: 4

12PIT2202B

Credits : 4

## **ELECTIVE II: ARTIFICIAL INTELLIGENCE**

### AIM

To impart the basic concepts of Artificial Intelligence and its applications.

### UNIT I

12 Hrs

**INTRODUCTION:** AI Problems - The Underlying Assumption - AI Technique - The Level of the Model - **PROBLEMS, PROBLEM SPACES AND SEARCH :** Defining the Problem as a State Space Search - Production System - Production System Characteristics - Issues in the Design of Search Programs.

### UNIT II

12 Hrs

**HEURISTIC SEARCH TECHNIQUES :** Generate-and-Test - Hill Climbing - Best-First Search - Problem Reduction - Constraint Satisfaction - Means-ends Analysis - **KNOWLEDGE REPRESENTATION ISSUES :** Representations and Mappings - Issues in Knowledge Representation - The Frame Problem.

### UNIT III

14 Hrs

**USING PREDICATE LOGIC:** Representing Simple Facts in Logic - Representing Instance and ISA Relationships - Computable Functions and Predicates - Resolution - Natural Deductions. **REPRESENTING KNOWLEDGE USING RULES:** Procedural Versus Declarative Knowledge - Logic Programming - Forward Versus Backward Reasoning - Matching - Control Knowledge - **SYMBOLIC REASONING UNDER UNCERTAINTY:** Introduction to Nonmonotonic Reasoning - Logics for Nonmonotonic Reasoning - Augmenting a Problem Solver - Implementation: Depth first search and Breadth first Search.

### UNIT IV

10 Hrs

**EXPERT SYSTEMS:** Representing and Using Domain Knowledge - Expert System Shells - Knowledge Acquisition -

**PERCEPTION AND ACTION:** Real-time Search - Perception - Action - Robot Architectures.

**UNIT V**

**12 Hrs**

**FUZZY LOGIC SYSTEMS:** Introduction - Crisp Sets - Fuzzy sets - Fuzzy Sets - Some Fuzzy Terminology - Fuzzy Logic Control - Sugeno Style of Fuzzy Inference Processing - Fuzzy Hedges - a Cut Threshold - Neuro Fuzzy Systems - **GENETIC ALGORITHMS:** Introduction - Significance of the Genetic Operators - Termination Parameters - Niching and Speciation - Evolving Neural Networks - Theoretical Grounding - Ant Algorithms.

**BOOK FOR STUDY**

Elaine Rich, Kevin Knight and Shivashankar B Nair, "ARTIFICIAL INTELLIGENCE", 3<sup>rd</sup> Edition, Tata McGraw - Hill Publishing Company Limited, New Delhi, 2005.

**BOOK FOR REFERENCE**

Nils J. Nilsson, "Artificial Intelligence: A New Synthesis", Morgan Kaufmann Publishers, 2003.

SEM-II

12PSK2401

Hours/Week - 4

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* (5<sup>th</sup> Ed), Pacific Grove, Brooks/Cole.
- \* Khera, Shiv (2003). *You Can Win*. Macmillan Books, Revised Edition.
- \* Murphy, Raymond. (1998). *Essential English Grammar*, 2<sup>nd</sup> 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, 5<sup>th</sup> 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). *Hiring the Best: A Manager's Guide to Effective Interviewing and Recruiting*\*





SEM III  
12PIT3110

Hours/Week: 5  
Credits : 5

## PHP WITH MYSQL

### AIM

- \* To understand the fundamental concepts of the Apache, MySQL and 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 WIith GD Library - Allowing Users to Upload Images - Converting Image Files Types - Validating User Input - Handling and Avoiding Errors.

### UNIT V 12 Hrs

Sending Emails - User Logins, Profiles and Personalization.  
**CASE STUDY:** 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.

## **BOOK 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  
12PIT3111

Hours / Week: 5  
Credits : 5

## **SOFTWARE ENGINEERING**

### **AIM**

- \* To provide the 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, 6<sup>th</sup> Edition, 2005. UNITS: I, II, III & IV.
2. K.K. Aggarwal, Yogesh Singh, “Software Engineering”, 3<sup>rd</sup> 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

12PIT3112

Credits : 5

## COMMUNICATION NETWORKS

### AIM

- \* To provide the concept of communications networks with network security.

### UNIT I

13 Hrs

**INTRODUCTION:** Data Communications - Networks - The Internet - Protocols and Standards - Network Models - Layered Tasks - The OSI Model - Layers in the OSI Model - TCP/IP Protocol Suite - Addressing - **PHYSICAL LAYER & MEDIA:** Analog & Digital - Analog to Digital Conversion - Transmission Modes - Digital to Analog Conversion - Multiplexing - Transmission Media - Guided media - Unguided media - Switching - Circuit switched Networks - Datagram Networks - Virtual Circuit Networks.

### UNIT II

13 Hrs

**DATA LINK LAYER:** Error Detection and Correction - Introduction - Block Coding - Cyclic codes - Checksum - Data Link Control - Framing - Flow and error control - Protocols - Noiseless Channels - Noisy Channels - Point to Point Protocol - Channelization - IEEE 802.11 - Bluetooth - Cellular Telephony - Satellite Networks.

### UNIT III

13 Hrs

**NETWORK LAYER:** IPV4 Addresses - IPV6 Addresses - Internetworking - IPV4 - IPV6 - Transition from IPv4 to IPv6 - Address mapping - ICMP - IGMP - Delivery - Forwarding - Unicast Routing Protocols - Multicast Routing Protocols

### UNIT IV

13 Hrs

**TRANSPORT LAYER:** Process to Process Delivery - UDP - TCP - SCTP - Data Traffic - Congestion - Congestion Control - Quality of Service - **APPLICATION LAYER:** Name Space - Domain Name Space - Remote Logging - Email & File Transfer.

**UNIT V**

**13 Hrs**

**SECURITY:** Cryptography - Introduction - Symmetric Key Cryptography - Asymmetric Key Cryptography - **NETWORKING SECURITY:** Security Services - Message Confidentiality - Message Integrity - Message Authentication - Digital Signature - Entity Authentication - Key Management - **SECURITY IN THE INTERNET:** IP Security - SSL/TLS - PGP - Firewalls.

**BOOK FOR STUDY**

Behrouz A. Forouzan", Data Communications and Networking ", 4<sup>th</sup> edition, Tata McGraw Hill, New York, 2009.

**BOOK FOR REFERENCE**

Andrew S. Tanenbaum, "Computer Networks", 5<sup>th</sup> Edition, Pearson Education, New Delhi, 2011.

SEM III  
12PIT3113

Hours / Week: 4  
Credits: 4

## **LAB – PHP, PHOTOSHOP & FLASH**

### **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

### **PHOTOSHOP**

9. Develop an image using selection and allied operations
10. Develop an image using effects and apply filters

### **FLASH**

11. Develop an image with the help of basic shapes.
12. Animate an image using motion, shape tweening, and actions.





SEM: III

Hours/Week : 4

12PIT3203A

Credits : 4

## **ELECTIVE III - DATA WAREHOUSING & DATA MINING**

### **AIM**

- \* To provide an understanding of the 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 - Online Analytical Processing - Online 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", 2<sup>nd</sup> 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

12PIT3203B

Credits : 4

## **ELECTIVE III: PROJECT MANAGEMENT**

### **AIM**

- \* To understand the basic principles of Project Management.

### **UNIT I: Requirement & Planning**

**12 Hrs**

Introduction to Software Project Management- Software Project versus Other Types of Project -Problems - Management Control - Stake Holders - Requirement Specification- Introduction to Stepwise Project Planning-Identify Scope and Objectives - Identify Project Infrastructure- Analyze Project Characteristics-Products and Activities- Estimate Effort for Each Activity-Identify Activity Risks- Allocate Resources-Review Plan - Execute Plan - Project Evaluation- Strategic Assessment-Technical Assessment - Cost Benefit Analysis- Cash Flow Forecasting - Cost -Benefit Evaluation Techniques.

### **UNIT II: Software Models**

**12 Hrs**

Selection of an Appropriate Project Approach - Choice of Process Models - Structured Methods - Rapid Application Development - Waterfall Model-V- Model - Spiral Model - Software Prototyping Incremental Delivery-Selecting Process Model - Software Effort Estimation - Problems with Over and Under Estimates-Basis for Software Estimation - Software Effort Estimation Technique Function Point Analysis - Object Points - COCOMO- Activity Planning-Project Schedules - Sequencing and Scheduling Activities - Network Planning Models - Formulating a Network-Identifying Critical Path Shortening Project Duration.

### **UNIT III: Budget Control**

**12 Hrs**

Risk Management-Nature of Resources-Requirements- Scheduling-Critical Paths-Counting the Cost-Resource Schedule- Cost Schedule-Scheduling Sequence-Monitoring and Control- Creating the Framework-Collecting the Data-Visualizing the Progress-Cost Monitoring-Prioritizing Monitoring Change Control.

**UNIT IV: Software Contract and Quality**

**12 Hrs**

Managing Contracts-Types of Contract-Stages in Contract Placement-Terms of Contract-Contract Management-Acceptance-Managing People and Organizing Teams-Organizational Behavior Background-Selecting the Right Person for the Job-Instruction in the Best Methods-Motivation Decision Making-Leadership-Organizational Structures-Software Quality-Importance-Defining ISO 9126-Practical Measures-Product versus Process Quality Management.

**UNIT V: Case Studies**

**12 Hrs**

Small Projects - Some Problems - Content of a Project Plan - PRINCE2 - An Overview-S6079: 1996 an Overview - Euro Method - An Overview.

**BOOK FOR STUDY**

Bob Huges and Mike Cortell, "Software Project Management", Tata McGraw Hill, 2<sup>nd</sup> Edition, 2002.

SEM: III  
12PIT3402A

Hours/Week: 4  
Credits : 4

**IDC-II: FLASH**

**AIM**

- \* To understand the Basic Concepts of Flash and
- \* To provide hands on experience on Flash Tools.

**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  
12PIT3402B

Hours/Week: 4  
Credit : 4

## **IDC II – WEB DESIGN**

### **AIM**

- \* To understand the basics 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", Addison 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 REFERENCE**

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	நுண்வகைகமைத்திறன்கள்
12PTA3402	அரசுப்பணித்தேர்வுத் தமிழ் - I