SEMESTER – III

140CA0301

OPERATING SYSTEMS

Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
This course provides basic knowledge and skills in operating, managing and maintenance of various types of Operating Systems.

OBJECTIVES:

- Creating awareness on process management. CPU scheduling, memory management and file system of an Operating system.
- Impart information on implementing the system components including system call synchronization primitives.
- Understanding the design of the Linux operating system.
- Familiarize with the various inter process communication.

UNIT I INTRODUCTION

UNIT II SCHEDULING & DEADLOCK

UNIT III MEMORY MANAGEMENT

UNIT IV FILE MANAGEMENT

UNIT V CASE STUDY

TEXT BOOK:

REFERENCE BOOKS:
SOFTWARE ENGINEERING

Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
The aim of this course is to impart the systematic approach to the design, development, testing and maintenance of a software system.

OBJECTIVES:
- Provide an insight into the processes of software development.
- Understand and practice the various phases such as analysis, design, development, testing.
- Construct various UML models including use case diagrams, class diagrams, interaction diagrams, statechart diagrams and activity diagrams using the appropriate notation.
- Learn the Software testing strategies and techniques with software maintenance

UNIT I INTRODUCTION

UNIT II SOFTWARE REQUIREMENTS

UNIT III SOFTWARE DESIGN

UNIT IV UNIFIED MODELING LANGUAGE

UNIT V TESTING AND MAINTENANCE

TEXT BOOKS:

REFERENCE BOOKS:
140CA0303  JAVA PROGRAMMING

Category: Technical
Mode of Delivery: Lecture –3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
Learn the concepts of Java Programming and develop real time applications.

OBJECTIVES:

- Reuse software through a collection of predefined classes and own packages.
- Develop custom applications using Collections.
- Develop networking applications using RMI.
- Design and implement Servlet and JSP programs with database.
- Develop an application using JavaFX.

UNIT I JAVA FUNDAMENTALS & CLASSES
Java Fundamentals: Features of Java- OOPs concepts- Java virtual machine- Reflection byte code- Byte code interpretation- Data types, variable, arrays, expressions, operators, and control structures- Objects and classes. Java Classes: Abstract classes- Static classes- Inner classes- Packages - Wrapper classes- Interfaces. This is a super- Access control.

UNIT II EXCEPTION HANDLING, IO PACKAGE AND MULTITHREADING
Exception handling: Exception as objects- Exception hierarchy- Try catch finally- Throw, throws.

UNIT III JDBC & COLLECTIONS

UNIT IV- SERVLET & JSP
Servlet: Servlet Overview and Architecture, Interface Servlet and the Servlet Life Cycle, Handling HTTP get Requests, Handling HTTP post Requests, Redirecting Requests to Other Resources, Session Tracking, Cookies, Session Tracking with HttpSession.

UNIT V JAVAFX
JavaFX: Overview - Understanding the JavaFX Architecture–Hello World, JavaFX Style–Creating aForm in JavaFX – Fancy Forms with JavaFX CSS – Using FXML to Create a User Interface – Animation and Visual Effects in JavaFX.

TEXT BOOKS:
1. H. M. Deitel, P. J. Deitel, S. E. Santry, Advanced Java 2 Platform Howto program, Prentice Hall, 2007. (Unit I to Unit IV)
2. Jasper Potts, Nancy Hildebrandt, Joni Gordon, Cindy Castillo, JavaFX Getting Started with JavaFX, Release 8, Oracle, 2014. (Unit V)

REFERENCE BOOKS:
DATA STRUCTURES & ALGORITHMS

Category: Technical
Mode of Delivery: Lecture -3 Hrs/Week; Tutorial – 1 Hr/Week
Total hours: 60
Credit: 4

AIM:
Imparting knowledge on the design and applications of linear, tree and graph structures. To provide an understanding of various algorithm design and analysis techniques and to provide an in-depth knowledge in problem solving techniques and data structures.

OBJECTIVES:
- Facilitate the choice of data structures that effectively model the information in a problem
- Impart the skills to analyze the efficiency of algorithms
- Provide an understanding of appropriate structures for efficient searching and access of data.
- Provide knowledge of the systematic way of solving problems and to improve the competency in solving specific problems

UNIT I INTRODUCTION
ADT - Linked Lists (Singly, Doubly and Circular) Implementation – Array, Pointer- Stack: Definition and Examples, Representing Stacks - Queues: Queue and its Representation – Applications of Stack, Queue and list.

UNIT II BASIC DATA STRUCTURES

UNIT III SORT AND SEARCH STRUCTURES AND HEAPS

UNIT IV GRAPHS AND THEIR APPLICATIONS

UNIT V ALGORITHM DESIGN TECHNIQUES

TEXT BOOK:

REFERENCE BOOKS:
140CA0305 DATABASE MANAGEMENT SYSTEMS

Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week; Tutorial – 1 Hr/Week
Total hours: 60
Credit: 4

AIM:
Develop an understanding in the students on the role of database concepts and to design and implement real information systems.

OBJECTIVES:
- Interpret the different data models and basic concepts of Database.
- Impart knowledge on database creation, manipulation and complex SQL queries of relational databases.
- Analyze the concepts of data storage, querying and query optimization.
- Discover the implementation of the concepts of advanced and recent databases and its applications.

UNIT I INTRODUCTION TO RELATIONAL DATABASES

UNIT II SQL

UNIT III DATABASE DESIGN

UNIT IV DATA STORAGE AND QUERYING

UNIT V CASE STUDY

TEXT BOOK:

REFERENCE BOOKS:
JAVA PROGRAMMING LABORATORY

Category: Technical
Mode of Delivery: Practical – 4 Hrs/Week;
Total hours: 45
Credit: 2

AIM:
Develop the ability of the students to design and write programs for implementing real time applications using Java Programming.

LIST OF EXPERIMENTS:
1. Develop a program for the following concepts:
   - A manager thread and N worker threads
   - Manager starts workers but wants them to hold before doing real work until it says go.
   (Multithread and Exception Handling)

2. Develop a database program for Student Mark Statement (atleast five subjects) and generate the following reports:
   a. To display the overall report with total marks and CGPA.
   b. To display the subject-wise minimum and maximum marks.
   c. To display the student-wise ranking.
   (JDBC and Exception Handling)

3. To develop an application for small tables (files) with unique keys. To create a class for each of those small tables and load the data in to a java collection. This object will read the file and load the data in to another java collection. To fetch the data from this collection by the key values.

4. Create a servlet which does online shopping for books having following functions in it.
   a. Add items to the shopping cart
   b. Delete items from shopping cart
   c. Display selected items.

5. Create JSP code to accept product details and store in database table. If the product is already inserted, display the appropriate message to insert another product. The following reports have to generate.
   a. To display overall product details.
   b. To display only given product details.

6. To create a sample applications using JavaFX.
   (Fancy Design with CSS, User Interface Design with FXML and Animated Shapes)

Total : 45 Periods
AIM:
To develop programming skills of the students in the design and implementation of data structures to application oriented problem.

LIST OF EXPERIMENTS:

1. Given the following string: D*RM**CE**TM*C*2018*ODD 2016** Write a method that creates a linked stack, pushes the letters in the above string onto the stack, pops them off as indicated by the *s and discards the number. A letter in the above expression indicates a push onto the stack, an asterisk indicates a pop operation and a number indicates no stack operation. Print out the letters as they are popped and show a screenshot of your program working. You shouldn't print out the * or the numbers. (Stack & Linked List)

2. Write a Program to implement 2 overlapping queues in an array of size N. There are facing in opposite direction to each other. Give IsEmpty(i), Insert(i), Delete(i) and IsFull(i) routines for ith queue(Queue)

3. Data about exam results are stored into a singly linked list. Each list element consists of:
   - student name(50+1 character)
   - student ID (int)
   - course code (int)
   - grade (int)

   The list is not sorted. Write the function that removes students with negative grades (those with grade) from the list. The function returns the number of removed list members. Write the corresponding struct. (Singly Linked List, Sorting)

4. Doubly linked list contains data about students, sorted in a descending order (from head) according to the average grades. Write the function that reverses the order of elements in the doubly linked list. (Doubly Linked List, Traversal)

5. Write a program that prompts the user for the beginning of a word and outputs all the possible words that can complete what the user typed in alphabetical order. For example, one possible user interaction would be:

   Loading Dictionary,
   Standby... Dictionary loaded!
   Start typing a word and hit enter ('quit!' to end)
   algorithm
   Possible completions:
   algorithmic
   Perform the auto completion lookup by storing a dictionary of words. (Searching,
   File Processing)

6. Write a C program that reads in words from a file, discarding any strings that do not look like words. The words must be stored in alphabetical order in a linked list, with each node holding the word and a count of the number of occurrences of the word. The file name is supplied as a command line argument, and when the file has been read, the words and their occurrence counts are output. (Linked List, Sorting, Searching)
7. A network of cities is represented in the form of the graph whose details are provided below. The set $V$ consists of all cities and the set $E$ consists of the distances between the cities (in miles) for the respective links:
   
a. Construct an undirected graph from the details given below.
      i. $V = \{\text{Amherst, Boston, Hartford, Newhaven, Natick, Springfield}\}$
      ii. $E = \{
          1. \text{Amherst--Boston} = 90
          2. \text{Boston--Hartford} = 100
          3. \text{Amherst--Natick} = 80
          4. \text{Boston--Newhaven} = 140
          5. \text{Hartford--Newhaven} = 40
          6. \text{Newhaven--Natick} = 120
          7. \text{Newhaven--Springfield} = 70
          8. \text{Hartford--Springfield} = 30
          \}
   
b. Compute the shortest path from A to F using Dijkstra’s shortest path algorithm.
   (Graph & Traversal)

8. Suppose $G$ is a directed graph with vertices labeled 1 through 8. Adjacent vertices for each vertex are listed as follows
   
   Vertex Adjacency
   
   1 2, 4 2 3, 5
   3 2, 4, 5
   4 1, 3
   5 2, 3, 6
   6 5, 7, 8
   7 6, 8
   8 6, 7
   
   (a) Construct an Adjacency matrix from the given adjacency list.
   (b) Order the vertices as they are visited in a depth-first traversal starting at vertex
   (c) Order the vertices as they are visited in a breadth-first traversal starting at vertex
   (Graph & Traversal)

9. Write a program that generates all integers between 1 and 100, then makes a hash that uses the number itself as the key and the number squared as the value. Ask the user to input a number between 1 and 100, and return the square of that number using the hash. Return an error message if the input number isn’t an integer between 1 and 100. (Hashing)

10. Write the program for heap-sort and then illustrate how heap-sort processes the following array in-place: $A = \{33, 28, 23, 48, 32, 46, 40, 12, 21, 41, 14, 37, 38, 0, 25\}$ In particular, show the content of the array at each main iteration of the algorithm. (Heap Sort)
Category: Technical
Mode of Delivery: Practical – 4 Hrs/Week;
Total hours: 45
Credit: 2

AIM:
To impart knowledge on the implementation of the various DBMS features to the students using ORACLE, PostgreSQL and MySQL database.

LIST OF EXPERIMENTS:

Project 1: Web based Photos Sharing Portal (Functions)
Develop a web-based database application system that provides service to its clients for storing, sharing, and searching their photos. The system, similar to flickr and PhotoShelter, can be used by its clients to
1. Upload and store photos;
2. Enter and update the descriptive information (time, place, persons, caption, series, owner, copyright) for photos;
3. Specify the access privileges for your friends and/or public to share your photos; and search for photos with given words and/or other specified conditions.

Project 2: Web based Tour Planner (Exceptions)
Design a tour planner agent that offers the end users with a list of best tour plans against user provided budget and tour options. The tour options may include the places of visit, the mode of journey, hotel booking etc.,

Project 3: Census Database (Cursors)
The 2016 Census of India will start on February 7, 2016. The goal of this project is to build a database which can provide various information’s based on the census data. The parameters recorded in census can be found in this site. http://censusindia.gov.in/Metadata/Metadata.htm
The system may be interfaced with geographical maps like Google API.

Project 4: Resume consultant portal (Packages)
Design a resume consultant portal which has two different kinds of end users.
Company: The companies may place their recruitment options like job description, candidate educational profile, experience etc.
Job Seeker: The job seekers may submit their resume to the portal
The consultant finds the resumes that best match the job requirements of the different companies and sends a notification to the company with a list of suitable applicants.

Project 5: Indian Railways on Google Earth (Triggers)
The goal of this project is to integrate any of the Map Web Services like Google Earth, Wikimapia, TerraServer with the Indian Railway Train Enquiry System at www.indianrailway.gov.in. Two type of queries should be supported:
(i) Users may specify source and destination on Map Servers. The system should return a page in Indian railways displaying a list of trains between the nearest railway stations to source and destinations.
(ii) Users may specify a train number or name, and the systems tracks the route of the train on the map server with schedule of arrival and departure at different stations.

Recommended Databases: Oracle 11g, PostgreSQL 6.3, MySQL 5.5

Front End: Java 8 / Visual C# 2013
Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
The aim of the course is to introduce students to the foundations and principles of computer network with emphasis on networking technologies, architectures, standards, and protocols.

OBJECTIVES:
- Understanding Computer Network concepts and communication models.
- Understanding the Computer Network architectures and components required for data communication.
- Analyzing the function and design strategy of physical, data link, network layer and transport layer.
- Acquiring knowledge of various application Computer Network protocol standards developed for internet.

UNIT I DATA COMMUNICATIONS

UNIT II DATA LINK LAYER

UNIT III NETWORK LAYER

UNIT IV TRANSPORT LAYER

UNIT V APPLICATION LAYER

TEXT BOOK:

REFERENCE BOOKS:
Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week; Tutorial – 1 Hr/Week
Total hours: 60
Credit: 4

AIM:
The course aims in providing knowledge about the development of iOS 8 native applications for iPhone and iPad with Swift programming.

OBJECTIVES:
- Describe the software features provided by the Swift Programming Language.
- Gain skills using the Swift classes.
- Develop Swift code for iPhone, iPad and Mac OS X.

UNIT I INTRODUCTION TO SWIFT

UNIT II USER INTERFACE DESIGN
Devices and Auto Layout - More User Interfaces - Rotation and Adaptive Layout - Multiview Applications

UNIT III TAB BARS & TABLE VIEWS
Tab Bars and Pickers - Introduction to Table Views - Navigation Controllers and Table Views

UNIT IV VIEWS & CONTROLLERS
Collection View - Using Split Views and Popovers - Application Settings and User Defaults

UNIT V APP STORE SUBMISSION
Maps and Location - Map Kit - UIPickerViewController - Running on a Device - Certificates - Submitting to the App Store - Managing and Marketing Your App.

TEXT BOOKS:
2. David Mark , Jack Nutting, Kim Topley , Fredrik Olsson , Jeff LaMarche, Beginning iPhone Development with Swift Exploring the iOS SDK, 2014. (Unit II,III,IV).

REFERENCE BOOKS:
WEB APPLICATION DEVELOPMENT

Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week; Tutorial – 1 Hr/Week
Total hours: 60
Credit: 4

AIM:
The aim of this course is to introduce the concepts of web application development and the student can able to create and develop their own applications using J2EE and .NET.

OBJECTIVES:
- To acquire knowledge on the usage of recent platforms in developing web applications.
- To understand architecture of Spring and Core technologies.
- To create web applications using Hibernate.
- To create and design own applications using C#.NET with Database.
- To understand and design applications using Silverlight.

UNIT I SPRING INTRODUCTION AND CORE TECHNOLOGIES 9+3

UNIT II ORM AND WEB MVC FRAMEWORK 9+3
Object Relational Mapping (ORM) data access:Introduction–Hibernate–JDO–Oracle Top Link–iBATIS

UNIT III .NET OVERVIEW 8+3

UNIT IV C#.NET 9+3

UNIT V ASP.NET AND SILVERLIGHT 10+3

TEXT BOOKS:

REFERENCE BOOKS:
140CA0407 MOBILE PROGRAMMING LABORATORY

Category: Technical
Mode of Delivery: Practical – 4 Hrs/Week;
Total hours: 45
Credit: 2

AIM:

Creating full-featured apps that are visually appealing, highly interactive and user-friendly, giving the best opportunities to develop business apps.

LIST OF EXPERIMENTS:

1. Design an application for Managing Home Appliances with HomeKit APP.
2. Design an Universal Calculator that works on both the iPad and iPhone.
3. Create an application that presents a list of popular Flickr photo spots and let users pick favorites.
4. Design an application for storing Contacts app.
5. Design an app for Scheduling tasks with iOS Calendar.
6. Design a Passport app displaying a pin in each country visited.
7. Creating a Simple Game with a Custom Picker.
140CA0408 WEB APPLICATION DEVELOPMENT LABORATORY

Category: Technical
Mode of Delivery: Practical – 4 Hrs/Week;
Total hours: 45
Credit: 2

AIM:
To develop the ability of the students to design and write programs for implementing real time applications using Web Application Development.

LIST OF EXPERIMENTS:

1. Create a simple Spring Application.
2. Create a simple Hibernate database operation.
3. Create a simple Spring Transactional JUnit 4 test of Hibernate transaction.
4. Creating a basic webapp that will handle UTF-8 characters from form input using JSP.
5. Develop a C#.NET application for Voting System.
6. Develop an ASP.NET application for online ticket booking system.
7. Develop a Mobile application using Silver light.
ELECTIVES
SOFTWARE ARCHITECTURE

Category: Technical
Mode of Delivery: Lecture - 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
Students will understand the concepts behind various software systems architectures, how to choose the appropriate architecture and access services provided by that architecture.

OBJECTIVES:
- Understand the role of a software architecture in the development of an enterprise application system
- Examine and compare various architecture view types and styles
- Develop the ability to read and understand the models that are used to document a software architecture
- Explore various aspects of client-server architectures including web architectures.

UNIT I INTRODUCTION

UNIT II SOFTWARE ARCHITECTURAL PATTERNS
Architectural Patterns – Introduction to Styles – Simple Styles - Distributed and Networked Architectures- Architecture for network based applications – Decentralized Architectures

UNIT III DESIGNING FOR NON FUNCTIONAL PROPERTIES

UNIT IV ARCHITECTURE DESCRIPTION DOCUMENTATION AND EVALUATION
Early Architecture Description Languages – Domain and Style Specific ADLs – Extensible ADLs - Documenting Software architecture - Architecture Evaluation – ATAM

UNIT V ARCHITECTURE ADAPTATION AND CASE STUDY

L:45T:0Total:45 Periods

TEXT BOOKS:

REFERENCE BOOKS:
2. Frank Buschmann, Regine Meunier, Hans Rohnert, Michael Stal, Pattern Oriented Software Architecture, Volume 1, 1996.
Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
To enable students to understand the challenges of advanced software design and the issues associated with large-scale software architectures and patterns.

OBJECTIVES:
- Understanding the knowledge about patterns.
- Designing patterns that enable the reuse of software architectures.
- Investigate the development of good design patterns.

UNIT I BACKGROUND ON DESIGN PATTERNS
Pattern concept - Pattern taxonomy - Design structures - Design principles - The singleton classifying patterns - Design patterns - The learning process - Studying design patterns - Object oriented approaches - The java foundation classes - Java design patterns – The development challenge

UNIT II DESIGN PATTERN CATALOG

UNIT III THE JAVA FOUNDATION CLASSES
Installing and using the JFC - Ideas behind swing - The swing class hierarchy - Writing a simple JFC program - Buttons and toolbars - Menus and actions - The JList class - The JTable class - The JTree class.

UNIT IV STRUCTURAL PATTERNS

UNIT V BEHAVIORAL PATTERNS

TEXT BOOK:

REFERENCE BOOKS:
3. Dr. Erich Gamma, Richard Helm, Ralph Johnson and John Vlissides, Design Patterns: Elements of Reusable Object-Oriented Software, Pearson publications Ltd, 2004.
Category: Technical
Mode of Delivery: Lecture -3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
The aim of this course is to enlighten the comprehension on the foundations of Human Computer Interaction.

OBJECTIVES:
- Provide comprehension on the foundations of Human Computer Interaction
- Present the design technologies for individuals and persons with disabilities and design effective dialog for HCI
- Provide awareness of mobile HCI and design aspects on mobile
- Suggest guidelines for Creating the user interface with intelligent agents.

UNIT I FOUNDATIONS & DESIGN OF HCI 10

UNIT-II MULTIMEDIA UI 9

UNIT-III MOBILE HCI 9

UNIT-IV WEB INTERFACE DESIGN 8

UNIT-V INTELLIGENT AGENT 9

TEXT BOOKS:

REFERENCE BOOK:
Category: Technical  
Mode of Delivery: Lecture - 3 Hrs/Week;  
Total hours: 45  
Credit: 3  

AIM:  
The aim of this course is to introduce the concepts of cyber security and also understand the various levels of security mechanism.  

OBJECTIVES:  
- Understand the basic concepts of computer security and policies.  
- Analyze and implement the cryptography and cipher technique concepts.  
- An exposure about how to manage their authentication and key management.  
- Apply their concepts about intrusion detection, network security and system security in various applications.  
- An exposure about how to create their own applications for user security and program security.  

UNIT I COMPUTER SECURITY AND NETWORK SECURITY POLICIES  

UNIT II BASIC CRYPTOGRAPHY AND CIPHER TECHNIQUES  

UNIT III AUTHENTICATION & KEY MANAGEMENT  

UNIT IV INTRUSION DETECTION, NETWORK SECURITY & SYSTEM SECURITY  

UNIT V USER SECURITY & PROGRAM SECURITY  

TEXT BOOK:  

REFERENCE BOOKS:  
ACCOUNTING AND FINANCIAL MANAGEMENT

Category: General
Mode of Delivery: Lecture –3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
Learn about principles of financial accounting along with the preparation of final accounts.

OBJECTIVES:
- To understand the basic principles of Double entry system, preparation of final accounts and financial ratio analysis.
- To make financial decision through management accounting viz. budgets, requirements of working capital and analysis of capital structure.
- To understand the process of estimating the cost of a particular product.
- To ascertain the time value of money and make prepare for investment decision.

UNIT I FINANCIAL ACCOUNTING

UNIT II MANAGEMENT ACCOUNTING

UNIT III COST ACCOUNTING

UNIT IV INVESTMENT DECISION AND COST OF CAPITAL

UNIT V FINANCING DECISION AND WORKING CAPITAL MANAGEMENT

TEXT BOOKS:
7. Srivatsava, Mishra, Financial ManagementII, Oxford University.
DATA MINING AND DATA WAREHOUSING

Category: Technical
Mode of Delivery: Lecture – 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
The aim is to introduce the techniques and concepts of data mining and data warehousing to be implemented in real time systems.

OBJECTIVES:
- Imparting the concepts and techniques of data mining.
- Developing skills in data mining tools for solving practical problems.
- Implementation of algorithms, models and systems for technological advancements in the area of Data Mining.
- Exposure of real world experience to undergo independent study and research.

UNIT I INTRODUCTION TO DATA WAREHOUSE

UNIT II DATA MINING & DATA PREPROCESSING

UNIT III CLASSIFICATION & PREDICTION
Classification and Prediction: - Issues Regarding Classification and Prediction – Classification by Decision Tree-Bayesian Classification – Rule Based Classification – Classification by Back propagation – Support Vector Machines – Associative Classification – Lazy Learners – Other Classification Methods – Prediction – Accuracy and Error Measures – Evaluating the Accuracy of a Classifier or Predictor – Ensemble Methods – Model Section.

UNIT IV CLUSTERING

UNIT V SPATIAL DATA ANALYSIS

TEXT BOOK:

REFERENCE BOOKS:
AGILE SOFTWARE DEVELOPMENT

Category: Technical
Mode of Delivery: Lecture - 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
To gain knowledge on Agile methods for software development and attain an in-depth knowledge of applying SCRUM for product development.

OBJECTIVES:
- Overview of Agile Methods and extreme programming for software development
- Introduce the concepts SCRUM Technology
- To have an in-depth knowledge on applying SCRUM for agile-based software development including practices, individuals and team work

UNIT I AGILE METHODOLOGY
Understanding Success-Beyond deadlines-importance of Organizational Success-Agile model-classification of agile methods -Road to Mastery-Find a mentor

UNIT II EXTREME PROGRAMMING(XP)
Method overview - lifecycle - XP Team-XP concepts -practicing XP -Thinking -collaborating-Releasing-Development .Mastering Agility :XP values and principles: commonalities - About values, principles and practices .Improve the process.

UNIT III SCRUM PRACTICES AND INDIVIDUALS

UNIT IV SCRUM TEAMWORK
Team Structures - Small Team Productivity - Feature Teams - Component Teams - Guidelines for Good Team Structure - Team Responsibility - Foster Team Learning - Self Organizing Team - Influencing Evolution: Selecting Environment, Defining Performance, Manage Meaning, Energizing the System.

UNIT V SCRUM SPECIFICATION

TEXTBOOKS:

REFERENCE BOOKS:

[Signature]
Category: Technical  
Mode of Delivery: Lecture –3 Hrs/Week; 
Total hours: 45 
Credit: 3 

AIM: 
Impart the skills of introducing the techniques and concepts of Unix & Networking concepts in real time systems 

OBJECTIVES: 
- Learn the environment of UNIX and to implement the concepts of networks. 
- Impart the interprocess communication between files. 
- Enlighten about the sockets programming. 

UNIT I INTRODUCTION TO UNIX AND FILE SYSTEM  

UNIT II PROCESSES  

UNIT III INTERPROCESS COMMUNICATION  

UNIT IV SOCKETS  

UNIT V APPLICATIONS  

TEXT BOOKS: 
1. W. Richard Stevens, Advanced Programming in the UNIX Environment, Addison Wesley, New Delhi, 2308. (Unit I to III) 

REFERENCE BOOKS: 
SERVICE ORIENTED ARCHITECTURE

Category: Technical
Mode of Delivery: Lecture -3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
The aim of this course is to provide basic knowledge about XML, Web Services and key technologies for web services.

OBJECTIVES:
- Provide fundamental concepts of Service Oriented Architecture
- Understand XML structure, presentation and transformation technologies
- Gain knowledge about SOAP, UDDI and WSDL to create web services
- Impact information on various WS-* specification standards

UNIT I SOA BASICS

UNIT II XML AND WEB SERVICES

UNIT III WEB SERVICES STANDARDS:
WS-Coordination overview -WS-Addressing language basics-WS-Reliable Messaging language basics-WS-Policy language basic-WS-Security language basics

UNIT IV WSDL, SOAP and UDDI

UNIT V SOA in J2EE and .NET
SOA platform basics - SOA support in J2EE - Platform overview- Primitive SOA support- Support for service-orientation principles- Contemporary SOA support- SOA support in .NET- Platform overview-Primitive SOA support- Support for service-orientation principles- Contemporary SOA support

TEXT BOOKS:
2. Frank. P.Coyne, XML, Web Services and The Data Revolution, Pearson Education,2007(Unit II,IV)

REFERENCE BOOKS:
VIRTUALIZATION TECHNIQUES

Category: Technical
Mode of Delivery: Lecture - 3 Hrs/Week;
Total hours: 45
Credit: 3

AIM

Develop a focused technology view targeted at Virtualization with a focus on Computing and Networking virtualization

OBJECTIVE

- Analyze the different computing Virtualization tools and techniques.
- Understand the layers of Network Virtualization.
- Evaluate the different storage mechanisms & their platforms.

UNIT I OVERVIEW OF VIRTUALIZATION


UNIT II SERVER CONSOLIDATION

Hardware Virtualization - Virtual Hardware Overview - Server Virtualization - Physical and Logical Partitioning - Types of Server Virtualization - Business cases for Server Virtualization - Uses of Virtual server Consolidation - Planning for Development - Selecting server Virtualization Platform

UNIT III NETWORK VIRTUALIZATION


UNIT IV VIRTUALIZING STORAGE


UNIT V VIRTUAL MACHINES PRODUCTS

Xen Virtual machine monitors - Xen API - VMware - VMware products - Vmware Features - Microsoft Virtual Server - Features of Microsoft Virtual Server

TEXT BOOKS:
2. Chris Wolf, Erick M. Halter, Virtualization: From the Desktop to the Enterprise, APress 2005.(Unit II)  

REFERENCE BOOKS:
Category: General
Mode of Delivery: Lecture -3 Hrs/Week;
Total hours: 45
Credit: 3

AIM:
To know about creating and maintaining health care information systems

OBJECTIVES:
□ Understand the basic concepts of health care system.
□ Ensure access of clinical information system on the fly
□ Understand IT governance and assessment of health care information system

UNIT I INTRODUCTION
Introduction to health care information – Health care data quality – Health care information regulations, laws and standards.

UNIT II HEALTH CARE INFORMATION SYSTEMS
History and evolution of health care information systems – Current and emerging use of clinical information systems – system acquisition – System implementation and support.

UNIT III INFORMATION TECHNOLOGY
Information architecture and technologies that support health care information systems – Health care information system standards – Security of health care information systems.

UNIT IV MANAGEMENT OF IT CHALLENGES
Organizing information technology services – IT alignment and strategic planning – IT governance and management.

UNIT V IT INITIATIVES
Management’s role in major IT initiatives – Assessing and achieving value in health care information systems. Case study

TEXT BOOK:

REFERENCE BOOKS: