


"Education for Knowledge, Science, and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur
(Autonomous)



KOLHAPUR (AUTONOMOUS)

B.Sc. Part-I (Computer science Entire) CBCS Syllabus with effect from June, 2020

Structure of the course
To be implemented from June 2020

Theory

Semester - V

Semester V (Total credits= 6)

Sr. NO.	Paper Code	Title of the paper	Internal Mark	External Mark	Total Mark
1	AECC-F1	Communication skill -I	10	40	50
2	DSE-1305E	Core java and operating system	20	80	100
3	DSE-1306E	Data Communication and Software Engineering with UML	20	80	100
4	DSE-1307E	C# Programming and E Commerce	20	80	100
5	SEC-BCSF	PHP Programming	-	50	50

Semester - VI

Sr. NO.	Paper Code	Title of the paper	Internal Mark	External Mark	Total Mark
1	AECC-F1	Communication skill -II	10	40	50
2	DSE-1305F	Advanced Java and Data ware housing and mining	20	80	100
3	DSE-1306F	Computer Networks and C# and introduction to ASP.Net	20	80	100
4	DSE-1307F	Linux OS and Artificial intelligence and Expert system	20	80	100
5	SEC-BCSF	Android Programming	-	50	50

Practical

Sr. NO.	Paper Code	Title of the paper	External Mark	Total Mark
1	1314F	Practical -I	80	100
2	1315F	Practical II	80	100
3	1316F	Project		200



"Education for knowledge, science and culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha"
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B.Sc. Part-III (Computer science Entire)
CBCS Syllabus with effect from June, 2020
Semester - V Computer Science DSE-1305E
Core Java and Operating system
Theory: 72 Hours (90 Lectures) credits-6

Course Outcome

- CO 1 :-** To understand structure of java program, jvm, type conversion. Explain and implements programs in java using control statements, method overloading, constructors, array of objects, keywords this and static.
- CO 2 :-** To write program on inheritance, package, abstract class and interfaces, Implement multithreading in object oriented programs. Understand concept of checked and unchecked exception and write exception handling programs.
- CO 3 :-** To tell what is an operating system, its objectives and functions. To classify types of operating system and explain operatingsystem services.
- CO 4 :-** To explain protection, system calls, system programs and application programs. To understand the concept of process management, memory management and file management and deadlocks

Section-I

Unit1: An Introduction to Java

[10]

A Short History of Java, Features of Java, Java tools-JDK, JRE, Structure of java program compilation and execution of program, JVM, Types of Comments, Data Types, Final Variable Type Conversions-implicit and explicit conversion , Accepting in put from console (Using canner class and command line arguments)

Unit2: Control statements, Classes and objects

[10]

Control statements, For- each loop, Varargs , Declaring 1D, 2D array, Defining Classes, objects and method-method over loading, Array of Objects, Constructor, Over loading Constructors and use of this "Keyword, Static keyword-static block, static Fields and Methods, methods (equals () ,to String(), Wrapper Classes, Finalize () Method

Unit 3: Package , Inheritance and Interface [15]

Package-Introduction to all predefined packages, User Defined Packages. Access Specifies, Inheritance-Types of Inheritance-single, multilevel, hierarchical inheritance, Method Overriding, Super Keyword, final keyword, Abstract class and abstract methods, Defining and Implementing Interfaces,

Unit4: Exception Handling and Multi threading

[10]

Exception Handling- Concept, types- Checked and unchecked, try and catch block, multi plecatch, Try-catch -finally block, throw and throws clause, finally clause, Multithreading- What are threads?, difference between process and thread, Life cycle of thread, methods of thread class, runn able interface, is Alive() and join() methods, Thread priorities , Running multiple threads ,Synchronization and inter thread communication wait() , notify(), notify All() methods .

Section - II

Unit1: Operating System over view

[10]

Introduction and definition of operating system, Objectives and function, Types of operating system, Operating system services, Protection, Input output, memory and CPU protection, System calls: types of system calls and system call implementation, System programs and application programs.



Unit2: Process Management

[11]

Process concept, Process states, Process control block (PCB), Context switching, Threads, concept of multithreads, benefits of thread and types of threads, Process scheduling: scheduling objectives, types of schedulers, scheduling criteria, schedule in algorithms- Preemptive and non-preemptive. FCFS, SJF, priority, round robin, multiple queue, multilevel feedback queue Process synchronization, critical action problem, semaphores.

Unit3: Memory Management

[12]

Logical and physical address map, Swapping, Memory allocation-contiguous memory allocation - fixed and variable partition, internal and external fragmentation and compaction, Paging and virtual memory, demand paging, locality of reference, page fault, dirty page/ dirty bit, page replacement policies FIFO, optimal, LRU, MFU, Disk structure, Disk scheduling- FCFS, SSTF, SAN, LOOK, CSCAN, CLOOK

Unit4: File management and Dead locks

[12]

File concept, access methods- sequential and direct, file types and operations, Directory structure- single level, two level, tree structure, acyclic graph, general graph directory structure, Allocation method-contiguous, linked and indexed, Definition of dead lock, characteristics Dead lock prevention, detection and recovery

References:

- 1) Complete reference Java by Herbert Schildt (5th edition)
- 2) Java 2 programming black books, Steven Holzner
- 3) Programming with Java, A primer, For the edition, By E. Balaguru samy
- 4) Operating System Concepts- Silber schatz, Galvin and Gagne (8th edition)
- 5) System Programming and Operating System – D. M. Dhamdhare
- 6) Operating System by a Godbole Tata Mcgraw – Hill Publishing

Practical Program List Core Java

1. Program on type conversion
2. Program on Control Structure
3. Program on method over loading and over riding
4. Program on Packages
5. Program on constructor
6. Program on Inheritance
7. Program on Arrays
8. Program on Exception Handling

Operating System

1. Write a program to implement copy command of DOS.
2. Write a program to display date and time of system
3. Write a program to implement pwd command of linux.
4. Write a program to implement wc command of linux.
5. Write a program to implement string function without using library functions.
6. Write a program to count number of vowels and consonants.
7. Write a program to implement md, cd, rd command.
8. Write a program to implement type command.
9. Write a program to implement name command.
10. Write a program to implement cat command



“Education for knowledge, science and culture”
- Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B. Sc. Part – III (Computer science Entire)
CBCS Syllabus with effect from June, 2020
Semester- V Computer Science DSE-1306E
Data Communication and Software Engineering with UML
Theory: 72 Hours (90 Lectures) credits -6

Course Outcomes:

- CO 1 :-** To understand the fundamental concept and components of Data Communication system. To Explain Concept of network, advantages and disadvantages, categories and architectures of network. To explain types of transmission media and types of transmission modes. Understand multiplexing and switching techniques. Explain network devices, protocols and elements of protocol and standards.
- CO 2 :-** To understand functions of physical layer, digital to analog conversion methods, analog to digital Conversion methods. Understand Data link layer design issues, Framing, Error detection, and Error correction and flow control. To understand the basics of software and software engineering. To learn what is system's development life cycle
- CO 3 :-** To learn and understand what are traditional and latest process models, learn and know what agile development is. To learn different fact finding techniques, which serve as a basis for requirements analysis and gathering, understand the importance of SRS in s/w development.
- CO4 :-** To study use of Unified modeling language. To learn how to draw UML diagram. To understand and learn to select suitable UML diagram for our software system. To understand the basics of software testing

Section-I

- Unit1: Basics of Data communication** [10]
Concept of data communication, Components-sender, receiver, message, Transmission media, Data Representation, Data Flow-Simplex, Half-duplex, and Full-duplex, Networks: Definition, Advantages and disadvantages, Categories of Networks-LAN, WAN, MAN, Network Architecture-Client-Server and Peer to Peer.
- Unit2: Transmission media and modes** [11]
Transmission Media Guided Media- Twisted- Pair Cable, Coaxial Cable and Fiber Optic Cable, Unguided Media: Radio Waves, Microwaves, Infrared Waves. Transmission Modes: Parallel, Serial- Asynchronous, Synchronous, Isochronous
- Unit3: Multiplexing, Switching and Network Devices** [11]
Multiplexing: Frequency-Division Multiplexing, Wave length-Division Multiplexing Time Division Multiplexing, Switching: Circuit switching- data gram and virtual Switching, Packet Switching and Message Switching, Network Devices: Repeater, Hub, Bridge, Switch, Router, Gateway, **Brouter, Modem**. Protocols and Standards, Protocols: concept, syntax, semantics, Timing, Standards.
- Unit4: Physical Layer and Data Link Layer** [13]
Physical layer: Digital-to-analog conversion: concept, Amplitude Shift Keying, Frequency, Shift Keying, Phase Shift Keying, Analog-to- digital conversion: Pulse Code Modulation (PCM), Delta Modulation (DM), Data link layer: Design issues, Framing, error Detection and Correction,



Section-II

Unit1: Introduction to software engineering and process models [12]

Definition of software, definition of software engineering, characteristics of software, System Development Life Cycle (SDLC), phases of SDLC, Software process models: Traditional models- Water fall model ,Proto typing model, Spiral Model, Introduction to Agile software development-concept, advantages, types- scrums, extreme programming(XP).

Unit2: Introduction to Requirements Analysis [10]

Requirement anticipation and investigation, Fact finding methods- Interviews, Questionnaires, observation, recorder view, Software requirements specification (SRS)- need of SRS, characteristic of SRS, structure of SRS, Types of requirements - functional and non- functional ,

Unit3: Introduction to UML and UML Diagrams- I [11]

Introduction to UML- concept of UML, advantages of UML, applications of UML, Classification of UML diagrams, Use case diagrams- overview, identifying actors and use cases, communication and relationships, example, Class diagrams: classes and objects, association and links, multiplicity, inheritance, example. State machine diagram-states, event, composite state, transition, activity, and example.

Unit4: UML Diagrams- II and introduction to Software Testing [12]

Interaction diagrams- over view, Sequence Diagram- concept, activation, example, Activity diagram- concept, activities, actions, decisions, control nodes, fork and join node, example, Software Testing over view- concept, Testing fundamentals, Types of testing- Unit testing, Acceptance testing (α / β), Integration testing, Black box testing, White box testing.

Reference Books:

1. James F. Kurose, University of Massachusetts, Amherst Keith W. Ross, Polytechnic University, Brooklyn -Computer Networking: A Top-Down Approach, 4th Edition, Pearson.2008
2. Behrouz A.Forouzan- Data Communications And Networking-(4th edition) Mc Graw- Hill.2007.
3. Tanenbaum A.S. "computer Network", 3rd Edition, Prentice Hall of India.2004.
4. Stalling W, "computer communication Network" . (4th edition). Prentice hall of India 1993
5. System Analysis and design and Introduction to Software Engineering- Parthsarathi, B.W. Khalkar.
6. UMLTM2 Tool kit By Hans- Erik Eriksson, Magnus Penker, Brian Lyons, David Fado
7. An Integrated Approach To Software Engineering by Pankaj Jalote edition3
8. Fundamentals of Software Engineering- Rajib Mall edition 3
9. Software Engineering- R.S.Pressman edition3
10. The Unified Modeling Language Reference Manual by James Rumbaugh, Ivar Jacobson, Grady Booch second edition by Addison-Wesley
11. Object Oriented Software Engineering using UML, Patterns and Java third edition pearson publication
12. Object Oriented Software Engineering by Ivar Jacobson (Pearson Edu. INC)



"Education for knowledge, science and culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B.Sc. Part-III (Computer science Entire) CBCS Syllabus with effect from June, 2020
Semester - V Computer Science DSE-1307E
C# Programming and E-Commerce
Theory: 72 Hours (90 Lectures) credits-6

Course Outcome

- CO 1 :-** To understand the Event driven & sequence driven programming, to explain .net framework architecture, understand assembly, namespace, garbage collector & JIT Compilers .
- CO 2 :-** To understand data types, operators, conditional, unconditional & looping statements. To understand how to write function & procedures Understand class, object, & OOP concepts.
- CO 3 :-** To understand different controls in window application, events & properties of controls, the process of Electronic commerce and Business strategy involved in it and security concerns while doing online businesses
- CO 4 :-** To appreciate ethical implications of professional practice. Be aware of global perspectives. Analyze features of existing e-commerce businesses, and propose future directions or innovations for specific businesses

Section-I

Unit1: Introduction

[10]

Event driven & sequence driven programming, Introduction to c# . . net frame work architecture, Assembly Name space, Garbage collect or JIT compilers .

Unit2: Data Types & Control Structure

[12]

Variables, expressions, constants, Data Types, Operators, implicit & explicit conversions
Conditional statements, Loop statements, Unconditional statements, Functions, Procedures

Unit3: Working with Classes

[12]

Class & objects, Constructors, Inheritance, Polymorphism .

Unit4: Developing GUI applications with Win Form

[11]

Different controls in win form – Forms, textbox, labels, buttons, radio buttons, check box, combo box, list box, Date time picker, Important properties of controls, Important event so feach control, Menus, built in dialog box –input box, message box, Mouse events –click, double click, enter, hover, leave, move. Keyboard events – key press, key down, key-up .

Section-II

Unit1: Introduction

[10]

History, Overview, Definition of E-commerce, Scope & Goals of E-Commerce, Advantages and Disadvantage of E-commerce, Applications of E-commerce, Challenges of E-commerce. Roadmap of e-commerce in India, Traditional commerce Vs E-commerce.

Unit2: Electronic Data Interchange (EDI)

[15]

Meaning of EDI. History of EDI, EDI Working Concept .EDI Model, EDI Standards, Implementation difficulties of EDI. Advantages and Disadvantage of EDI, Ecommerce Business Models (B2B,B2C,C2C,C2B,B2G,G2G,G2C), E-commerce marketing and business strategies, Social networks and online communities,History and Development of Use of Internet. Domain Names, Internet Service provider. World Wide Web,Uniform Resource Locator, Web Browsers,Email, Voicemail, Web Search Engines .



Unit3: E-Payment Systems**[10]**

Electronic Payment concept. Steps for Electronic Payment, Types of E- Payment Systems-Prepaid, Postpaid, Electronic fund Transfer. Net Banking, Case Study: List out the Websites dealing with E-Commerce, Survey of ATM Center, Create Web site with minimum details, Logon to trade Website and make a trial order for purchase of an item.

Unit4: E- Security Issues and Threats**[10]**

Secure Transaction concept- Authentication & Authorization, Privacy on Internet. Computer Crime Types and laws. Viruses- Types of Attacks , Vulnerability of Internet Sites. Denial- of- Service attacks, Cryptography - Encryption, Decryption, SSL- SET, Firewall, Digital Certificates. Digital signatures.

References:

- 1) E-Commerce: The Cutting Edge of Business, Kamlesh K. Bajaj & Debjani Nag, Tata McGraw Hill
- 2) Kenneth C. Laudon, E-Commerce: Business, Technology, Society, 4th Edition, Pearson
- 3) C.S.V. Moorthy E- Commerce concepts, Models, Strategies- Himalaya Publications, New Delhi.
- 4) e-Commerce Strategy, Technologies and Applications, David Whiteley, McGraw Hill International
- 5) E-Security, Electronic Authentication and Information Systems Security Sundeep Oberoi, TMG
- 6) E-Commerce by S. Jaiswal- Galgotia Publications.
- 7) C#4.0 The Complete Reference Schildt H . Edition- 2010 Publication- Tata Mc Graw Hill
- 8) .Net 4.5 programming Black Book Kogent Edition- 2013 Publication- dream Techpress

Practical list:

1. Program to find no. of denomination sofa given amount
2. Program to find sum of numbers between 200 to 600 which are divisible by 6
3. Program to read number „n” and digit d & check whether d is present in n, and if yes check how many times
4. Program to read number „n” & print out digit by digit as a series of words using function.
5. Program to find area of rectangle, triangle & circle using interface.
6. Program. To find volume of cube, cylinder & rectangle using method overloading.
7. Program to per form following operation son form.
 - Form-size- maximum, minimum & restore
 - Color- Blue, yellow & green
 - Exit
8. Create a window application for employec. Following information should be accepted Empid, name, birth date, joining date, basic, hra%, da% & following information should be calculated & displayed in appropriate control. Age, retirement date, total HRA, total DA & total salary.



**Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B.Sc. Part – III (Computer science Entire)
CBCS Syllabus with effect from June, 2019
Semester: V Skill Enhancement course-II
PHP Programming
Theory: 30 Hours (38 Lectures) credits-2**

Course outcome:

- CO 1 :- Get basic knowledge of PHP programming .
- CO 2 :- To implement functions , strings , arrays and objects .
- CO 3 :- Get the basic knowledge of data bases using for web programming .
- CO 4 :- To earn skill set to develop online information system using the open source PHP.

Unit1: Introduction to PHP [10]

What does PHP do? ,A walk through PHP- forms, databases, graphics, Language basics- lexical structure- case sensitivity, statements and semicolons, white spaces and line breaks, comments, literals, identifiers, keywords, Data types- integers, floating point numbers, strings, Booleans, arrays, Variables- variable references, scope, garbage collection, Expressions and operators, Flow control statements- if, switch, while, for, for each ,try...catch, declare, exit and return, go to.

Unit2: Functions and strings [10]

Calling a function, defining a function, Variable scope, function parameters, Return values, Variable functions, Anonymous functions, Quoting string constants, Printing strings, cleaning strings, Comparing, manipulating and searching strings, Regular expressions.

Unit3: Arrays and objects [10]

Indexed versus associative arrays, Identifying elements of an array, Storing data in arrays, Multi dimensional arrays, Extracting multiple values, Converting between arrays and variables, Traversing arrays, Objects- terminology, creating an object, accessing properties and methods, Declaring a class- methods, properties, constants, inheritance, interface.

Unit4: Web technique and databases [10]

HTTP Basics, variables, processing forms, setting response headers, Using PHP to access a data base, PHP data objects, My SQLi object interface, SQL its, Mongo DB, Case stud



"Education for knowledge, science and culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe Shri
Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B. Sc. Part – III (Computer science Entire)
CBCS Syllabus with effect from June, 2020
Semester-VI Computer Science DSE-1305F
Advanced Java and Data ware housing and mining
Theory: 72 Hours (90 Lectures) credits -6

Course outcomes

- CO 1 :-** To create a full set of UI Widgets using Abstract Windowing Toolkit (AWT) & Swings. Learn to access database through Java programs, using Java Data Base Connectivity (JDBC). Create dynamic web pages using Servlets .
- CO 2 :-** To create dynamic web pages using JSP. To understand Data Warehousing, Working of data warehouse, Data Warehouse applications. To understand types of data Warehouse, Difference between Data Warehouse (OLAP) and Operational Database (OLTP).
- CO 3 :-** To understand and explain concept of data mining, Process of knowledge discovery in databases (KDD). To Explain Data Objects and Attribute Types. To Understand Data Preprocessing and Data Quality. To Understand Data Preprocessing and Data Quality .
- CO 4 :-** To explain major tasks in Data Preprocessing. To understandmarket basket analysis and explain Apriori algorithm. To understand concept of Classification. To understand regression analysis, Concept of clustering and explain K-means Clustering algorithm .

Section-I

Unit1: User Interface Components with AWT and Swing [19]

A wt- What is AWT? classes hierarchy, windows fundamentals Frame Windows Event Classes, Mouse Event Class, Action Event Class, Window Event Class, Event Listener Interface: Mouse Listener, Action Listener, Window Listener and Key Listener, AWT Controls: Labels, Text Field, Pushbuttons, Layout Managers (Flow Layout, Border Layout, Grid Layout, Card Layout), Swing- What is Swing? Difference between AWT and Swing.. The MVC Architecture and Components –J Frame, J Button, J Label, J Text, J Text Area, J Check Box and J Radio Button, J List, J Combo Box, J Menu, J tabbed Pane , J Scroll Bar , Dialogs (Message, confirmation, input)

Unit2: JDBC [7]
What is JDBC? Steps for connectivity between Java program and data base , Type of drivers, Simple program- data base operations like creating tables, CRUD (Create, Read, Update, Delete) operations using SQL .

Unit3: Servlet [10]

Introduction of servlet: How servlet work, model diagram, Uses of servlet, Life cycle of servlet, Servlet API: packages- javax.servlet and javax. servlet.http , Session Tracking Mechanisms, Http Session, Cookies, URL- Rewriting, Hidden- Form Fields .

Unit4: JSP [10]

Introduction, Jsp Life Cycle, Jsp Implicit Objects & Scopes, Jsp Directives 1.page2.include3.taglib , Jsp Scripting Elements- 1.declaratives2.scriptlets3. expressions , Simple application using JSP, Difference between JSP and Servlet .



Section-II

Unit1: Introduction to data ware housing

[10]

What is Data Ware housing?. How Data ware house works? ,Why a Data Ware house is Separated from Operational Data bases, Data Ware house Applications, Types of Data Ware house , Difference between Data Ware house (OLAP) and Operational Database(OLTP) .

Unit2: Introduction to data mining

[10]

What is data mining?. Process of knowledge discovery in databases (KDD), Getting to Know Your Data, Data Objects and Attribute Types, What Is an Attribute, Nominal Attributes , Binary Attributes, Ordinal Attributes, Numeric Attributes , Discrete versus Continuous Attributes.

Unit3: Data preprocessing and association rule mining

[10]

Data Preprocessing: An Overview, Data Quality: Why Preprocess the Data?, Major Tasks in Data Preprocessing, Data Cleaning (Missing Values, Noisy Data) , Data integration , Data Transformation , Data reduction, Data Discretization ,Association Rule Mining, Market basket analysis, Apriori algorithm.

Unit4: Classification, prediction and clustering

[15]

Classification, Classification Requirements, Classification vs Prediction, Issues related to Classification and Prediction , Decision tree , Prediction , Regression analysis , Clustering: What Is Cluster Analysis? Different Types of Clustering, K-means: The Basic K-Means Algorithm.

Practical Program List

1. Program on Swing
2. Program on AWT
3. Program on Database Connection
4. Program on cookie and Session
5. Program on Servlet
6. Simple application using JSP.

References:

1. Complete reference Java by Herbert Schildt (5th edition)
2. Java 2 programming black books, Steven Horlzner
3. Programming with Java, A primer ,Forth edition ,By E.Balagurusamy
4. Jiawei Han and Micheline Kamber, " Data Mining Concepts and Techniques", Morgan Kaufmann Publishers, USA, 2006.
5. Berson "Data Ware housing, Data Mining and OLAP",Tata Mc Graw Hill Ltd, New Delhi, 2004.
6. Pang- Ning Tan, Michael Stein bach,Vipin Kumar, Introduction to Data Mining, Pearson Education
7. Arun K Pujari, "Data mining techniques", Oxford University Press,London,2003.
8. Dunham MH," Data mining: Introductory and Advanced Topics". Pearson Education, New Delhi, 2003
9. Mehmed Kantardzic, "Data Mining Concepts, Methods and Algorithms", John Wiley and Sons, USA, 2003.
10. Soman K.P.,Diwakar Shyam, Ajay V., Insightin to Data mining: Theory and Practice, PHI,2006



"Education for knowledge, science and culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe Shri
Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B.Sc. Part-III (Computer science Entire) CBCS
Syllabus with effect from June, 2020
Semester – VI Computer Science DSE-1306F Computer
Networks and C# and introduction to ASP.Net
Theory: 72 Hours (90 Lectures) credits-6

Course Outcomes:

- CO 1 :-** To understand Flow control protocols-Sliding window protocol, One bit sliding window protocol, protocol using go back N, Protocol using selective repeat. Explain design issues, concept of routing, routing algorithms and Congestion Control algorithms.
- CO 2 :-** To explain transport layer service primitives, TCP, UDP protocol. Understand session layer services, Remote Procedure Call (RPC), Presentation layer services, Concept of cryptography and types of cryptography. To explain Functions of application layer, application layer protocols (DNS, HTTP, SMTP, Telnet and FTP) and network security.
- CO 3 :-** To explain Functions of application layer, application layer protocols (DNS, HTTP, SMTP, Telnet and FTP) and network security. To get knowledge different types of errors, structured & unstructured exception, to understand how to trace errors.
- CO 4 :-** To understand database connection, connected & disconnected architecture, data binding to controls, data validations. Understand & Generate Reports from database using crystal report Get Basic introduction to ASP.net, understand different ASP.net controls, understand concepts of Master Page

Section-I

- Unit1: Data Link Layer Protocols, Network Layer** [10]
Protocols- Sliding window protocol: one bit sliding window protocol, protocol using Go Back N, protocol using selective repeat, Network Layer: Design issues, Concept of Routing.
- Unit2: Network Layer and Transport Layer** [12]
Routing Algorithms (Shortest Path, Flooding, Distance Vector Routing), Congestion Control Algorithms: Leaky Bucket, Token Bucket, transport Layer: services: connection oriented and connection less services, Transport Layer Primitives: listen, connect, send, receive, disconnect. Protocols: TCP, UDP
- Unit3: Session and Presentation layer** [11]
Session layer: Services: dialog management, synchronization, activity Management, exception handling Remote procedure calls (RPC), Presentation Layer: Services- Translation, compression, encryption, Cryptography-Concept, Symmetric key and Asymmetric key Cryptography.
- Unit4: Application layer and network security** [12]
Application layer: Function, Protocols- Domain name system (DNS), Hyper text transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP), Network security: Security concept and services, Message Authentication, Digital Signatures and Entity authentication.



Section-II

Unit1: Exception Handling

[10]

Errors- types of errors, Structured Exception – Try Catch End Try, finally, throw, Unstructured Exception–On error Go To, resume, resume next, Tracing Errors– Break Point, watch window, quick watch window, autos .

Unit2: Data base Connectivity in C#

[12]

Data base: Connections, command, Data adapters, and data sets, Connection to data base using MS-Access, SQL Server, Data binding with controls like Text Boxes, List Boxes, Data grid etc. Data form wizard, Data validation.

Unit3: Using Crystal Report

[12]

Connection to Data base, Table, Queries, Create and Modify Report, Formatting Fields and inserting Header, Footer, Group, Details Working with formula fields, Parameter fields, Working with Multiple Tables.

Unit4: Introduction to ASP.Net with C#

[11]

Introduction to ASP.NET, Working with web forms: Buttons, Text Boxes, Labels, Check Boxes, Radio Buttons, Tables, Panels, Images, Image Buttons, List Boxes, Drop- Down Lists, Hyper links and Link Buttons .

Program list

1. Create a log in form with User Id, password, current date. Check the user Id & password from table & give proper message.
2. Create a window application for saving account of a customer with a/c no, name, update, opbal, mode of payment. If mode of payment is check then get cheque number. Add data to saving transaction table with fields a/cno, debit amount, credit amount, balance, tdate, mode of payments, satus. Generate add, edit, delete operations
3. Create a window application that created bit & credit activities to the saving transaction table. Balance should be made. (c.g. check a/c no with the master file & display name). check balance before debit the amount.
4. Create crystal report for Saving Master list.
5. Create customer bill with master detail transactions
6. Generate customer bill with crystal report .

References:

1. Behrouz A.Forouzan- Data Communications And Networking- (4th edition)McGraw- Hill.2007
2. Tanenbaum A.S. "computer Network", 3rd Edition, Prentice Hall of India.2004.
3. Stalling W, "computer communication Network". (4th edition).Prentice hall of India 1993
4. C#4.0 The Complete Reference Schildt H. Edition – 2010 Publication– Tata Mc Graw Hill
5. .Net4.5 programming Black Book Kogent Edition– 2013 Publication– Dream Techpress
6. ASP.Net4.0 Black Book Edition–2010 Publication– Dream Tech Press



"Education for knowledge, science and culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe Shri
Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B. Sc. Part – III (Computer science Entire)
CBCS Syllabus with effect from June, 2020
Semester-VI Computer Science DSE-1307F
Linux OS and Artificial intelligence and Expert system
Theory: 72 Hours (90 Lectures) credits -6

Course Outcome:

- CO 1 :-** To understand the linux basics- shell, kernel, general purpose utilities, directory handling commands, file handling commands
- CO 2 :-** To implement basic filters, understand environment variables.
- CO 3 :-** To use VI editor and its different commands. To write shellscripts and run them
- CO 4 :-** To write shell scripts using different conditional and loopingstatements.

Section-I

Unit1: Linux Basics

[15]

What is an OS? What is Linux, history of Linux, Linux distribution, The shell, kernel, Linux file system, login, logout, Different general purpose utility commands(GPU)-cal, date, bc, who, Concept of directory, home directory, directory handling commands- PWD, cd, mkdir, rmdir, ls, relative and absolute path, Basic file attribute smet a chracters, Access permission chmod command, File handling commands- cat,cp, mv, rm, lp, man, pipe.

Unit2: Basic filters

[10]

What is a filter, head, tail, sort, grep, sed, awk, Regular expressions and its types, Environment variables- PATH,USER,HOME,UID,TERM,SHELL, Concept of process, PID, PS, KILL, FREE.

Unit3: VI editor

[7]

What is the VI editor- command mode, insert mode, last line mode, VI editing commands, moving within a file, saving and closing the file, Command mode movement, command mode-making changes, repeating VI actions.

Unit4: Essential shell programming [13]

Linux shells, shell scripting, running a shell script, Statements- read, echo, exit, expr, Conditional statements- test, if, case, Looping statements-while, until, for, Positional parameters- set, shift.

Section-II

Unit1: Introduction to Artificial Intelligence

[09]

Definition of Artificial Intelligence, History of Artificial Intelligence, Goals of A.I., Contributors of A.I., Branches of A.I., Applications of A.I.,Why Artificial Intelligence, Advantages of A.I., Disadvantages of A.I., Types of Artificial Intelligence: Type1, Type2.

Unit2: Introduction to Intelligent System

[11]

What is intelligence, Types of Intelligence, Components of Intelligence- Reasoning, Learning, Problem



Solving, Perception, Linguistic Intelligence, A.I. Agents and environment - concept, definition of agent, definition of environment, Structure of A.I agent, Rules for A.I agent, Rational Agent- PEAS representation (Case study of Self Driving Car) examples, Turing test.

Unit3: Problem Solving in A.I.

[13]

Concept, Search algorithm terminologies: i) Search- Search Space, Start State, Goal State. ii) Search Tree, iii) Actions, iv) Transition Model, v) Path Cost vi) Solution vii) Optimal Solution, viii) Problem and Problem Space, Types of Search Algorithms: Uninformed- Breadth First Search, Depth First Search, Informed Heuristic Search - i) Generate and test method , ii) Hill Climbing, Natural Language Processing: concept, definition, natural language processing and understanding, NLP analysis stages.

Unit4: Introduction to Expert System

[12]

What are expert systems, Features of expert Systems, Components of Expert System- i) Knowledge base- definition, components of Knowledge base, Knowledge representation , Knowledge Acquisition, ii) Inference Engine - Definition, forward chaining, backward chaining, iii) User Interface, Development of E.S., Limitations of E.S., Applications of E.S.

Program List

- Display, copy, move, delete and print files form different directories
 - Change file access permissions using chmod and confirm using ls- l command
 - Creating text files using VI editor
- Shell scripts-
1. Write a shell script to get any number and display its square, cube sum of its digits .
 2. Write a script to display sequences such as 2
4 6 8 10
0 1 1 2 3 5 8
 3. Use of set and shift in a script to use positional parameters.
 4. Write a script using case structure to validate inputs
 - a) Accept only two digit number.
 - b) Accept employee code such as first character of code must be a letter
 - c) Accept only four character long string.

Reference books:

- Unix concept and applications----- Sumit abha Das
- Unix shell programming- Yash want Kanetkar
- Artificial Intelligence by- Mrs. Neeta Deshpande Technical Publications Pune.
- Artificial Intelligence Making a system Intelligent by Dr. Nilakshi Jain.
- Artificial Intelligence Elaine Richard Kevin Knight, Tata Mc Graw Hill edition 3.



“Education for knowledge, science and culture”
- Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR
B. Sc. Part – III (Computer science Entire)
CBCS Syllabus with effect from June, 2020
Semester: VI Skill Enhancement course-II
SEC-IV Android Programming
Theory: 30 Hours (38 Lectures) credits-2

Course Outcomes

- CO 1 :-** To understand the Event driven & sequence driven programming, to explain.net frame work architecture, understand assembly, namespace, garbage collector & JIT Compilers
- CO 2 :-** Understand data types, operators, conditional, unconditional & looping statements. To understand how to write function & procedures
- CO 3 :-** Understand class, object, & OOP concepts
- CO 4 :-** Understand different controls in window application, events & properties of controls.

Unit-1:- Fundamentals&developmentsof Android

What is android, setting up development environment, Dalvik virtual machine & apk file extension. How to setup Android Development Environment . Android development Frame work- Android- SDK, Android Project Frame work

Unit2:- AndroidActivities&UIDesign

Understanding Intent, Activity, Activity Lifecycle and Manifest, Creating Application and new Activities Expressions and Flow control, Android Manifest Simple UI- Layouts and Layout properties, Fundamental Android UI Design Introducing Layouts Creating new Layouts, Draw able Resources Resolution and density independence (px,dip,dp,sip.sp)

XML Introduction to GUI objects viz. Push Button Text /Labels Edit Text, Toggle Button, Weight Sum Padding Layout Weight

Unit3:- Advanced UI Programming

Event driven Programming in Android (Text Edit, Button clicked etc.)Creating as splash screen, Event driven Programming in Android . **Android Activity Lifecycle** - Creating threads for gaming requirement Understanding the Exception handler. **Different controls in win form** – Forms, textbox, labels, buttons, radio buttons, check box, combo box, list box, Date time picker, Important properties of controls, Important events of each control, Menus, **built in dialog box**– input box, message box, **Mouse events** – click, double click, enter, hover, leave, move, **Keyboard events** – key press, key down, key-up

Unit4:- Toast, Menu, Dialog, List and Adapters

What is Menu? Custom Vs. System Menus Creating and Using Hand set menu Button (Hardware) What are Android Themes. What is Dialog? How to create an Alter Dialog? What is Toast in Android? List & Adapters Manifest.xml File Update



Question Bank

Here is a list of basic Android tutorials, that you can follow in order to make the first basic steps in the Android World.

Android Layouts and Views

- Android Frame Layout Example
- Android Linear Layout Example
- Android Image View Example
- Android Text View Example
- Android Button Example

Android Click and Drag Listeners

- Android On Click Listener Example
- Android Drag and Drop Example

Android Styles and UI Elements

- Android Styles and Themes Example
- Android Toast Example
- Android Tool bar

Example Android Activities

- Android Activity Transition Example

Android Development

- Building Android Applications with Gradle
- Android Project migration from Eclipse to Android Studio




HEAD
DEPARTMENT OF B.SC. COMPUTER SCIENCE
(ENTIRE)
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)