Shakuntala Krishana Institute Of Technology

KD64

SYLLABUS (B.C.A)

BACHELORS OF COMPUTER APPLICATION

Semester-Vth

Course Code	Course Name	L	T	P	C
BCA-5001	Knowledge Management	3	1	0	4
BCA-5002	Java Programming and Dynamic Webpage Design	3	0	0	3
BCA-5003	Computer Network	3	1	0	4
BCA-5004	Numerical Methods	3	1	0	4
BCA-5005	Minor Project	0	1	2	2
BCA-5006	Viva-Voice on Summer Training	0	0	2	1
BCA-5002P	Computer Laboratory and Practical Work of Java Programming & Dynamic Webpage Design	0	0	6	3
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Course Code	Course Name	L	T	P	C
BCA-5001	Knowledge Management	3	1	0	4

CO 1	Introduce students business intelligence and importance and technologies involved in decision support system.
CO 2	Characterize expert systems, OLAP & OLTP. Introduction and use of data warehouse and data marts in knowledge management system.
CO 3	Apply appropriate tool for data mining and knowledge discovery form databases.
CO 4	Describe key components of KM solutions: infrastructure, mechanisms and technologies, systems and processes. Clear understanding of importance of intellectual capital in gaining a competitive advantage of organization

UNIT-I

Business Intelligence and Business Decisions: Modeling Decision Process; Decision support systems; Group decision support and Groupware Technologies.

UNIT-II

Executive Information and support Systems: Business Expert System and AI, OLTO & OLAP; Data Warehousing; Data Marts, Data Warehouse architecture; Tools for data warehousing.

UNIT-III

Multi- Dimensional analysis: Data mining and knowledge discovery; Data mining and Techniques; Data mining of Advance Databases.

UNIT-IV

Knowledge Management Systems: Concept and Structure KM systems, techniques of knowledge management appreciation & limitation.

Referential Books:
1. Decision support system, EIS, 2000
2. W.H.Inmon, "Building Data Warehousing", Willey,1998.
5. Han, Jiawei, Kamber, Michelinal, " Data Mining Concepts & Techniques", Harcourt

India, 2001

Course Code   Course Name   L   T   P   C
BCA-5002   Java Programming and Dynamic Webpage Design   3   0   0 3F

Course Outcomes: At the end of the course, the student will be able to:

CO1	Use the syntax and sementics of Java programming language and basic concepts of OOPs.
CO2	Develop reusable Programs using the concept of Inheritance
CO3	Apply the concepts of Multithreading.
CO4	Design event driven GUI.
CO5	Identify categories of program, systems software and application organize and work with file and folder.

UNIT-I

Java Programming: Data types, control structured, arrays, strings, and vector, classes (inheritance, package, exception handling) multithreaded programming.

UNIT-II

Java applets, AWT controls (Button, Labels, Combo box, list and other Listeners, menu bar) layout manager, string handling (only main functions)

UNIT-III

JDBC: JDBC Fundamentals, Establishing Connectivity and Working with Connection Interface, Working with Statements, Creating and Executing SQL Statements, Working with ResultSet Objects.

UNIT-IV

Java Servlets: Introduction, HTTP Servlet Basics, The Servlet Lifecycle, Retrieving Information, Sending HTML Information, Session Tracking.

UNIT-V

Java Server Pages: Introducing Java Server Pages, JSP Overview, Setting Up the JSP Environment, Generating Dynamic Content, Using Custom Tag Libraries and the JSP Standard Tag Library, Processing Input and Output.

Referential Books:

1. Patrick Naughton and Herbertz Schildt, "Java-2 The Complete Reference" 199,TMH.
2. Shelley Powers, "Dynamic Web Publishing" 2nd Ed. Techmedia,1998.
3. Ivor Horton, "Beginning Java-2" SPDPublication

4. Jason Hunter, "Java Servlet Programming"O'Reilly
5. Shelley Powers, "Dynamic Web Publishing" 2nd Ed. Techmedia,1998
6. Hans Bergsten, "Java Server Pages", 3rd Ed.O'reilly

Course Code	Course Name	L	T	P	C
BCA-5003	Computer Network	3	1	0	4

Course Outcomes: At the end of the course, the student will be able to:

CO1	Explain basic concepts, OSI reference model, services and role of each layer of OSI model and TCP/IP, networks devices and transmission media, Analog and digital data transmission
CO2	Apply channel allocation, framing, error and flow control techniques.
CO3	Describe the functions of Network Layer i.e. Logical addressing, subnetting & Routing Mechanism.
CO4	Explain the different Transport Layer function i.e. Port addressing, Connection Management, Error control and Flow control mechanism.
CO5	Explain the functions offered by session and presentation layer and their Implementation.
CO6	Explain the different protocols used at application layer i.e. HTTP, SNMP, SMTP, FTP, TELNET and VPN.

UNIT-I

Basic Concepts: Components of data communication, distributed processing, standards and organizations. Line configuration, topology, Transmission mode, and categories of networks.
OSI and TCP/IP Models: Layers and their functions, comparison of models.
Digital Transmission: Interfaces and Modems: DTE-DCE Interface, Modems, Cable modems.

UNIT-II

Transmission Media: Guided and unguided, Attenuation, distortion, noise, throughput, propagation speed and time, wavelength, Shannon capacity, comparison of media.

UNIT-III

Telephony: Multiplexing, error detection and correction: Many to one, One to many, WDM, TDM, FDM, Circuit switching, packet switching and message switching.
Data link control protocols: Line discipline, flow control, error control, synchronous and asynchronous protocols, character and bit oriented protocols, Link access procedures.
Point to point controls: Transmission states, PPP layers, LCP, Authentication, NCP.
ISDN: Services, Historical outline, subscriber's access, ISDN Layers and broadcast ISDN.

UNIT-IV

Devices: Repeaters, bridges, gateways, routers, The Network Layer; Design issues, Internetworking, Network-Layer in the internet.

UNIT-V

Transport and upper layers in OSI Model: Transport layer functions, connection management, functions of session layers, presentation layer and application layer.

Referential Books:

1. A.S.Tanenbaum, "Computer Networks"; Pearson Education Asia, 4th Ed.2003.
2. Behrouz A.Forouzan, "Data Communication and Networking", 3rd Ed. Tata MCGraw Hill, 2004.
3. William stallings, "Data and computer communications", Pearson education Asia, 7th Ed., 2002.

Course Code   Course Name   **L   T   P   C**
BCA-5004   Numerical Methods   **3   1   0   4**

Course Outcomes: At the end of the course, the student will be able to:

CO1	Apply Numerical Methods to find solution of Algebraic and transcendental equation
CO2	Apply Various Interpolation techniques to interpolate the complicated functions for given data into much simpler once like polynomial
CO3	Evaluate numerically differentiation and integration of a tabular function if analytical methods are not given
CO4	Solve system of linear equations in large size with the help of different iterative methods
CO5	Solve the ordinary differential equations using different numerical methods

UNIT-I

Roots of Equations: Bisections Method, False Position Method, Newton's Raphson Method, Rate of convergence of Newton's method.

UNIT-II

Interpolation and Extrapolation : Finite Differences, The operator E, Newton's Forward and Backward Differences, Newton's dividend differences formulae, Lagrange's Interpolation formula for unequal Intervals.

UNIT-III

Numerical Differentiation Numerical Integration : Introduction, direct methods, maxima and minima of a tabulated function, General Quadratic formula.

UNIT-IV

Solution of Linear Equation: Gauss's Elimination method and Gauss's Siedel iterative method.

UNIT-V

Solution of Differential Equations: Euler's method, Picard's method, Fourth-order Ranga – Kutta method.

Referential Books:

1. Scarbourogh, "Numerical Analysis".
1. Gupta & Bose S.C. "Introduction to Numerical Analysis, "Academic Press, Kolkata, 3. S.S.Shashtri, " Numerical Analysis", PHI

Course Code	Course Name	L	T	P	C
BCA-5005	Minor Project	0	1	2	2

Evaluation will be based on Summer Training held after fourth semester and will be Conducted by the college committee only.

Course Code	Course Name	L	T	P	C
BCA-5006	Viva-Voice on Summer Training	0	0	2	1

The viva will be conducted based on summer training of four weeks after the end of fourth Semester and will be Conducted by the college committee only.

Course Code	Course Name	L	T	P	C
BCA-5002P	Computer Laboratory and Practical Work of Java Programming and Dynamic Webpage Design	0	0	6	3
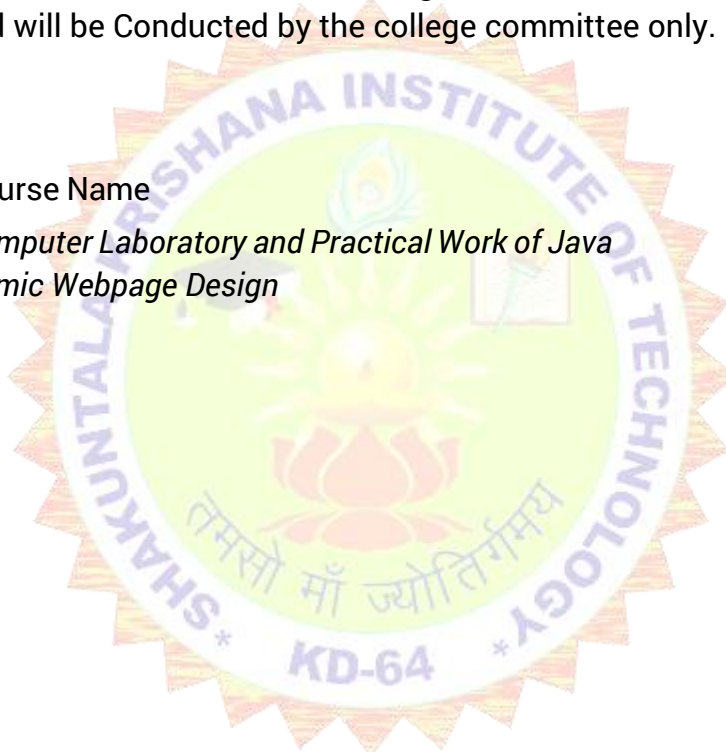
Practical will be based on Paper Java Programming & Dynamic Webpage Design : on Whole Syllabus