

Vidnyan Mahavidyalaya Sangola
Department of Computer Science
Teaching Plan

Teacher Name-Sargar B.R

Academic Year :2020-21

Class	Subject	December	Janewary
BCA-III	Advanced Java	Unit-1 Servlet • Introducing CGI • Introducing Servlet • Advantages of Servlet over CGI • Features of Servlet • Introducing Servlet API • Javax.servlet package • Javax.servlet.http package • Introducing Servlet • Advantages of Servlet over CGI • Features of Servlet • Servlet life Cycle • Init() • Service() • Destroy() • Working with GenericServlet and • HttpServlet • RequestDispatcher interface • Include() and forward() • Use of RequestDispatcher • Session in Servlet • Introducing session • Session tracking mechanism • Cookies • Advantages & disadvantages • use of cookies • Hidden form filed • Advantages & disadvantages • use of Hidden form filed • URL rewritten • disadvantages • use of URL rewritten • HttpSession • Advantages & disadvantages • use of URL HttpSession	Unit-II JSP • Introduction to JSP • Advantages of JSP over Servlet • JSP architecture • JSP life cycle • Implicit objects in JSP- request, response, out, page, pageContext, application, session, config, exception • JSP tag elements- Declarative, Declaration, scriplet, expression, action. 18 16 • Java Bean- Advantages & Disadvantages, • useBean tag- setProperty and getProperty • Bean In Jsp • JSTL core tag: General purpose tag, • conditional tag, networking tag • JSTL SQL tags • JSTL formatting tags • JSTL xml tags • Custom tag: empty tag, body content tag, • iteration tag, simple tag • Introducing internationalization & Java: local class, ResourceBundle class
B.Sc(E.C.S)-II	O.O.Ps Using Java	Unit-1 Features of Java :-Object Oriented Concepts, Platform Independencies, Secure over C++,Introduction to Java Environment, Writing a simple Java program, Class concept and modularity, Data members, methods, constructor syntax, "this"	Unit-2 Inheritance:-Super, Access/Scope specifies protected, Method overriding, Abstract keyword, Final keyword, Object class and methods in Object class Interfaces:-Comparison with inheritance, Interfaces and runtime polymorphism, Wrapper classes Exception handling:-Try catch finally-flow,

		References, Static and non-static data members and methods, Static block, Parameter passing in Java, Array, Garbage collection, Scope specifies public, private and package.	Throw and throws keywords, User defined exceptions
B.Sc-II	Data Structure	Unit-1 Introduction: Need of Data Structure, Types of Data Structure, ADT, Algorithm: Definition, characteristics, Space complexity, time complexity, Asymptotic notation (Big O, Omega Ω , theta Φ), introduction and control abstraction of algorithm design strategies Divide and Conquer, Greedy, Dynamic programming, Backtracking, Branch and Bound. Stack: Introduction to stack, Representation-static & dynamic, stack Operations, Application -infix to postfix & prefix, postfix evaluation, recursion, expression validity.	Queues: Introduction to Queue, Representation -static & dynamic, Operations, Circular queue, Deque, priority queues. Unit-2 Linked List:-Introduction to List, Implementation of List – static & dynamic representation, Types of Linked List, Operations on List, Applications of Linked List – polynomial manipulation

Class	Subject	Februuary	March
BCA-III	Advanced Java	Unit-III Hibernate • Introduction Hibernate(HB) • Architecture of HB • Application of HB: HB with annotation, • HB web application • Inheritance mapping: Table per Hierarchy • (TPH), TPH using annotation, Table Per • Concrete (TPC), TPC using annotation, • Table Per Subclass (TPS), • TPS using annotation. • Collection mapping: • Mapping list, one to many by list, • one to many by bag, • one to many by set, one to many by map.	Unit-IV Spring • Introduction to spring • Spring modules. • Spring application • Dependency injection: constructor Injection (CI), • CI dependant object, • CI with collection, • CI with map, • CI inheriting bean • Spring JDBC: JDBC template, • PreparedStatement, ResultSetExactor, • RowMapper, NamedParameter, • Simple JDBC template. • Spring with Hibernate

B.Sc(E.C.S)-II	O.O.Ps Using Java	Multithreading:- Concept, Life cycle of a thread, Thread class, Runnable interface, Methods in thread class-sleep, interrupt, join, priority etc., Sharing data, Synchronization, Usage of wait and notify() Unit 3 IO programming Concept, Binary and text IO, IO streams and Reader / Writers, Console I/O, Data input and data Output usage File I/O, Object Stream and Serializable interface	Event Handling:- Event Model, Event Classes, Event Listener Interfaces, Adapter and Inner Classes, Working with windows, graphics and text, using AWT controls, Layout managers and menus, handling Image, animation, sound and video, Java Applet. Swing Technology:- JTextBox, JRadio, JCheckBox, JComboBox, JList, JTree, JOptionPane, JScrollBar, etc. Collection framework:-Collection overview, Collection interfaces, Collection classes Vector, Array list, Hash map, Hash table, Tree map, Tree set, Hash set, Properties, Stack.
B.Sc-II	Data Structure	Trees: Concept & Terminologies, Binary tree, binary search tree, Representation – static &dynamic, Operations on BST – create, Insert, delete, traversals (preorder, inorder, postorder), counting leaf, non-leaf & total nodes, Unit-III Sorting: Bubble sort, Quick sort, Simple Insertion sort, Shell sort, Address calculation sort, Binary Search Tree, Heap Sort, Merge sort, Radix Sort.	Searching: Linear Search, Binary Search, Tree searching methods, Multiway search tree(B-tree, B+ tree), Height balance tree- AVL trees-Rotations. Hash function(open and close).

Teacher Name & Signature

Head of Department