SANATAN DHARMA COLLEGE, AMBALA CANTT

College with Potential for Excellence, UGC,New Delhi

NAAC Accredited Grade "A+" with CGPA 3.51 in 3rd cycle

ISO 9001:2015 & ISO 14001:2015 Certified

Department of Computer Science

Lesson Plan (Session 2022-2023)

Class: BCA   **Sem: VI**

Course Code:BCA-366   **Duration: 13 Weeks**

Nomenclature: Programming in Core Java   **Dates:** (Feb 2023-April 2023)

SYLLABUS
BCA-366: Programming in Core Java

Maximum Marks: 100   **External: 80**   **Minimum Pass Marks: 35**

Internal: 20   **Time: 3 hours**

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory,consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit. All questions will carry equal marks.

UNIT – I

Basic Principles of Object Oriented Programming, Introduction to Java, History and Features of Java, Java Virtual Machine (JVM), Java's Magic Bytecode; The Java Runtime Environment; Basic Language Elements: Lexical Tokens, Identifiers, Keywords, Literals, Comments, Primitive Data types, Operators, Assignments; Input/output in Java: Basics, I/O Classes, Reading Console Input, Control Structures in Java: Decision and Loop Control Statements

UNIT – II

Class and Object in Java: Defining Class in Java, Creating Objects of a Class, Defining Methods, Argument Passing Mechanism, Using Class and Objects, Constructors, Nested Class, Inner Class, Abstract Class, Dealing with Static Members; Array & String in Java: Defining an Array, Initializing & Accessing Array, Multi –Dimensional Array, Defining String, Operation on Array and String, Creating Strings using String Class, Creating Strings using StringBufferClass,; Polymorphism in Java: Basic Concept, Types, Overriding vs. Overloading, Implementation

UNIT – III

Extending Classes and Inheritance in Java: Benefits of Inheritance, Types of Inheritance in Java, Access Attributes, Inheriting Data Members and Methods, Role of Constructors in Inheritance, Use of "super"; Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages, Defining Package, Adding Classes from a Package to Your Program, CLASSPATH Setting for Packages, Import Package, Naming Convention For Packages , Access Protection in Packages, Standard Packages

UNIT – IV

Exception Handling in Java: The Idea behind Exception, Types of Exception, Use of try, catch, finally, throw, throws in Exception Handling, In-built and User Defined Exceptions, Checked and Un-Checked Exceptions, Catching more than one Exception; Applet in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag, Parameters to Applet, Embedding Applets in Web page, Creating Simple Applets; GUI Programming: Designing Graphical User Interfaces in Java, Components and Containers, Using Containers, Layout Managers, AWT Components, AWT Classes, AWT Controls,

TEXT BOOKS:
- Patrick Naughton and Herbert Schlitz,"JAVA-2 Complete Reference" ,TMH, New Delhi.
- Ivor Horton, "Beginning JAVA 2", WROX Publications, New Delhi.

REFERENCE BOOKS:
- "JAVA 2 UNLEASHED", Tech Media Publications, New Delhi.
- E Balaguruswamy,"Programming with Java", TMH, New Delhi.

Course title	Semester-VI Course- BCA-366: Programming in Core Java At the end of course student should be able to:
CO-1	Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
CO-2	Read and make elementary modifications to Java programs that solve real-world problems.
CO-3	Validate input in a Java program.
CO-4	Identify and fix defects and common security issues in code.
CO-5	Document a Java program using Javadoc.
CO-6	Use a version control system to track source code in a project.
CO-7	Identify classes, objects, members of a class and relationships among them needed for a specific problem
CO-8	Write Java application programs using OOP principles and proper program structuring
CO-9	Demonstrate the concepts of polymorphism and inheritance Demonstrate
CO-10	Write Java programs to implement error handling techniques using exception Handling

S.No	Instructional Technique	Assessment Methods (AM)
1	Chalk & Talk	Assignments
2	ICT tools	Quiz
3	Group discussions	Group Discussions
4	Industrial visit	Oral Tests
5	Case studies	Sessional
6	Small Projects	Presentations
7	Workshop	Seminar
8	Spoken Tutorials	University Exams
9	Flipped Class	
10.	E-Resources	

Detailed Lesson plan

Week	Date	BCA (6th Sem) (BCA-366)	Instructional technique	Assessment Method
1	**01.02.2023**	Basic Principles of Object Oriented Programming	1	1
	02.02.2023	-		
	03.02.2023	-		
	04.02.2023	-		
	05.02.2023	Sunday		
2	**06.02.2023**	Introduction to Java, History and Features of Java	1	1,2,3,4
	07.02.2023	Java Virtual Machine (JVM), Java's Magic Bytecode, The Java Runtime Environment	2-PPT/Projector	1,2,3,4
	08.02.2023	Basic Language Elements: Lexical Tokens, Identifiers, Keywords, Literals, Comments	2-PPT/Projector	1,2,3,4
	09.02.2023	-		
	10.02.2023	-		
	11.02.2023	-		
	12.02.2023	Sunday		
3	**13.02.2023**	Primitive Data types, Operators, Assignments	2-PPT/Projector	1,2,3,4
	14.02.2023	Input/output in Java: Basics, I/O Classes, Reading Console Input,	2-PPT/Projector	
	15.02.2023	Control Structures in Java: Decision and Loop Control Statements	2-PPT/Projector	1,2,3,4
	16.02.2023	-		
	17.02.2023	-		
	18.02.2023	Holiday		
	19.02.2023	Sunday		
4	**20.02.2023**	Revision		
	21.02.2023	Class and Object in Java: Defining Class in Java	1	1,2,3,4,6
	22.02.2023	Creating Objects of a Class, Defining Methods, Argument Passing Mechanism	8,10	1,2,3,4
	23.02.2023	-		
	24.02.2023	-	8,10	1,2

	25.02.2023	-		
	26.02.2023	Sunday		
5	27.02.2023	Class Test		
	28.02.2023	Using Class and Objects, Constructors, Nested Class,	8,10	4
	01.03.2023	Inner Class, Abstract Class, Dealing with Static Members	2-(PPT/Projector)	1,2,3,4
	02.03.2023	-		
	03.03.2023	-		
	04.03.2023	-		
	05.03.2023	Sunday		
6	06.03.2023 07.03.2023 08.03.2023 09.03.2023 10.03.2023 11.03.2023	Holi Holidays	--	
	12.03.2023	Sunday		
7	13.03.2023	Assignment-1		1
	14.03.2023	Array & String in Java: Defining an Array, Initializing Accessing Array	6	1,2,3,4
	15.03.2023	Multi –Dimensional Array, Defining String, Operation on Array and String	2-(PPT/Projector)	1,2,3,4
	16.03.2023	-		
	17.03.2023	-		
	18.03.2023	-		
	19.03.2023	Sunday		
8	20.03.2023	Creating Strings using String Class, Creating Strings using StringBufferClass	2-(PPT/Projector)	
	21.03.2023	Polymorphism in Java: Basic Concept, Types		1,2,3,4
	22.03.2023	Overriding vs. Overloading, Implementation	6	
	23.03.2023	Holiday		
	24.03.2023	-		
	25.03.2023	-		--
	26.03.2023	Sunday		
9	27.03.2023	Extending Classes and Inheritance in Java: Benefits of Inheritance, Types of Inheritance in Java	2-PPT/Projector	
	28.03.2023	Access Attributes, Inheriting Data Members and Methods, Role of	2-PPT/Projector	1,2,3,4

		Constructors in Inheritance		
	29.03.2023	Use of "super"; Packages & Interfaces: Basic Concepts of Package and Interface	1	1,2,3,4
	30.03.2023	Holiday		
	31.03.2023	-		
	01.04.2023	-		
	02.04.2023	Sunday		
10	**03.04.2023**	Sessional		5
	04.04.2023	Holiday		
	05.04.2023	Organizing Classes and Interfaces in Packages, Defining Package, Adding Classes from a Package to Your Program	2-PPT/Projector	1,2,3,4
	06.04.2023	-		
	07.04.2023	-		
	08.04.2023	-		
11	**09.04.2023**	Sunday		
	10.04.2023	CLASSPATH Setting for Packages, Import Package, Naming Convention For Packages , Access Protection in Packages, Standard Packages	2-(PPT/Projector)	1,2,3,4,6
	11.04.2023	Exception Handling in Java: The Idea behind Exception, Types of Exception	---	
	12.04.2023	Use of try, catch, finally, throw, throws in Exception Handling		
	13.04.2023	In-built and User Defined Exceptions, Checked and Un-Checked Exceptions	8,10,2	1,2
	14.04.2023	Holiday		
	15.04.2023	-		
	16.04.2023	Sunday		
12	**17.04.2023**	Assignment-2		
	18.04.2023	Applet in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag,	1	1,2
	19.04.2023	Parameters to Applet, Embedding Applets in Web page, Creating Simple Applets	2-(PPT/Projector)	1,2,3,4
	20.04.2023	-		
	21.04.2023	-		
	22.04.2023	-		
	23.04.2023	Sunday		

13	24.04.2023	GUI Programming: Designing Graphical User Interfaces in Java, Components and Containers	1	1,2,3,4
	25.04.2023	Using Containers, Layout Managers	2-(PPT/Projector)	1,2,3,4
	26.04.2023	AWT Components, AWT Classes, AWT Controls	2-(PPT/Projector)	1,2,3,4
	27.04.2023	-		
	28.04.2023	-		
	29.04.2023	-		
	30.04.2023	Sunday		

	Teacher Incharge	Head of the Department
Name	Harjinder Kaur	Dr. Girdhar Gopal
Sign with Date		