ARSD College, University of Delhi

Model Course Handout/Lesson Plan

Course Name : B.Sc. (Physics Sc. Computer Science)						
Semester	**Course Code**	**Course Title**	**Lecture (L)**	**Tutorial (T)**	**Practical (P)**	**Credit (C)**
IVth	**BSCS08B**	**Programming in Java**	2		2	4
Teacher/Instructor(s)		Jag Mohan				
Session		2021-22				

Course Objective:

This course introduces fundamental concepts of Object Oriented Programming using Java. Basic concepts such as data types, expressions, control structures, functions and arrays are covered. Students are exposed to extensive Java programming to solve practical programming problems

Course Learning Outcomes:

On successful completion of the course, students will be able to:
1. develop and execute Java programs using iteration and selection.
2. create classes and their objects.
3. implement OOPS concepts to solve problems using JAVA

Lesson Plan:

Unit No.	**Learning Objective**	**Lecture No.**	**Topics to be covered**
1.	Introduction to Java	1	Introduction to Java,Structure of a Java program
		2	Introduction to Java (contd..), JDK environment, structure of Java programs
		3	Data types
		4-9	variables, operators, expressions
		10	arrays
2.	Programming Fundamentals:	11-12	keywords,naming convention.
		13-14	decision making constructs.
		15-16	iteration, type casting

3.	Object Oriented Programming Overview	17-18	methods
		19-20	Abstraction, encapsulation, inheritance, polymorphism.
4.	Object Oriented Programming Overview, Strings:	21-22	Abstraction, encapsulation, inheritance, polymorphism.
		23-24	String class methods, string buffer methods
		25-26	Creating classes and objects,modifiers and access control
		27-28	constructors, implementation of single and multilevel inheritance
5.	Classes and Objects	29-30	implementation of polymorphism using overloading, overriding and dynamic method dispatch.

Evaluation Scheme:

No.	Component	Duration	Marks
1.	Internal Assessment ● Quiz ● Class Test ● Attendance ● Assignment		25
2.	End Semester Examination	2 hr	25

Details of the Course		
Unit	**Contents**	**Contact Hours**
1	**Introduction to Java:** Features of Java, JDK environment, structure of Java programs	6
2	**Programming Fundamentals**: Data types, variables, operators, expressions, arrays, keywords,naming convention, decision making constructs , iteration, type casting, methods.	6
3	**Strings:** String class methods, string buffer methods	
4	**Object Oriented Programming Overview:** Abstraction, encapsulation, inheritance, polymorphism.	6

5	**Classes and Objects:** Creating classes and objects, modifiers and access control, constructors,implementation of single and multilevel inheritance, implementation of polymorphism using overloading, overriding and dynamic method dispatch.	6
	Total	**30**

Suggested Books:

Sl. No.	Name of Authors/Books/Publishers	Year of Publication/Reprint
1.	Horstmann, C. S. (2017). Core Java - Vol. I – Fundamentals (10th Edition). Pearson	2017
2.	Balagurusamy, E. (2014). Programming with JAVA: A Primer (5th Edition). McGraw Hill Education (India) Private Limited.	2014
3	Schildt, H. (2018). Java: The Complete Reference (10th Edition). McGraw-Hill Education.	2018

Mode of Evaluation:	Internal Assessment / End Semester Exam

Progress Report:

Unit No.	Learning Objective	Lecture No.	Topics to be covered
1.	Introduction to Python	1	Introduction to Java,Structure of a Java program
		2	Introduction to Java (contd..), JDK environment, structure of Java programs
		3	Data types
		4-9	variables, operators, expressions
		10	arrays
2.	Functions, Creating Python Programs:	11-12	keywords,naming convention.
		13-14	decision making constructs.
		15-16	iteration, type casting
3.	Control Structures	17-18	methods
		19-20	Abstraction, encapsulation, inheritance, polymorphism.

4.	List and functions, Tuples, Dictionaries	21-22	Abstraction, encapsulation, inheritance, polymorphism.
		23-24	String class methods, string buffer methods
		25-26	Creating classes and objects,modifiers and access control
		27-28	constructors, implementation of single and multilevel inheritance
5.	Classes	29-30	implementation of polymorphism using overloading, overriding and dynamic method dispatch.