AMITY UNIVERSITY

UTTAR PRADESH

Course Title: Java Programming

Credit Units:

L	T	P/S	SW/ FW	No. of PSDA	TOTAL CREDIT UNITS
3	-	2	-		4

Course Level: UG
Course Code: IT201

Course Objectives: The objective is as follows:

- Imparting java programming skill to students
- knowledge of object-oriented paradigm in context of Java programming language
- Designing desktop applications using latest Java based API.

Pre-requisites: Object Oriented Programming Concepts

Course Contents/Syllabus:

	Weightage (%)
Module I	**20**
Descriptors/Topics • Concepts of OOP, Features of Java, • How Java is different from C++, • Data types, Control Statements, • Identifiers, arrays, Operators. • Inheritance: Multilevel hierarchy, • Method overriding, Abstract classes, Final classes, • String Class. • Difference between Applet and Application • Run time polymorphism • Lambda Expression	
Module II	**20**
Descriptors/Topics • Defining, Implementing, Applying Packages and Interfaces, • Importing Packages. • Fundamentals, Types, Uncaught Exceptions, • Multiple catch Clauses, • Java's Built-in Exception.	

Module III **Descriptors/Topics** • Creating, Implementing and Extending thread, • Thread priorities, • Synchronization suspending, resuming and stopping Threads, • Constructors, Various Types of String Operations • I/O using java.io package • Exploring Various Packages of Java: java.lang, java.util, java.util.regex etc	**20**
Module IV **Descriptors/Topics** • Event handling Mechanism, • Event Model, • Event Classes, • Sources of Events, • Event Listener Interfaces • AWT: Working with Windows, • AWT Controls, • Layout Managers	**20**
Module V • Descriptors/Topics • Java Annotations and its Types • Annotations Library Create custom annotations • Maven, Repositories, Plugin, Goal & Build lifecycle • GAV –Maven co-ordinates • Creating a pom.xml and Installing a core java application, Project Object Model	**20**

Course Learning Outcomes:

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

- Understand the concepts of java programming, compilation, debugging and testing.
- Design code segments involving control structures, iteration, interfaces, method calls and exceptions handling.
- Explain the concepts of multithreading and File Handling.
- Devise the concept of AWT and event handling in graphical user environment.
- Develop desktop applications involving GUI, annotations and Maven.

Pedagogy for Course Delivery:

The course would be covered under theory and laboratory. In addition to assigning project–based learning, early exposure to hands-on design to enhance the motivation among the students. It incorporates designing of problems, analysis of solutions submitted by the students groups and how learning objectives were achieved. The class will be taught using remote teaching methodology. Students' learning and assessment will be on the basis of four quadrants and flipped class method. E-content will be also provided to the students for better learning. Continuous evaluation of the students would be covered under quiz, viva etc..

Lab/ Practical's details, if applicable:

- Java programs using classes & objects and various control constructs such as loops etc, and data structures such as arrays, structures and functions

- Java programs for creating AWT applications for display of images and texts.
- Java programs related to Interfaces & Packages.
- Input/output and random files programs in Java.
- Java programs using Event driven concept.
- Java programs related to Graphical User Interface
- Java Programs Related to multithreading
- Creating a pom.xml and core java application using Mavon

Assessment/ Examination Scheme:

Theory L/T (%)	**Lab/Practical/Studio (%)**	**Total**
75%	25%	100%

Continuous Assessment/Internal Assessment					**End Term Examination**
Components (Drop down)	**Attendance**	**Class Test**	**HA**	**Quiz**	**EE**
Weightage (%)	5	15	10	10	60

Lab/ Practical/ Studio Assessment:

	Continuous Assessment/Internal Assessment				**End Term Examination**	
Components (Drop down	**Performance**	**Lab record**	Viva	Attendance	Practical	**Viva**
Weightage (%)	15	10	10	5	30	30

Text:

1. JAVA The Complete Reference by PATRICK NAUGHTON & HERBERT SCHILD, TMH.
2. Introduction to JAVA Programming a primar, Balaguruswamy.
3. K. Arnold and J. Gosling, “The JAVA programming language”, Pearson Education.
4. Timothy Budd, “Understanding Object-oriented programming with Java”, Pearson Education