3CA1354 Java Programming [3 0 2 4]

Course Learning Outcome:

After successful completion of this course, student will be able to

- build windows and console based robust applications
- apply object-oriented concepts to design and develop the system
- create documentation for java applications
- apply debugging techniques to solve errors

Syllabus:

Introduction to OOPs and Introduction to Java : Introduction To OOPs, Introduction to Java Programming with Grammar of Java , Byte code and JVM, Java Features, Java Tokens, Data Types, Variables, Operators, Type Conversion, Type Casting, Control Structure, types of Java Statements, Arrays, Strings and Vectors.

Classes and Objects in Java: Classes, Method Overloading, Constructors and Garbage Collector, Static Class Members, Recursion, Nested and Inner Classes, Method Overloading.

Inheritance, Packages and Interfaces: Types of Inheritance, Method Overriding, Abstract Classes and Methods Extending Interfaces, Packages: Java's Built-In Packages, Creating User-Defined Packages, Importing Packages, CLASSPATH.

Exception Handling in Java: Introduction, Basics of Exception Handling, Exception Handling mechanism, Runtime Exception, Checked versus Unchecked Exception, Multiple Catch Handlers, Nested Try and Catch Blocks.

Multithreading in Java: Thread Basics, Life Cycle of a Thread, Thread Priorities, Thread Exceptions, Synchronizations, Inter Thread Communication.

Files and Streams: Various types of Java Streams, Reading Console Inputs, Reading data from Command Line.

Applets and Graphics programming: Introduction, Applet versus Application Programs, Applet Class, Life Cycle of an Applet, Working with Graphic Class.

Event Handling: Introduction, The event delegation model, event classes, event listeners, event sources, listener interfaces.

Working with Layout: Layout and different Layout managers.

Introduction to Swing: What is Swing, Comparison of AWT component and Swing class, Study of various Swing classes.

JDBC Object: Concept of JDBC, JDBC driver types, JDBC packages, Brief overview of JDBC process, Database connection, Statement objects, ResultSet, transaction processing and metadata.

Self Study:

The self study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self study contents.

Laboratory Work:

At least 10 experiments are to be carried out from the above mentioned topics of the syllabus.

References:

1. Hari Mohan Pandey, Java Programming, Pearson Education.
2. Herbert Schildt, Java the Complete Reference, Tata McGraw Hill
3. Cay S. Horstmann, Java For Everyone, Wiley Publication
4. Farrell Joyce, Java for Beginners, Cengage Learning
5. C Xavier, Java Programming A Practical Approach, Tata McGraw Hill
6. Rajumar Buyya, S Thamarai Selvi, Xingchen Chu, Object Oriented Programming with Java, Tata McGraw Hill