CE251: JAVA PROGRAMMING

Credits and Hours:

Teaching Scheme	Theory	Practical	Tutorial	Total	Credit
Hours/week	3	4	-	7	**5**
Marks	100	100	-	200	

Pre-requisite courses:

- Basic programming skill.

Outline of the Course:

Sr. No.	Title of the unit	Minimum number of hours
1.	Fundamental of Programming in Java	02
2.	Class Fundamentals	04
3.	Array & String Handling	02
4.	Inheritance, Interfaces & Packages	06
5.	Exceptions Handling	05
6.	Multithreaded Programming	07
7.	File I/O and NIO	07
8.	Java Collection Frameworks and Generics	12
	Total hours (Theory) :	45
	Total hours (Lab) :	60
	Total hours :	105

Detailed Syllabus:

1.	**Fundamental of Programming in Java**	**02 Hours**	**04%**
	History of Java, Basic overview of java, Bytecode, JVM Buzz-words, Application and applets, Constants, Variables & Data Types, Comment, Operators, Control Flow		
2.	**Class Fundamentals**	**04 Hours**	**09%**
	General form of class, Creating class Overloading methods, Constructor, Declaring Object, Returning objects, using objects as parameters, Assigning object reference		

	variables, Introducing Access control , Understanding static Introducing final, The finalize ( ) method,The this keyword ,Garbage collection		
3.	**Array & String Handling**	**02 Hours**	**04%**
	Array basics, String Array, String class, StringBuffer and StringBuilder class, String Tokenizer Class and Object Class		
4.	**Inheritance, Interfaces & Packages**	**06 Hours**	**14%**
	Inheritance: Using super creating multilevel Hierarchy, method overriding, Dynamic method dispatch, abstract classes, Using final with Inheritance, Using Package: Defining package, Finding package and CLASSPATH, Access protection, Importing package, Interface: Defining Interface, Default Methods, Implementing Interface, Variables in Interface		
5.	**Exceptions Handling**	**05 Hours**	**11%**
	Exception types, Try …Catch…Finally, Throw, Throws, creating your own exception subclasses		
6.	**Multithreaded Programming**	**07 Hours**	**16%**
	Life cycle of thread, thread methods, thread priority, thread exceptions, Implementing Runnable interface, Synchronization and Concurrency		
7.	**File NIO**	**07 Hours**	**16%**
	File and Directories, Byte streams and character streams, Random Access Files,NIO: Meta Data File Attributes Buffers, Channels, Recursive Operation.		
8.	**Collection Framework and Generics**	**12 Hours**	**26%**
	Collections of objects, Collections: Sets, Sequence, Map, Understanding Hashing, Use of Array List & Vector, Generics Class, Lamda Expression, Functional Reference, Method Reference, Optional Classes, Processing data with streams		