

Java Programming

Paper Code: ETCS-307

Credits: 4

Total teaching weeks in semester: 14

Total lecture classes available: 42

S.No.	Contents	No. of Lectures
First Term		
Unit -I		
1.	Overview & characteristics of Java, Program Compilation and Execution Process, Organization of the Java Virtual Machine	2
2.	JVM as an interpreter and emulator, Instruction Set, class File Format, Verification, Class Area, Java Stack, Heap	4
3.	Garbage Collection, Security Promises of the JVM, Security Architecture and Security Policy	2
4.	Class loaders, security aspects, sandbox model	3
Unit -II		
5.	Java Fundamentals, Data Types & Literals Variables, Wrapper Classes, Arrays, Arithmetic Operators.	2
6.	Logical Operators, Control of Flow, Loops, Classes and Instances	2
7.	Class Member Modifiers Anonymous Inner Class Interfaces and Abstract Classes, Inheritance, throw and throws clauses	3
8.	User defined Exceptions, The String Buffer Class,tokenizer	2
9.	Applets, Life cycle of applet Security concerns.	2
Second Term		
Unit -III		
10.	Threads: Creating Threads, Thread Priority, Blocked States, Extending Thread Class, Runnable Interface, Starting Threads, Thread Synchronization, Synchronize Threads, Sync Code Block	3
11.	Thread Communication, wait, notify and notify all. AWT Components, Component Class, Container Class, Layout Manager Interface Default Layouts, Insets and Dimensions	3
12.	Border Layout, Flow Layout, Grid Layout, Card Layout, Grid Bag Layout AWT Events, Event Models, Listeners	2

13.	Class Listener, Adapters, Action Event Methods, Focus Event Key Event, Mouse Events, Window Event	2
Unit -IV		
14.	Input/ Output Stream, Stream Filters, Buffered Streams	2
15.	Data input and Output Stream, Print Stream Random Access File, JDBC (Database connectivity with MS-Access, Oracle, MS-SQL Server), Object serialization, Sockets, development of client Server applications	4
16.	Design of multithreaded server. Remote Method invocation, Java Native interfaces, Development of a JNI based application	2
17.	Collection API Interfaces, Vector, stack, Hashtable classes, enumerations, set, List, Map, Iterators.	2

Text Books:

- [T1] Patrick Naughton and Herbertz Schidt, "Java-2 the complete Reference", TMH
[T2] Sierra & bates, "Head First Java", O'Reilly

Reference Books:

- [R1] E. Balaguruswamy, "Programming with Java", TMH
[R2] Horstmann, "Computing Concepts with Java 2 Essentials", John Wiley.
[R3] Decker & Hirshfield, "Programming.Java", Vikas Publication.