



राष्ट्रीय प्रौद्योगिकी संस्थान जमशेदपुर NATIONAL INSTITUTE OF TECHNOLOGY JAMSHEDPUR

(An Institution of National Importance under MHRD, Government of India)

Department of Computer Applications

Autumn Semester 2020-21

Course File

Course Code	: CA3305
Course Title	: Java Programming
Semester	: MCA III Semester
Faculty In-charge	: Dr. Alekha Kumar Mishra
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Contact number	: 8249803116

Course Description: This course provides an insight into Java programming. It builds on the skills gained by students in Java Fundamentals or Java Foundations to help advance Java programming skills. The course covers a wide varieties of Java concepts starting from core java to advance java concepts like Swing, JDBC, Java Beans and Java Servlets. Students will design object-oriented applications with Java and will create Java programs using hands-on / engaging activities.

Course Objectives:

To understand the core language features of Java and its Application Programming Interfaces (API) for implementing threads, exceptions, database connections, file management, Lambda expressions and development of dynamic web applications, GUI , servlets and Java server pages.

Course Outcomes:

After successfully completing the course the student should be able to

- i) Implement Java applications to solve real world problems
- ii) Design and build multi-threaded Java applications
- iii) Design, Develop and Deploy dynamic web applications using JavaFX, servlets and Java server pages

Text / Reference Books:

Herbert Schildt , The Complete Reference -Java, Tata McGraw-Hill publisher, 10th Edition, 2017

Y. Daniel Liang, Introduction to Java programming-comprehensive version-11th Edition, Pearson publisher, 2017

Paul J. Deitel, Harvey Deitel ,Java SE8 for Programmers (Deitel Developer Series) Prentice Hall publisher, 3rd Edition, 2014

Margaret Levine Young, “The Complete Reference Internet”, TMH

Naughton, Schildt, “The Complete Reference JAVA2”, TMH

Dustin R. Callway, “Inside Servlets”, Addison Wesley

Course Plan:

Lecture – 1	Introduction to course; Introduction to Java; Differences between C++ and java; Hello World Application
Lecture – 2	Data Types; Variables; Keywords; Control Statements; Arrays
Lecture – 3	Classes; Objects; Methods; References; Parameterized Methods; Return Values
Lecture – 4-5	Applets; Event Handling; AWT
Lecture – 6	Overloading Constructors; Objects as parameters; Returning Objects
Lecture – 7	Static; final; Nested and Inner Classes; Command line args; Variable length args;
Lecture – 8	Overloading var arg methods; var args and ambiguity;
Lecture – 9-10	Inheritance
Lecture – 11	Overriding(2); Abstract Classes; final with inheritance; Object class
Lecture – 12-13	Packages; Importing packages; Interfaces; Interface Implementation
Lecture – 14-15	Exception Handling
Lecture – 16-18	Multi-threading
Lecture – 19	Text Wrapper and String class
Lectures – 20-21	Collection Interfaces and Collection Classes; ArrayList, Map
Lectures – 22-23	Iterator, HashMap
Lecture – 24	AWT hierarchy
Lecture – 25-26	Java - Swing
Lecture – 27-28	Swing Components
Lecture – 29-30	Multiple Layout Manager
Lectures – 31-32	Introduction to Java Beans; BDK and JAR files
Lectures – 33-34	Introspection; Java Beans API; Building a simple Bean; Session Beans; Entity Beans
Lectures – 35-36	Introduction to EJB; Introduction to RMI; Simple Client / Server Application
Lectures– 37-39	MVC
Lecture – 40 onward	Mini project demonstration and evaluation

Evaluation Scheme:

S.No.	Evaluation Component	Weightage	Nature of Component
1	Mid-term Examination	30%	Online mode
2	End-term Examination	40%	Online mode
3	Teacher's Assessment	30%	Assignment(s) , Mini project, Quiz & Attendance.

Consultation Hours: Mon- 1 to 2 PM ,

Tue, Thu, Fri - 3 to 4 PM.

Dr. Alekha Kumar Mishra.