

Course Name	IBM CE – Introduction to Object -Oriented Programming using Java
Course Code	RPROOPJFN
Course Duration	50 Hours
About the Technology	<p>Java technology is both a programming language and a platform.</p> <p>The <i>Java programming language</i> is a high-level, object-oriented language. Java programs are both <i>compiled</i> and <i>interpreted</i>. Compilation translates Java code into an intermediate language called Java <i>bytecode</i>. Bytecode is in turn parsed and run (interpreted) by the Java Virtual Machine (JVM) — a translator between the language and the underlying operating system and hardware. A compiled Java program can run on any system that has a version of the JVM.</p> <p>The <i>Java platform</i> is a software-only platform that can run on top of most hardware platforms. It consists of the JVM and the Java API — a large collection of ready-made components (<i>classes</i>) that ease application development and deployment. The Java API spans everything from basic objects, to networking and security, to XML generation and web services. It is grouped into libraries — known as <i>packages</i> — of related classes and interfaces.</p>
About the course	<p>The course begins with an introduction to the Java programming language and a review of the principles of object-oriented (OO) development before focusing on how to create object-oriented applications in Java. This course includes topics such as recognizing Java constructs that enable object-orientation. The course provides you with an overview of the Java language syntax, including packages, classes, methods, variables, conditional statements, and control flow. You then learn about the role of inheritance and interfaces in Java, how to create and handle exceptions, and how to refactor code. In addition, this course covers various new features of Java SE 5 and Java SE 6, such as generics, autoboxing, and annotations. You also learn about the different Java application programming interfaces (APIs), focusing on the APIs most commonly used in real-world Java applications such as Collections, Input/Output (I/O), Threads, and other utility classes.</p>
Audience	<p>This course is designed for people with little or no Java programming experience.</p> <p>Students of</p> <ul style="list-style-type: none"> – Engineering (CS, IT, ECE, EEE)- Semester 5 – MCA -Semester 1 – BSc, BA -2nd Year
Pre-Requisites	Some programming experience and familiarity with OO programming.
Contents	– State the advantages of an object-oriented approach to

software development

- Describe essential object-oriented concepts and terminology
- Describe the fundamentals of object-oriented programming
- Create Java classes that implement an object-oriented design
- Apply Java language constructs that enable and enforce OO-related concepts such as data encapsulation, strict typing and type conversion, inheritance, and polymorphism
- Use Java syntax to develop applications in Java
- Use inheritance and interfaces in Java applications
- Refactor Java code
- Describe and use some of the important API classes and interfaces available in Java, including:
 - o Primitive wrapper classes
 - o Classes in the Collections Framework
 - o Utility classes
 - o I/O classes
 - o Threads
 - o Exceptions
- Use the Java development tools in Eclipse V3.5
- Debug Java programs
- Describe Java EE component model and its use in building server-side applications
- Develop, debug, and test server-side applications
- Develop and test servlets
- Develop and test JSP pages
- Learn how to use JSPs and servlets in accordance with the Model/View/Controller(MVC) programming model
- Develop, test, and use JSP custom tags

Applicable IBM Certification	-
Follow on Courses	<ul style="list-style-type: none">- IBM CE - Enterprise Applications Development using Rational Application Developer- IBM CE - Enterprise Applications for Cloud Environment using IBM Rational Application Developer & IBM SmartCloud- IBM CE - Fundamentals of Software Testing with IBM Rational Tools- IBM CE - Enterprise Mobile Application Development and Deployment using IBM Worklight- IBM CE - Fundamentals of Embedded Software development using IBM Rational Rhapsody (Java)