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| **Institute / School Name** | Chitkara University Institute of Engineering and Technology | | |
| **Program Name** | BE | | |
| **Course Code** | CSL5303 | | |
| **Course Name** | JAVA Programming | | |
| **Lecture / Tutorial (per week)** | 5-0-0 | **Course Credits: 5** |  |
| **Semester/Session** | 5thSem/2018 | | |
| **Course Coordinator Name** | Supriya | | |

1. **Objectives of the Course**

* To apply the concepts of object oriented paradigm to analyze real life problems
* To develop efficient solutions for logical problems using JAVA language.
* Exercise and reinforce prior programming knowledge to effectively code standard problem.
* To identify and remove bugs in a JAVA program.

1. **Course Learning Outcomes**

**CLO1** To develop and apply knowledge of object oriented techniques and methodologies using Java.

**CLO2** To gain experience in the design and development of desktop applications using Java.

**CLO3** To gain experience in designing parallel applications using multithreading concept of Java.

**CLO4** To gain experience in using database as the back end tool in Java applications.

1. **Text Book:**

The Complete Reference Java 2 by Herbert Schildt 9th Edition.

1. **Recommended Books:**

# RB1: OCA Java SE 8 Programmer I Study Guide (Exam 1Z0-808) (Oracle Press) by [Edward G. Finegan](http://www.amazon.in/s/ref=dp_byline_sr_book_1?ie=UTF8&field-author=Edward+G.+Finegan&search-alias=stripbooks), [Robert Liguori](http://www.amazon.in/Robert-Liguori/e/B002BLFHUO/ref=dp_byline_cont_book_2).

# RB2: OCA/OCP Java SE 7 Programmer I & II Study Guide (Exams 1Z0-803 & 1Z0-804) by [Kathy Sierra](http://www.amazon.in/Kathy-Sierra/e/B001H6U55G/ref=dp_byline_cont_book_1)

1. **Other readings and relevant websites**

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| **S.No** | **Link of Journals, Magazines, websites and Research Papers** |
|  | http://www.w3schools.com/ |
|  | http://www.javatpoint.com/java |
|  | http://www.nptelvideos.com/java |

**6. Course Plan**

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| **Lecture Number** | **Topics** |
| 1-3 | Java Introduction, History and goals of Java, Fundamentals of OOPs, Overview of JDK, JVM, Garbage Collection, Working with Java Data Types, Using Operators |
| 4-8 | Decision Constructs, Using Loop Constructs, Creating and Using Arrays (1D, 2D, Multidimensional) Jagged Arrays, Command Line Arguments. Practice Problems |
| 9-12 | Strings: Introduction, Immutable String, Methods of String class, StringBuffer class & StringBuilder class, toString method, StringTokenizer class. Practice Problems |
| 13-16 | Classes, objects and methods: defining a class, Access Control, Method overloading, constructors, constructor overloading, use of this and static. Practice Problems |
| 17-21 | Working with Inheritance: Inheritance Basics & Types, Using super, Method Overriding, Dynamic method dispatch, final keyword. Practice Problems |
| 22-26 | Abstract Methods & Classes, Packages & Interfaces. Practice Problems |
| 27-28 | Online Practice Test (Hacker Rank) |
| 29-31 | Exception Handling: Exception handling fundamentals, Exception types, try and catch, multiple catch clauses, nested try, throw, throws and finally, Creating custom Exception. Practice problems. |
| 32-36 | IO Streams: Stream Classes: Byte Streams, Character Streams, StreamTokenizer. Practice Problems |
| 37-40 | Problem Solving |
| **ST-I (Syllabus covered from 1-40 lectures)** | |
| 41-50 | Collections Framework: |
| 51-55 | Multithreading: Java thread model, main thread, creating thread by implementing Runnable and extending thread class, creating multiple threads, using isAlive() and join(), thread priorities, Synchronization. |
| 66-70 | Problem Solving |
| **ST-II (Syllabus covered from 41-70 lectures)** | |
| 71-73 | JDBC Connectivity |
| 74-75 | Problem Solving |
| **ST-III (Syllabus covered from 71-75 lectures)** | |

6. **Evaluation Scheme:**

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| Component 2\* | Sessional Tests (STs)\* | 40 |
| Component 3\*\* | End Term Examination\*\* | 60 |
|  | Total | 100 |

**\*** There are three Sessional Tests (STs) for all theory papers. The average of best two is considered.

**\*\*** The End Term Comprehensive examination will be held at the end of semester. The mandatory requirement of 75% attendance in all theory classes is to be met for being eligible to appear in this component.

**7. Syllabus with weightage**

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| **Contents** | **Lectures** | **Weightage** |
| OOPS, Java Introduction & Language Fundamentals | 9 | 5% |
| Introduction to Java API, Strings | 4 | 5% |
| Inheritance & Polymorphism | 5 | 10% |
| Abstract Class , Interfaces & Exception Handling | 5 | 10% |
| IO Streams | 4 | 5% |
| Collection Framework & Generics In Java | 6 | 15% |
| Multi-threading | 4 | 10% |
| JAVA 8(Default and Static methods in Interface) | 2 | 5% |
| JDBC Connectivity | 3 | 5% |

**This Document is approved by:**

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| **Designation** | **Name** | **Signature** |
| Course Coordinator | Supriya |  |
| Deputy Dean | Er. MeenuKhurana |  |
| Date |  | |