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| **NAME OF DEPARTMENT:** | | | | | | | | | | | | | | | | | | | School of Computing | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Subject Name:** | | | | | | | | | Java Programming | | | | | | | | | | | | | | | | | | | | | | | | | **Subject Code:** | | | | | | | | TBC 301 | | |
|  | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | |  | | |
| **Course Name:** | | | | | | | | | Bachelor of Computer Applications (BCA) | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | |  | | |
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| **1** | **Contact Hours:** | | | | | | | | | | | 45 | | | |  | | | | | | | | | | | | | | | | | | | **L** | | 3 | | | **T** | |  | **P** | 0 | |
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| **2** | **Examination Duration(Hrs):** | | | | | | | | | | | | | | | | | | | | |  | **Theory** | | | | | 0 | 3 |  | **Practical** | | | | | 0 | | 0 | |  | | | | |
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| **3** | **Relative Weightage:** | | | | | | | | | | | | |  | | | | | **CWE:** | | | | | | | 25 | | **MTE:** | | | 25 | | **ETE:** | | | | 50 | | | |  | | | |
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| **4** | **Credits:** | | | | | | 0 | | | 3 | |  | | | | | | | | | | | | |  | | |  | | |  | |  | | | |  | | | |  | | | |
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| **5** | **Semester:** | | | | | | | \* | | | |  | | |  | | |  | | |  | | |  | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | **Autumn** | | | | | | | **Spring** | | | | | | | **Both** | | | | | | |  | | | | | | | | | | | | | | | | | |
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| **6** | **Pre-Requisite:** | | | | | | | | | | | **Knowledge of OOPS and C++** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **7** | **Subject Area:** | | | | | | | | | | | **Programming** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **8** | **Objective:** | | | | | | | | | | **To familiarize students with Programming in JAVA.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **9** | **Learning Outcome:** | | | | | | | | | | | | | | A student who successfully fulfills the course requirements will be able to:   1. Implement Object Oriented Programming Concepts 2. Use and create packages and interfaces in a Java program 3. Use graphical user interface in Java programs 4. Create Applets 5. Implement exception handling in Java | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **10** | | **Details of the Course:** | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Unit No.** | | | | **CONTENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **CONTACT HOURS** | | | | | |
| **1** | | | | **Core Java:** Introduction to JAVA, JDK,JRE,JVM , Excecution process, Operator, Data type, Control Statements.  **Classes and methods :** Variables, static and non static concept, Constructors, Abstract class ,Inner class, Wrapper classes, Overloading Overriding and Dynamic Binding, Inheritance, Package and Interface, String/String Buffer handling. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | |
| **2** | | | | **Exception Handling:** Exception and Errors, Exception Types, Exception Classes, Defining NewExceptions, Exception handling using “try” “catch” and “finally”, “throw” and “throws”  **Multithread programming:** Overview of threads, Thread creation, Implementing Runnable interface, Extending Thread class, Synchronization, Thread transitions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | |
| **3** | | | | **I/O:** File Handling **,** Character and Byte Stream, Object Serialization  **Networking:** URL, Socket, Port, TCP and UDP Programming.  **Introduction to RMI** **(Remote Method Invocation):** A simple client-server application using RMI. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | |
| **4** | | | | **Applet and Swings:** Java Applet, Lifecycle Introduction to AWT controls, Layout managers, Menus, Graphics, Event Handling using various controls Introduction to JAVA Swings,: Creating a java Swing application using Panes and Frames.  **Introduction to Collection Framework :** Vector, Array List, Map etc. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | |
| **5** | | | | **JDBC:** The connectivity Model, JDBC/ODBC Bridge, Connectivity to remote database, Statements, MetaData, ResultSet Metadata, and Navigating through multiple rows retrieved from a database.  **Introduction to Java Servlets and JSP:** Servlet basics, Servlet API basic, Life cycle of a Servlet, Running Servlet, HTTP Redirects, Cookies, Session Management, JSP life cycle and its tag. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | | |
|  | | | | **TOTAL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **45** | | | | | |
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| **11** | | **Suggested Books:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |
| **Sl. NO.** | | | **NAME OF AUTHORS/BOOKS/PUBLISHERS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **YEAR OF PUBLICATION/REPRINT** | | | | |
| **1** | | | Naughton, Schildt, “The Complete Reference JAVA2”, TMH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2012 | | | | |
| **2** | | | Margaret Levine Young, “The Complete Reference Internet”, TMH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2008 | | | | |
| **3** | | | Khalid Mughal, “A Programmer’s Guide to JAVA” | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2010 | | | | |
| **4** | | | Balagurusamy E, “Programming in JAVA”, TMH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2012 | | | | |
| **5** | | | Josef O’Neil “Teach Yourself JAVA” | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2005 | | | | |