# C.U.SHAH UNIVERSITY – WADHWANCITY

**FACULTY OF TECHNOLOGY AND ENGINEERING**
**DEPARTMENT OF COMPUTER ENGINEERING**
**B. TECH. SEMESTER: - IV**

**SUBJECT NAME: - Object oriented Programming with Java(OPJ) SUBJECT CODE: - 4TE04OPJ1**

**Teaching & Evaluation Scheme:-**

| Subject Code | Subject Name | Teaching Scheme (Hours) | | | | Credits | Evaluation Scheme | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Theory | | | | Practical (Marks) | | | |
| | | | | | | | Sessional Exam | | University Exam | | Internal | | University | Total |
| | | Th | Tu | Pr | Total | | Marks | Hours | Marks | Hours | Pr/Viva | TW | Pr | |
| 4TE04OPJ1 | Object Oriented Programming with Java | 3 | 0 | 2 | 5 | 4 | 30 | 1.5 | 70 | 3.0 | 30 | 20 | - | **150** |

**Objectives:**

- To provide understanding of Object Oriented Concept of JAVA Programming Language.
- To provide understanding of programming language to create Applications.

**Prerequisites:**

- Basic concepts of object oriented programming.

**Course outline:**

| Sr. No. | Course Contents | Total Hours |
|---|---|---|
| 1 | **Introduction to Java:** Basics of Java programming, Data types, Variables, Operators, Control structures including selection, Looping, Java methods, Overloading, Math class, Arrays in java. | 06 |
| 2 | **Objects and Classes:** Basics of objects and classes in java, Constructors, Finalizer, Visibility modifiers, Methods and objects. | 04 |
| 3 | **Inheritance and Polymorphism:** Inheritance in java, Super and sub class, Overriding, Object class, Polymorphism, Dynamic binding, Casting objects, Instance of operator, Abstract class, Interface in java, Package in java, UTIL package, Collection. | 12 |
| 4 | **Thread in java:** Thread life cycle and methods, Runnable interface, Thread synchronization. | 04 |

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|---|---|---|
| 5. | **Exception Handling**:<br>Exception handling with try-catch-finally, throws, thrown. | 02 |
| 6 | **Event Handling:**<br>Delegation Event Model, event Source, Event Class, Event Listener, Adapter Class, Inner Class, Anonymous Class. | 04 |
| 7 | **GUI Programming:**<br>Applet and its life cycle ,Panels, Frames, Layout Managers: Flow Layout, Border Layout, Grid Layout, GUI components like Buttons, Check Boxes, Radio Buttons, Labels, Text Fields, Text Areas, Combo Boxes, Lists, Scroll Bars, Sliders, Windows, Menus, Dialog Box. | 12 |

**Learning Outcomes:**

1. Students will be able to create different Application using JAVA.

**Books Recommended:**


1. Head First Java by **Katy Sierra & Bert Bates**, O'Reilly, 1st edition, 2004.
2. The Complete Reference, Java 2 by **Herbert Schild**, Tata Mc Grraw Hill, 7th edition, 2006.
3. Introduction to Java Programming Comprehensive Version by **Daniel Liang**, 9th edition, Pearson education.
4. Big Java by **Horstmann**, Wiley-India, 3rd edition, 2007.


**Web Resources:**

1. www.oracle.com/java