

# **RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL**

## **New Scheme Based On AICTE Flexible Curricula**

### **Computer Science and Engineering, VIII-Semester**

#### **Departmental Elective – CS802 (D) Object Oriented Software Engineering**

##### **Theory:**

1. Review of Object Oriented Concepts and Principles: The Object Oriented Paradigm, Basic Concepts, Software Development Life Cycle and Model Architectures.
2. Introduction to RUP: Basic Concepts, Symptoms in Software Development and their Root Causes, Best Practices of RUP, RUP software life cycle, 4+1 view model, Various Workflows.
3. Introduction to UML, Notations, Relationships, Stereotypes, Study of UML based tools Like Rational Rose, Poseidon, etc. Object Oriented Analysis: Conventional v/s OO analysis approach, Requirement analysis, Use case diagram,, Activity diagram, Analysis class Model.
4. Object Oriented Design: Conventional v/s OO design approach, Design of CRC cards, Class diagram Behavioral Modeling: Interaction Diagram, State chart Diagram, Implementation Diagram: Component and deployment Diagram. Illustrative Case Studies like ATM, Payroll, Course and Registration System.
5. Object Oriented Testing: Correctness and consistency of OOA & OOD models, Testing Strategies and test cases for OO software process, Project Management, Rational Tool Mentors. Introduction to Design Patterns.

##### **Text Books**

1. Grady Booch, James Rumbaugh, Ivar Jacobson, “The Unified Modelling Language User Guide”, Pearson Education
2. Stephen R. Schach, “Object Oriented Classical Software Engg.” Tata McGraw Hill, 2007.
3. Gamma G.Helm, Johnson, “Design Patterns, Elements of Reusable Object Oriented Software”, Addison Wesley.

##### **Reference Books**

1. Ivon Jacobson, “Object Oriented Software Engineering”, Addison Wesley. Booch G, “The Unfied Modelling User Guide”
2. Phillipe Kruchten, “The Rational Unified Process - An Introduction”, Pearson Ed. 2000.

3. Ivar J, Grady B, James R., "The Unified Software Development Process", Pearson Ed. 2003.
4. Timothy C. Lethbridge, Robert Laganriere, "Object Oriented Software Engg." , Tata McGraw Hill, 2004.
5. IBM Rational Modules