

**Rajiv Gandhi Proudlyogiki Vishwavidyalaya, Bhopal**  
**Syllabus VII Semester**  
**Bachelor of Engineering (Information Technology)**  
**Credit based Grading System (CBGS)**

**IT- 7002 – Object Oriented Analysis and Design**

**Unit I:** Overview of Object Oriented concepts: Objects and classes, abstraction, generalization and inheritance, encapsulation, multiple inheritance, aggregation abstraction classes, polymorphism, link and association, Need for object oriented approach

**Unit II:** System design life cycle, object oriented S/W development process model, Object Oriented Analysis, Object Modeling Technique (OMT): object model, function model, relationship among models, object diagrams, state diagrams, data flow diagrams, analysis.

**Unit III:** Object oriented Design: Overview of object design, Combination the models, Designing algorithms, design optimization, Implementation of control, Adjustment, Design of association, object representation, physical packaging, documenting design decision, comparison of use-case driven approach.

**Unit IV:** Translation Object Oriented design into implementation, Programming style, Documentation, characterization of object oriented languages, Comparison of object oriented language like C++, JAVA, object programming.

**Unit V:** Unified Modeling Language (UML): Class diagram sequence diagram Use case diagram, Collaboration, diagram, state, chart diagram, Activity diagram, component diagram, deployment diagram, Object oriented Database: Relational Vs .object oriented database, the architecture of object oriented database, query language for Object Oriented database.

**References:-**

Satzinger, Jackson and Burd, “Object oriented Analysis and design with the Unified Process”, CENGAGE Learning.  
Michael Blaha and J. Rumbaugh, “Object oriented Modeling and design with UML”, Pearson Education  
O’Docherty, “Object Oriented Analysis and Design Understanding, System Development with UML2.0”, Wiley India.

**List of Experiment:-**

- 1 Ddraw Object, state, Data flow Diagram of ATM.
- 2 Draw Object, state, Data flow Diagram of Telephone Call.
- 3 Draw Object, state, Data flow Diagram of Library Information System.
- 4 4 Draw Object, state, Data flow Diagram of Airline reservation System.
- 5 5 Draw Object, state, Data flow Diagram of Calculator.
- 6 Draw Object, state, Data flow Diagram of College Management system.
- 7 Draw Object, state, Data flow Diagram of Payroll System.
- 8 Draw Object, state, Data flow Diagram of Railway Reservation system.
- 9 Draw Object, state, Data flow Diagram of Online Sales.
- 10 Draw Object, state, Data flow Diagram of Examination result display System of a University.