

**Elective – I – 1- OOAD and UML**

**Unit I**

Complexity : The inherent complexity of software – The Structure of complex systems – Bringing order to chaos – On designing complex systems. – Categories of analysis and design methods. The Object Model : The evolution of object model – Elements of object model – Applying the object model – Foundations of the object model.

**Unit II**

Classes and Objects : The nature of an object – Relationship among objects – The nature of a class – Relationship among classes – The interplay of classes and objects - On building quality classes and objects – Invoking a method. Classification : The importance of proper classification – Identifying classes and objects – Key abstraction and mechanisms – A problem of classification.

**Unit III**

Structural Modeling: Introduction to UML – Classes – Relationships – Interfaces, Types and roles – Packages – Instances – Class diagram – Object diagram.

**Unit IV**

Behavioral Modeling: Use cases – Use case diagram – Interaction diagram – Activity diagrams – Events and signals – State machines - Processes and Threads – State chart Diagrams.

**Unit V**

Architectural Modeling: Components – Component Diagram - Deployment – Deployment Diagrams – Patterns and Frameworks - Systems and Models.

**Text Book(s)**

1. Grady Booch, “Object –Oriented analysis and Design with Applications”, Pearson Education– Ninth Indian Reprint 2002.
2. Grady Booch, James Rumbaugh and Ivar Jacobson, “The Unified Modeling Languages User Guide”, Addison Wesley – Fourth Indian Reprinting 2000.

**References**

1. Ali Bahrami, “Object Oriented Systems Development” Irwin-McGraw Hill, New Delhi, International editions, 1999.
2. Martin Fowler, Kendall Scott, “UML Distilled-Applying the standard Object Modeling Language”, Addition Wesley 1977.