

Hemchandracharya North Gujarat University, Patan
B.E. SEMESTER – IV (IT)

IT402: OBJECT ORIENTED ANALYSIS DESIGN AND UML

Teaching Scheme

Theory 4 hrs/week
Tutorial -
Practical 02 hrs/week
Total 06 hrs/week

Examination Scheme

Theory 100 Marks
Practical 25 Marks
Term Work 25 Marks
Total 150 Marks

1. **Introduction:**
About Object Orientated Technology, Development and OO Modeling History.
2. **Modeling Concepts:**
Modeling design Technique, Three models, Class Model, State model and Interaction model.
3. **Class Modeling:**
Object and class concepts, link and association, Generalization and Inheritance, Advanced class modeling-aggregation, Abstract class metadata, constraints.
4. **State Modeling:**
Event, state, Transition and conditions, state diagram, state diagram behavior, concurrency, Relation of Class and State models.
5. **Interaction Modeling:**
Use case Models, sequence models, activity models
6. **Analysis and Design:**
Development Life cycle, Development stages, Domain Analysis-Domain class model, domain state model, domain interaction model, Iterating and analysis. Application Interaction model, Application class model, Application state Model, Adding operation.
7. **System Design:**
Estimating Performance, Making a reuse plan, breaking system into subsystems ,identifying concurrency, allocation of subsystems, management of data storage, Handling Global resources, choosing a software control strategy, Handling boundary condition, common Architectural style.
8. **Class design:**
Overview of class design, designing algorithms recursing downward, refactoring, design optimization, Adjustment of Inheritance, Reification of Behavior.

Reference Books:

1. Oriented Modeling and Design with UML second edition by michael Blaha and James Rumbaugh