OBJECT ORIENTED ANALYSIS AND DESIGN [CT] - SYLLABUS

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Lecture : 3 Year : III
Tutorial : Part : II
Practical : 3/2

Course Objectives:

Explain and illustrate the fundamental concepts of object orientation
To introduce basic concepts of object-oriented analysis and design.
To study the main features of the software development process in an object-oriented framework.
To provide exposure to Visual Object Oriented Modeling languages, specifically UML (Unified Modeling Language).
Read, verify, and validate a given specification presented in UML
Given a system requirements description, produce a specification and implementation using UML

1. Object Oriented Fundamentals (10 hours)

1.1 Introduction,
1.2 Object Oriented Analysis and Design,
1.3 Defining Models,
1.4 Case Study,
1.5 Requirement Process,
1.6 Use Cases,
1.7 Object Oriented Development Cycle,
1.8 Overview of the Unified Modeling Language: UML Fundamentals and Notations.

2. Object Oriented Analysis (8 hours)

2.1 Building Conceptual Model,
2.2 Adding Associations and Attributes,

2.3 Representation of System Behavior.

3. Object Oriented Design (12 hours)

3.1 Analysis to Design,
3.2 Describing and Elaborating Use Cases,
3.3 Collaboration Diagram,
3.4 Objects and Patterns,
3.5 Determining Visibility,
3.6 Class Diagram.

4. Implementation (15 hours)

4.1 Programming and Development Process,
4.2 Mapping Design to Code,
4.3 Creating Class Definitions from Design Class Diagrams,
4.4 Creating Methods from Collaboration Diagram,
4.5 Updating Class Definitions,
4.6 Classes in Code,
4.7 Exception and Error Handling.

Practical:

Laboratory Exercise will include handling a object oriented design and modeling activity in a ACSE Environment. UML pattern design and modeling will be taken up with the help of UML Software.

Reference Books:

1. Larman, C., Applying UML and Patterns, Pearson Education Asia, 2008.
2. Stevens, P., Pooley, R., Using UML: Software Engineering with Objects and Components, Addision-Wesley, 2009.
3. Fowler, M., Scott, K., UML Distilled: Applying the Standard Object Modeling Language, Addison-Wesley, 2007.

4. Booch, G., Jacobson, I., Rumbaugh, J., The Unified Software Development Process, Addison-Wesely, 2009.
5. Booch, G., Jacobson, I., Rumbaugh, J., The Unified Modeling Language User Guide, Addison-Wesely, 2008.
6. Jacobson I., Object-Oriented Software Engineering – A Use Case Driven Approach, Addison-Wesely, 2009.

Evaluation Scheme:

The question will cover all the chapters of the syllabus. The evaluation scheme will be as indicated in the table below:

Unit	Hour	Marks Distribution
1	10	18
2	8	14
3	12	21
4	15	27
Total	45	80

*There can be minor deviations in the numbers