

OBJECT ORIENTED ANALYSIS AND DESIGN				
CLASS T.E. (INFORMATION TECHNOLOGY)			SEMESTER V	
HOURS PER WEEK	LECTURES	:	04	
	TUTORIALS	:	--	
	PRACTICALS	:	02	
			HOURS	MARKS
EVALUATION SYSTEM:	THEORY		3	100
	PRACTICAL		--	25
	ORAL		--	--
	TERM WORK		--	25

1. Review of Object Orientation

Class and objects, effect of inheritance on polymorphism and variable declarations, concepts that define object orientation.

2. Requirements

Developing requirements, reviewing requirements, managing requirements, Difficulties and risks in domain and requirement analysis, requirement documents, Case studies and discussion on the above topics.

3. Unified Modeling Language

Visual modeling with UML, Use case model- use case, actor, and roles, Modeling with classes – association, multiplicity, generalization, process of creating class diagram – difficulties and risks in creating class diagram.

Modeling interaction and behavior – interaction diagrams, state diagram and activity diagram, implementing classes based on interaction and state diagram- difficulties and risks in modeling interactions and behavior.

4. Architecting and Designing Software

The process of design, design principles, architectural patterns, design document, difficulties and risks in design.

Frameworks: reusable subsystem. Design patterns – Singleton, observer, adapter, Façade, proxy with examples

5. Implementation

Mapping models to Code, Mapping Object Model to Database Schema

6. Usability, Testing and Quality

Usability Principles- user interface design evaluating user interfaces

Testing and Quality – strategies, defects, test cases and test plan, inspections, quality assurance.

Text Books

1. Timothy C. Lethbridge, Robert Laganier “ Object-Oriented Software Engineering – A practical software development using UML and Java”, Tata McGraw-Hill, New Delhi.

2. Mike O'Docherty "Object-Oriented Analysis & design – understanding system development with UML 2.0", John Wiley.
3. Bernd Bruegge, "Object oriented software engineering", Second Edition, Pearson Education.
4. Stephan R. Schach, "Object oriented software engineering", Tata McGraw Hill.
5. Booch, Jacobson, Rumbaugh, "The UML user Guide", Pearson Education.
6. Ali Bahrami, "Object Oriented System Development", McGraw Hill.
7. David William Brown, "An Introduction to Object Oriented Analysis Objects and UML in Plain English", 2nd Edition, Wiley.

Term Work

Term work shall consist of at least 10 assignments/programming assignments and one written test.

Marks

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| 1. Attendance (Theory and Practical) | 05 Marks |
| 2. Laboratory work (Experiments and Journal) | 10 Marks |
| 3. Test (at least one) | 10 Marks |

The final certification and acceptance of TW ensures the satisfactory performance of laboratory Work and Minimum Passing in the term work.

Suggested Experiment List

1. At least one or two review assignments covering object oriented concepts.
2. A full-fledged mini project in which a student will design an application using OOAD case tool.
3. Assignments for the UML diagrams not used in the case study.
4. Hands on any one good Framework.