Code No. MCA 208 **L T C**
Paper: Object Oriented Analysis and Design **3 1 4**

INSTRUCTIONS TO PAPER SETTERS:

1. Question No. 1 should be compulsory and cover the entire syllabus. There should be 10 questions of short answer type of 2 marks each, having at least 2 questions from each unit.
2. Apart from Question No. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions to evaluate analytical/technical skills of candidate. However, student may be asked to attempt only 1 question from each unit. Each question should be 10 marks including subparts, if any.

OBJECTIVE: *The objective of the course is to give students a detailed understanding of processes and techniques for building large object-oriented software systems. To develop skills to evolve object-oriented systems from analysis, to design, to implement and to understand most of the major object-oriented technologies including basic OO concepts, processes, languages, databases, user interfaces, frameworks, and design patterns.*

PRE-REQUISITE:

- Software Engineering Concepts
- Object Oriented Programming Concepts

UNIT - I

Review of Object modeling, new paradigm, object oriented thinking-rethinking, Objects and Classes. Links and association, Generalization and specialization, Inheritance, Grouping concepts, aggregation, composition , abstracts classes, Polymorphism, Metadata, Constraints, Reuse.
Object Oriented Lifecycle Model, Introduction to Object Oriented Methodology, Overview of various object oriented methodologies- OOD, HOOD, OMT, CRC, OOA, OOSA, OOSE, OOSD, OORASS. **[No. of Hrs.: 12]**

UNIT - II

Architecture: Introduction, System development is model building, model architecture, requirements model, analysis model, the design model, the implementation model, test model.
Analysis: Introduction, the requirements model, the analysis model**.** **[No. of Hrs.: 09]**

UNIT - III

Construction: Introduction, the design model, block design, working with construction.
Testing: introduction, on testing, unit testing, integration testing, system testing, the testing process. **[No. of Hrs.: 09]**

UNIT - IV

Modeling with UML: Origin of UML, 4+1 view architecture of UML, Basic Building Blocks of UML, A Conceptual Model of UML, Basic Structural Modeling, UML Diagrams.
Case Studies. **[No. of Hrs.: 12]**

TEXT BOOKS:

1. Ivar Jacobson, "Object Oriented Software Engineering", Seventh Impression , Pearson, 2009.
2. Grady Booch, James Rumbaugh, Ivar Jacobson, "The UML User Guide", 2nd Edition, Pearson, 2008.

1. Stephen R. Scach, "Classical & Object Oriented Software Engineering with UML and Java", McGraw Hill, 1999.
2. Richard C. Lee, William M. Tepfenhard, "UML and C++, A Practical guide to object-oriented Development", Pearson.
3. Ivar Jacobson, Grady Booch & James Rumbaugh, "The Unified Software Development Process", Pearson, Fifth Impression, 2009.
4. Bernd Bruegge, "Object Oriented Software Engineering", Pearson, 2nd Ed., 2008.
5. James R. Rumbaugh , Michael R. Blaha , William Lorensen , Frederick Eddy ,William Premerlani , "Object-Oriented Modeling and Design ", 2nd Edition, PHI, 2007.
6. Mahesh P. Matha, "Object Oriented Analysis and Design using UML", PHI, 2008.
7. Michael R. Blaha, James R. Runbaugh, "Object Oriented Modeling and Design with UML", Pearson, 2nd Ed.