

**M.C.A. SEM – V**

**MCA – 51 : Object Oriented Analysis and Design with UML**

Teaching Scheme (per week)		Examination Scheme					
		INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	3	30	20	70	30	100	50

**UNIT I**

**(25%)**

**The object Oriented Paradigm, Management of Object Oriented Software Projects, Object Oriented Analysis:** Domain Analysis, Generic components of the OO Analysis Model, The OOA Process, The Object-Relationship Model, The Object-Behavior Model, **Object Oriented Design:** Design for Object Oriented Systems, The System Design Process, The Object Design Process, Design Patterns

**UNIT II**

**(25%)**

**Introduction to Web Engineering, Web Engineering team, Analysis for Web Application:** Requirements Analysis for Web Apps, The Analysis Model for Web Apps, The content Model, The Interaction Model, The Functional Model, The Configuration Model, Relationship-Navigation Analysis, **Design for Web Apps:** Design Issues for Web Engineering, The Web E-Design Pyramid, Web App Interface Design, Aesthetic Design, Content Design, Architecture Design, Navigation Design, Component level Design, Hypermedia Design Patterns, Object-Oriented Hypermedia Design Method

**UNIT III**

**(25%)**

**Introduction to UML, Classes, Advanced Classes, Relationships, Advanced Relationships, Interfaces, types, Roles, Packages, Class Diagram, Use-case Diagram**

**UNIT IV**

**(25%)**

**Interaction Diagram:** Sequence Diagram, Collaboration Diagram, Forward and Reverse Engineering, **Activity Diagram, State Chart Diagram, Patterns and Frameworks, Component Diagram, Deployment Diagram**

**Reference Books:**

1. Software Engineering By Roger S. Pressman Fifth Edition McGraw Hill Publications
2. Software Engineering By Roger S. Pressman Sixth Edition McGraw Hill Publications
3. The Unified Modeling Language User Guide By Booch, Rumbaugh, Jacobson Low Price Edition Publication

**Question Paper Scheme:**

Section – I

Section – II

Q.1 - Objective Type Unit I & II (11) Marks

Q.4 - Objective Type Unit III & IV (11) Marks

Q.2 - Unit-I **OR** Q.2 Unit-I (12) Marks

Q.5 - Unit-III **OR** Q.5 Unit-III (12) Marks

Q.3 - Unit-II **OR** Q.3 Unit-II (12) Marks

Q.6 - Unit-IV **OR** Q.6 Unit-IV (12) Marks

**Practical List:**

Generate Use-case Diagram, Class Diagram, Sequence Diagram, Collaboration Diagram, Activity Diagram, State Chart Diagram, Component Diagram, Deployment Diagram using any convenient CASE tool for the following systems.

1. ATM System
2. Access Control System
3. Payroll System
4. Student Registration System
5. Sage Home system