| Course Code | Course Name | Teaching Scheme (Hrs/week) | | | Credits Assigned | | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | L | T | P | Total |
| MCAL36 | **Unified Modelling Language Lab** | -- | -- | **2** | -- | -- | **1** | **1** |
| | | **Examination Scheme** | | | | | | |
| | | **Term Work** | | **Practical** | | **Oral** | | **Total** |
| | | **40** | | **10** | | **10** | | **60** |

| Pre-requisite Course Codes | | MCA11 |
|---|---|---|
| Course Outcomes | CO1 | Illustrate the use of UML using industrial CASE tool |
| | CO2 | Model of the Problem Space to construct Behavioral diagrams of UML |
| | CO3 | Construct object oriented diagram to model the design of software system. |
| | CO4 | Designing Business Case scenarios with the help of Structural Diagrams of using UML |

| Exp. No. | Experiment Details | Ref. | Marks |
|---|---|---|---|
| 1 | **Study of UML Overview-** The Nature and purpose of Models | 1,2 | 5 |
| 2 | **Implementing Use Case** -Capturing a System Requirement, Use Case Relationships, Use Case Overview Diagrams | 1,2 | 5 |
| 3 | **Implementing Activity Diagram** - Essentials, Activities and Actions, Decisions and Merges, Doing Multiple Tasks at the Same Time, Time Events, Objects, Sending and Receiving Signals, Starting an Activity, Ending Activities and Flows, Partitions , Managing Complex Activity Diagrams | 1,2 | 5 |
| 4 | **Implementing Class and Objects**- What is a Class, Getting Started with Classes in Visibility, Class State: Attributes, Class Behavior: Operations, Static Parts of Your Classes Class Relationships, Constraints, Abstract Classes, Interfaces, Templates, Object Instances, Links, Binding Class Templates | 1,2 | 5 |
| 5 | **Implementing Sequence Diagram** -  Participants, Time, Events, Signals, and Messages, Activation Bars, Nested Messages, Message Arrows | 1,2 | 5 |
| 6 | **Implementing Communication Diagram** Participants, Links, and Messages, Fleshing out an Interaction with a Communication Diagrams ,Communication Diagrams Versus Sequence Diagrams Building a Timing Diagram from a Sequence Diagram,Applying Participants to a Timing Diagram,States, Time, A Participant's State-Line, Events and Messages, Timing Constraints | 1,2 | 5 |
| 7 | **Implementing Component** A Basic Component in UML, | 1,2 | 5 |

| | | | |
|---|---|---|---|
| | Provided and Required Interfaces of a Component, Showing Components Working Together, Classes That Realize a Component, Ports and Internal Structure, Black-Box and White-Box Component Views | | |
| **8** | Implementing Deployment Diagram  Deploying a Simple System, Deployed Software: Artifacts, What Is a Node?, Hardware and Execution Environment Nodes, Communication Between Nodes, Deployment Specifications, When to Use a Deployment Diagram | **1,2** | **5** |
| | | **Total Marks** | **40** |

**References:**

[1] Grady Booch, James Rumbaugh, Ivar Jacobson "The Unified Modeling Language User Guide ",Addison Wesley (2005) Second edition
[2]  Kim Hamilton, **"**   Learning UML 2.0", Russell Miles, O'Reilly, second edition.