

MANGALORE UNIVERSITY

DEPARTMENT OF M.Sc. COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAH 302 :OBJECT-ORIENTED DATA MODELLING USING UML		
Hours/Week: 4		I.A. Marks: 30
Credits : 4		Exams. Marks: 70
<u>Course Outcomes:</u> CO1: To learn the Unified Modeling(UML) : Use Case diagrams, state diagrams, sequence diagrams, Communication diagrams and Activity diagrams CO2: To learn the concepts of objects, Classes, Methods CO3: To learn relation of a functional to object and dynamic models CO4: Basic principles of Software engineering: system analysis, design, testing and debugging CO5: To learn the concepts of abstract classes and interfaces CO6: To translate a design into an implementation		
	UNIT-I	12 Hours
The object Model, the evolution of object model, elements of object model, applying the object model, Classes and Objects, Relationships among objects, the nature of a class, relationship among classes, the interplay of classes and objects, on building quality classes and objects (selected topics from Grady Booch)		
	UNIT-II	12 Hours
Advanced object Modelling, Aggregation, Abstract Classes, Generalization as extension and Restriction, Multiple inheritance, Metadata, Candidate Keys, Constraints. Dynamic Modelling – events and states, operations nested state diagrams, Concurrency, Functional Modelling, Data Flow Diagrams, specifying operations, Constraints, Relation of Functional to object and Dynamic Models.		
	UNIT-III	12 Hours
Design Methodology, OMT as a software engineering methodology, Analysis, overview of analysis, Problem statement, overview of system Design, Breaking a system into subsystems, identifying Concurrency, Allocating subsystems to processes and tasks, Management of data stores, Handling global resources, choosing software control implementation, Handling Boundary condition, setting trade off priorities, Common architectural frameworks.		

	UNIT-IV	12 Hours
Object Design, Overview of object design, Combining the three models, Design algorithms, Design optimization, implementation of Control adjustment of inheritance, Design of Association, object representation, Physical packaging. Implementation, from Design to implementation object-oriented style, Reusability, extensibility, Robustness, Object Oriented languages, translating a Design into an implementation.		
REFERENCE BOOKS		
1. James Rumbaugh et.al, Object-Oriented Modelling and Design, PHI, 1991. 2. Grady Booch et.al, Object-Oriented Analysis and Design with Applications, 2007, Wesley, 3rd Edition		

