

**DEPARTMENT OF COMPUTER SCIENCE AND
APPLICATIONS SCHEME AND SYLLABUS OF
EXAMINATION FOR
Bachelor of (Honours/Honours with Research) in
Computer Science and Application
Duration 4Years(8Semesters) w.e.f. Academic
Session 2023-24**

Semester-III Scheme-D										
Course Code	Course Title	Credit	L: T:P: CH	Internal Marks		External Marks		Total Marks		
				Th	Pr	Th	Pr	Min	Max	
Major/Core Courses										
BCA23-CC301	Java OOP Foundations	4	3 :0:1:5	20	10	50	20	40	100	
BCA23-CC302	Linux and Shell Programming	4	3 :0:1:5	20	10	50	20	40	100	
BCA23-CC303	Data Base Technologies	4	3 :0:1:5	20	10	50	20	40	100	
Minor/Vocational Courses										
BCA23-M301	Basic Concepts of UML	4	3 :0:1:5	20	10	50	20	40	100	
Multidisciplinary Courses										
BCA23-MDC301	Basic Spreadsheet Tools	3	2 :0:1:4	15	05	35	20	30	75	
Ability Enhancement Courses										
	To be opted by students from the Central Pool	2	1 :0 :1:3	15	-	35	-	20	50	
Skill Enhancement Courses										
	To be opted by students from the Central Pool	3	2 :0:1:4	15	05	35	20	30	75	
	Total	22		29					550	

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BCA23-M301

Basic Concepts of UML

Max.Marks:100
Min.PassMarks:40

Internal Assessment Marks :30[Theory(20) + Practical(10)]
External End TermExamMarks:70[Theory(50)+Practical(20)]

Time: Theory(3Hours),Practical(3Hours)

Credit:4

Course Objectives:

1. Understand the basic concepts of UML.
2. Understand need of drawing models.
3. Understand interdependency of various models
4. Learn problem solving strategies
5. Learn UML tools.

Examiner Note: Examiner will set a total of NINE questions. Out of which FIRST question will be compulsory and the remaining EIGHT questions will be set from four units selecting two questions from each unit. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus. Candidate will have to attempt FIVE questions in all, selecting one question from each unit. Examination will be of three-hour duration.

Practicum will be evaluated by an external and an internal examiner. Examination will be of three-hour duration.

UNIT-I

Introduction: Object-Orientation, Modeling, Class Modeling: Object, Class, Value & Attributes, Operation & Method, Link & Association, , Qualified association, Multiplicity, Association end name, Ordering, , Generalization & Inheritance,.

UNIT-II

Class Modeling: Graphical Structure of Object & Class, Association, Aggregation, Abstract Class, Multiple Inheritance, Metadata. State Modeling: Events, States, Transition & Conditions, State Diagram, State Diagram. State Modeling: Nested State Diagram, Nested States.

UNIT-III

System Design: Overview, Estimating Performance, Making a reuse plan, Breaking a system into subsystems, Identifying Concurrency, Allocation of subsystem, Management of data storage, Handling global resources.

UNIT-IV

Interaction Modeling: Use Case Models: Actors, Use case, Use case diagram, Guidelines for use case diagram. Sequence Model: Scenarios, Sequence Diagrams, Guidelines for Sequence model. Activity Model: Activities, Branches, Initiation & Termination, Concurrent Activities,



UNIT-V(PRACTICUM)

In practical component the teacher concerned / instructor will ensure minimum 15 programs / case studies execution based on elements of UML along with their graphical syntax during the laboratory work.

Suggested Evaluation Methods:

Internal Assessment:	Theory	Practicum	EndTermExamination:
Class Participation	4	-	A three hour exam for both Theory and Practicum
Seminar/presentation/assignment/quiz/class test etc	-	-	
Seminar/Demonstration/Viva-voce/Lab records etc.:	-	5	
Mid-Term Exam	6	-	
Total	10	5	

Suggested Reading

1. Michael Blaha, James Rumbaugh, "Object Oriented Modeling and Design with UML", Pearson Education, 2011.
2. Daminni Grover, "Object Oriented Analysis and Design with UML", I. K International Publishing House, 1st edition, 2012.
3. Martin Fowler, "UML Distilled", Pearson Education Inc., 2018.
4. Mike O'Docherty, "Object Oriented Analysis And Design Understanding System Development with UML 2.0", Wiley Dreamtech, 2005.

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