



**Course Title: OBJECT ORIENTED ANALYSIS AND DESIGN**

**Course Level: UG**

**Course Credits:03**

**Course Code: CSIT304**

L	T	P/ S	SW/F W	TOTAL CREDIT UNITS
3	-	-	-	3

**Course Objectives:** The objective of the course is to

- Impart students a detailed understanding of processes and techniques for building large object-oriented software systems.
- 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-requisites:**

- Object Oriented Programming Concepts

**Course Contents/Syllabus:**

	Weightage (%)
<b>Module I : Introduction</b>	<b>20</b>
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.	
<b>Module II: Architecture</b>	<b>30</b>

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.	
<b>Module III : Construction</b>	<b>30</b>
Introduction, the design model, blocks design, working with construction.  Testing: introduction on testing, unit testing, integration testing, system testing, the testing process.	
<b>Module IV : Modeling with UML</b>	<b>20</b>
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.	

### Student Learning Outcomes:

After successful completion of this course, the student will be able to :

- Explain fundamental concepts of object-oriented analysis and design approach.
- Analyze information systems in real-world settings and to conduct methods such as interviews and observations.
- Construct various UML models (including use case diagrams, class diagrams, interaction diagrams, state chart diagrams, activity diagrams, and implementation diagrams) using the appropriate notation.
- Identify techniques aimed to achieve the objective and expected results of a systems development process.

### Pedagogy for Course Delivery:

Subject will be taught based on the class rooms lectures and case studies. Particular emphasis will be given on case studies.

### Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	Total
100	-	100

### Theory Assessment (L&T):

<b>Continuous Assessment/Internal Assessment</b>	<b>End Term Examination</b>
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<b>Components (Drop down)</b>	<b>A</b>	<b>Mid Term</b>	<b>Case Studies</b>	<b>Viva</b>	<b>EE</b>
<b>Weightage (%)</b>	5	10	10	5	70

***TEXT:***

- Ivar Jacobson, “Object Oriented Software Engineering”, Seventh Impression, Pearson, 2009.
- Grady Booch, James Rumbaugh, Ivar Jacobson, “The UML User Guide”, 2nd Edition, Pearson, 2008.
- Michael R. Blaha, James R. Runbaugh, “Object Oriented Modeling and Design with UML”, Prentice Hall, 2<sup>nd</sup> Edition, 2005

***REFERENCES:***

- Stephen R. Scach, “Classical & Object Oriented Software Engineering with UML and Java”, McGraw Hill, 1999.
- Ivar Jacobson, Grady Booch & James Rumbaugh, “The Unified Software Development Process”, Pearson, Fifth Impression, 2009.
- Bernd Bruegge, ”Object Oriented Software Engineering”, Pearson, 2nd Edition., 2008.
- James R. Rumbaugh , Michael R. Blaha , William Lorensen , Frederick Eddy ,William Premerlani , “Object-Oriented Modeling and Design “, 2nd Edition, PHI, 2007.
- Mahesh P. Matha, “Object Oriented Analysis and Design using UML”, PHI, 2008.