



SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)

(Established under section 3 of the UGC Act 1956)
Re - accredited by NAAC with 'A' Grade

Founder: Prof. Dr. S. B. Mujumdar, M.Sc., Ph.D. (Awarded Padma Bhushan and Padma Shri by President of India)
(Established under section 3 of the UGC Act 1956, by notification No.F.9-12/2001-U3 Government of India)

Sub Committee for Curriculum Development IT Specialization

Course Name: Object Oriented Analysis and Design

Course Code: T3114

(UG/PG): PG

Number of Credits: 4

Level:4

Learning Objective(s): Use of better models is essential for the development of quality software in time. Therefore, it is necessary to educate students about the software process models, software engineering methods and software tools. This course discuss and compare about the entire Software Development Life Cycle (UML & Rational) used for analysis, design, testing and implementation of software.

Pedagogy:

Class work discussion
Case studies
Video sessions
Lectures
Live projects

Pre-learning:

Basics of System analysis and Design.

Course Outline:

Sr No	Topic	Hours
1	Introduction to OOAD , Steps of OOA and OOD. Introduction to Modelling Techniques: Object, Dynamic and Functional Models. Best practices for Software Development, Tools associated with the best practices Navigating through the RUP. Rational Unified Process: Phases: Inception, Elaboration, Construction, Transition	2
2	Rational Unified Process: Disciplines Requirement Management, Analysis and Design, Implementation	2
	Testing, Change and Configuration Management, Project Management Environment	
3	Importance of a Use-Case driven and Architecture-Centric process Principles of Iterative development, Significance of the Iterative Development Process, Artifacts and Activities associated with process disciplines, Project Phases and Milestones, Project team roles and responsibilities, Implementing RUP	4
4	<u>REQUIREMENTS MANAGEMENT</u> Introduction to Use-Case Modeling, Analyze the Problem, Finding the root causes, Ambiguity, Understand Stakeholder Needs. Define the System: the vision, product features, and use case model. Find Actors and Use Cases, Manage System Scope, Refine the System Definition, Detail each Use Case ,Define Supplementary Specifications ,Manage Changing Requirements ,The Use Case Model using UML Relationships. Requirements Across the Product Lifecycle. Use Case Diagram, Interaction Diagrams(Sequence Diagram, Collaboration Diagram) Class Diagram State Diagram .	10
5	OO DESIGN Concepts, Principles and Methods, The Coad and Yourden Method, The jacobson Method, The Rumbaugh Method, The Wirfs-Brock Method, Mapping OOA to OOD	4
6	Overview of DESIGN PATTERNS: Creational, Structural, Behavioral Patterns.	6
7	Forward and Reverse Engineering: Forward Engineering: Generating Code from Design, Customizing Code Generation, Reverse Engineering: Generating Design from Code, Round Trip Engineering: Synchronizing Design and Code, Working with Model(.mdl) files, Using Frameworks, Web Publishing, Mapping Classes to Components.	2

8	Lab Work: At least 10 Sessions of 3 hours duration using Open source tools. Eclipse, Rational Rose could form the part of practical session. The sessions are based on class diagram, Object diagram, Package Diagram, Component Diagram, Deployment diagram, Use case diagram, communication diagram, sequence diagram, Activity diagram , State diagram and Modelling with Objects.	30
	Total	60



Books recommended:

1. Object Oriented Software Engineering by Jacobson
2. The Unified Modeling Language User Guide by Booch
3. UML Distilled – 2nd Edition by Fowler
4. Enterprise Modeling with UML by Marshall

Suggested Evaluation Methods:

Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered

Name of Member	Sachin Naik	Anagha Vaidya		
Designation	Assit. Professor	Assit.Professor		
Org. / Inst.	SICSR	SICSR		
Signature				

Name of the Expert:

Signature:

Date:

