SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Department of Information Technology			**LP: CS16502** **Rev. No:** 00 **Date:** 29.06.2018
B.E/B.Tech	: CS/IT (Autonomous)	Regulation: 2016	
Sub. Code / Sub. Name	: CS16502 / Object Oriented Analysis and Design		
Unit	: I		

Unit Syllabus: INTRODUCTION & INCEPTION

Object-Oriented Analysis and Design - Iterative, Evolutionary, and Agile : Unified Process, Iterative and Evolutionary Development, Waterfall Lifecycle, How to do Iterative and Evolutionary Analysis and Design, Agile Methods and Attitudes, Agile Modeling, Agile UP, UP Phases, UP Disciplines - Case Studies : The NextGen POS System, The Monopoly Game System - Inception is Not the Requirements Phase - Evolutionary Requirements - Use Cases – Relating Use Cases - Other Requirements

Objective:

This unit explains the basics of OO Analysis and Design skills.

Session No *	Topics to be covered	Ref	Teaching Aids
1	**Object-Oriented Analysis and Design:** Basics, Learning goals, Examples for various types of models	T1, Ch 1, pg(3-14)	BB/LCD
2	**Iterative, Evolutionary, and Agile :** Unified Process, Iterative and Evolutionary Development, Waterfall	T1, Ch 2, pg(17-27)	BB/LCD
3	**Iterative, Evolutionary, and Agile :** Agile Methods and Attitudes, Agile Modeling, Agile UP, UP Phases, UP Disciplines	T1, Ch 2, pg(27-39)	BB/LCD
4	**Case Studies :** The NextGen POS System, The Monopoly Game System	T1, Ch 3, pg(41-44)	BB/LCD
5	**Inception is Not the Requirements Phase:** What is inception? – How long is inception?	T1, Ch 4, pg(47-51)	BB/LCD
6	**Evolutionary Requirements:** Evolutionary vs. waterfall requirements – types and categories of requirements	T1, Ch 5, pg(53-59)	BB/LCD
7	**Use Cases, Relating Use Cases**: Introduction to usecases, Actors, Scenarios	T1, Ch 6, pg(61-64)	BB/LCD
8	**Use Cases, Relating Use Cases**: usecase model, Kinds of actors and usecases, Guidelines for naming actors and usecases	T1, Ch 6, pg(64-99)	BB/LCD
9	**Other Requirements**	T1, Ch 7, pg(101-119)	BB/LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 minutes

Sub. Code / Sub. Name : CS16502 / Object Oriented Analysis and Design

Unit : II

Unit Syllabus: ELABORATION – BASICS

Domain Models - System Sequence Diagrams - Operation Contracts - Logical Architecture and UML Package Diagrams - UML Interaction Diagrams - UML Class Diagrams - Designing for Visibility - Refactoring.

Objective:

This unit deals with the UML diagrams for Modeling.

Session No *	Topics to be covered	Ref	Teaching Aids
10	**Domain Models –** Finding conceptual classes and descriptive classes	T1, Ch 9, pg(131-149)	BB/LCD
11	**Domain Models –** Association and attributes	T1, Ch 9, pg(149-170)	BB/LCD
12	**System Sequence Diagrams –** Relationship between SSDs and use cases	T1, Ch 10, pg(173-180)	BB/LCD
13	**Operation Contracts –** OCL	T1, Ch 11, pg(181-194)	BB/LCD
14	**Logical Architecture and UML Package Diagrams –** Software architecture, Model – view separation	T1, Ch 13, pg(197-212)	BB/LCD
15	**UML Interaction Diagrams -** Sequence and communication diagram	T1, Ch 15, pg(221-247)	BB/LCD
16	**UML Class Diagrams -** Introduction, Notation, designing class diagram, Classifier, Operations and	T1, Ch 16, pg(249-260)	BB/LCD
17	**UML Class Diagrams -** Dependency and interfaces, Composition, Aggregation, Constraints, Association	T1, Ch 16, pg(260-270)	BB/LCD
18	**Designing for Visibility, Refactoring -** Types of visibility and examples	T1, Ch 19, pg(363-368)	BB/LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 mins

Sub. Code / Sub. Name : CS16502 / Object Oriented Analysis and Design

Unit : III

Unit syllabus: ELABORATION - DESIGN PATTERNS

GRASP: Designing Objects with Responsibilities, Polymorphism, Pure Fabrication - Object Design Examples with GRASP : What is a Use Case Realization, Use Case Realizations for the NextGen Iteration - Applying GoF Design Patterns : Adapter, Factory, Singleton (GoF), Strategy (GoF), Composite (GoF), Facade (GoF), Observer/Publish-Subscribe/Delegation Event Model.

Objective

In this unit, students will learn the design patterns

Session No *	Topics to be covered	Ref	Teaching Aids
19	**GRASP: Designing Objects with Responsibilities –** Creator, Information Expert, Low Coupling, High	T1, Ch 17, pg(271-290)	BB/LCD
20	**GRASP: Designing Objects with Responsibilities –** Creator, Information Expert	T1, Ch 17, pg(291-299)	BB/LCD
21	**GRASP: Designing Objects with Responsibilities –** Low Coupling, High Cohesion, Controller	T1, Ch 17, pg(299-318)	BB/LCD
22	**GRASP: Polymorphism, Pure Fabrication**	T1, Ch 25, pg(413-426)	BB/LCD
23	**Object Design Examples with GRASP: What is a Use Case Realization, Use Case Realizations for the**	T1, Ch 18, pg(321-349)	BB/LCD
24	**Applying GoF Design Patterns :** Adapter, Factory	T1, Ch 26, pg(435-442)	BB/LCD
25	**Applying GoF Design Patterns:** Singleton (GoF), Strategy (GoF).	T1, Ch 26, pg(442-452)	BB/LCD
26	**Applying GoF Design Patterns :** Composite (GoF), Facade (GoF)	T1, Ch 26, pg(452-463)	BB/LCD
27	**Applying GoF Design Patterns:** Observer/Publish-Subscribe/Delegation Event Model.	T1, Ch 26, pg(463-471)	BB/LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 mins

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Unit : IV

Unit syllabus: ELABORATION – DYNAMIC MODELING

UML Activity Diagrams and Modeling - UML State Machine Diagrams and Modeling - Domain Model Refinement - Logical Architecture Refinement - Designing a Persistence Framework with Patterns - UML Deployment and Component Diagrams

Objective

In this unit, students will learn the layered architecture

Session No *	Topics to be covered	Ref	Teaching Aids
28	**UML Activity Diagrams and Modeling**	T1, Ch 28, pg(477-483)	BB/LCD
29	**UML State Machine Diagrams and Modeling**	T1, Ch 29, pg(485-491)	BB/LCD
30	**Domain Model Refinement** – Finding conceptual class, class hierarchies, aggregation and composition	T1, Ch 31, pg(501-516)	BB/LCD
31	**Domain Model Refinement** – Aggregation and Composition	T1, Ch 31, pg(519-522)	BB/LCD
32	**Domain Model Refinement** – Association role names, qualified associations	T1, Ch 31, pg(522-526)	BB/LCD
33	**Logical Architecture Refinement –** Collaboration with the layers pattern, Model – View separation and upward	T1, Ch 34, pg(559-576)	BB/LCD
34	**Designing a Persistence Framework with Patterns**	T1, Ch 37, pg(621-649)	BB/LCD
35	**Designing a Persistence Framework with Patterns**	T1, Ch 37, pg(621-649)	BB/LCD
36	**UML Deployment and Component Diagrams**	T1, Ch 38, pg(651-653)	BB/LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 mins

Sub. Code / Sub. Name : CS16502 / Object Oriented Analysis and Design

Unit : V

Unit syllabus : OBJECT ORIENTED TESTING

Mapping design to code – Testing: Issues in OO Testing – Class Testing – OO Integration Testing – GUI Testing – OO System Testing.

Objective

- Learn to map, design to code
- Be exposed to the various testing techniques

Session No *	Topics to be covered	Ref	Teaching Aids
37	**Mapping design to code -** Creating methods, collection classes in code	T1, Ch 20, pg(369-380)	BB/LCD
38	**Mapping design to code –** exceptions and error handling	T1, Ch 20, pg(369-380)	BB/LCD
39	**Testing :** Issues in OO Testing – Units for OO Testing, implication of composition and encapsulation,	T2, Ch 16, pg(285-290)	BB/LCD
40	**Class Testing –** methods as units, pseudocode, classes as units	T2, Ch 17, pg(297-305)	BB/LCD
41	**OO Integration Testing –** MM – paths for OO software, framework	T2, Ch 18, pg(311-323)	BB/LCD
42	**OO Integration Testing –** framework	T2, Ch 13, pg(424-426)	BB/LCD
43	**GUI Testing –** Unit testing, Integration testing and System testing for Currency conversion program	T2, Ch 19, pg(327-330)	BB/LCD
44	**OO System Testing –** Currency convertor, UML based system testing	T2, Ch 19, pg(337-349)	BB/LCD
45	**OO System Testing –** State chart based system testing	T2, Ch 20, pg(337-349)	BB/LCD
Content beyond syllabus covered (if any):			

* Session duration: 50 mins

	Prepared by	Approved by
Signature	S. Uvarajan	29/6/18
Name	**Mr S Uvaraj Arutkumaran**	**Dr. V.Vidhya**
Designation	**Assistant Professor/IT**	**HOD Incharge/IT**
Date	29.06.2018	29.06.2018
Remarks *:		
Remarks *:		

* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD