



# **C.U.SHAH UNIVERSITY – WADHWANCITY**

## **FACULTY OF TECHNOLOGY AND ENGINEERING DEPARTMENT OF INFORMATION TECHNOLOGY**

### **B. TECH. SEMESTER: - IV**

**SUBJECT NAME: - System Analysis and Design & Unified Modelling Language (SAD)**

**SUBJECT CODE: - 4TE04SAD1**

### **Teaching & Evaluation Scheme:-**

Subject Code	Subject Name	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hours	Marks	Hours	Pr/Viva	TW	Pr	
4TE04SAD1	System Analysis and Design & Unified Modelling Language	3	0	2	5	4	30	1.5	70	3.0	30	20	-	150

### **Objectives:**

- To provide the understanding of the fundamentals of application development, where each application is considered as a system. This subject provides insight knowledge needed in order to conceptualize various functionalities of system before actual development of the system. This enables application developers to identify pros and cons of the application to be built.

### **Prerequisites:**

- General awareness of Computer Applications and various tools used for development.

### **Course outline:**

Sr. No.	Course Contents	Total Hours
1	<b>System Concepts:</b> Introduction to System, Characteristics & Elements of System, Major System concepts and Types of System, System Analysis, Role of System Analyst and Users, Information & Information System, Role of Business Information System in Organization.	06
2	<b>System Development Life Cycle (SDLC):</b> Requirement analysis and Determination, System Design Technique, System Development, System Testing, System Implementation and Evaluation.	06
3	<b>Structured System Analysis and Design Method:</b> Need of Structured Analysis and Design, System survey, Structured analysis,	06

	Structured design, Advantages of SSADM.	
4	<b>Input/Output Design:</b> Input - Data capture objectives, Data verification and validation, Interactive screen design. Output - Design principles of output, Output objectives.	04
5	<b>Fact Gathering Techniques:</b> Interviewing, Questionnaires, Record inspection, Observations.	04
6	<b>Testing and Implementation:</b> Various Testing and Implementation Methods.	06
7	<b>Introduction to UML:</b> What is UML?, Notation, Model Analysis and Design, Inception, Elaboration, Construction, Transition.	06
8	<b>UML Diagrams:</b> Use case diagram, Class diagram, Sequence diagram, State diagram, Activity diagram, Physical diagram	08

#### **Learning Outcomes:**

1. Students will be able to create conceptual models of various Systems.
2. Students will be able to use Software tools used for creating various diagrams.

#### **Books Recommended:**

1. "Analysis & Design of Information System" by **James A. Senn**, Tata Mc Graw-Hill, 2<sup>nd</sup> Edition, 1989.
2. "System Analysis & Design" by **S. Parthasarthy and B. W. Khalkar**, Master Ed. Cons., 1<sup>st</sup> Edition.
3. "Structured Analysis & Design" by **Yourdon E. and Constantine L.**, Yourdon Press New York, 1<sup>st</sup> Edition.
4. "Analysis & Design of Information System" by **V.Rajaraman**, PHI Publication.
5. UML Distilled by **Martin Fowler**, Pearson Edition.
6. The Unified Software Development Process by **Ivar Jacobson**, Pearson Edition.
7. The Unified Modelling Language by **Gredy Boods and James Rambaugh**, Pearson Edition.