



**C. U. SHAH UNIVERSITY**  
**Wadhwan City**

**FACULTY OF:** - Technology and Engineering  
**DEPARTMENT OF:** - Computer Engineering  
**SEMESTER:** - VII  
**CODE:** - 4TE07SOC1  
**NAME:** – Service Oriented Computing

**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		
4TE07SOC1	Service Oriented Computing	3	0	2	5	4	30	1.5	70	3.0	-	20	30	150	

**Objectives:**

The objectives of the course are:

- To enable students to gain the knowledge of service oriented architecture and related protocols.
- To enable students to develop real-time applications using web services.

**Prerequisites:**

- Basics concepts of Web Technology and programming language.

**Course outline:**

Sr. No.	Course Contents	Total Hrs.
1	<b>Introduction:</b> Fundamental SOA, Common characteristics of contemporary SOA, Common misperceptions about SOA, Common tangible benefits of SOA, Common pitfalls of adopting SOA, The Evolution of SOA, Services Life Cycle, Services Composition. Business-Driven SOA, SOA and Other Architectures, What Is a Service?, SOA Reference Architecture	06
2	<b>XML Technology:</b> XML Basics, XML namespace, DTD and Schema Validation.	06
3	<b>Web Services and Its Elements:</b> Web Services, Architecture of web service , SOAP (The Basic Structure of SOAP, SOAP Elements, SOAP Messaging Modes, SOAP Faults, SOAP over HTTP), WSDL (The Basic Structure of WSDL, WSDL Elements, WSDL Messaging Exchange Patterns, WSDL	08

	Implementation: The binding Element, The service and port Elements.), UDDI (UDDI Structures, UDDI Inquiry API, UDDI Publishing API)	
4	<b>Web Services and Contemporary SOA:</b> Message exchange patterns, Service, activity, Coordination, Atomic transactions, Business activities, Orchestration, Choreography.	4
5	<b>Enterprise Architecture:</b> Integration, Interoperation, J2EE and .NET Enterprise Architecture, Model Driven Architecture, Legacy System.	4
6	<b>Description Framework:</b> RDF, RDF Property and Resources, RDF BAG, SEQ, ALT, and Collection Elements, RDFS, OWL, OWL Elements	8
7	<b>J2EE Web Services API (JAX-WS and JAX-RS):</b> Creating a Simple Web Service and Clients with JAX-WS, What Are RESTful Web Services?, Creating a RESTful Root Resource Class, Developing RESTful Web Services with JAX-RS Overview of a JAX-RS Application.	05
8	<b>Execution Model:</b> Execution Models Messaging, CORBA, Peer to Peer Computing, Grid Computing, Jini.	04
	<b>Total</b>	<b>45</b>

### Learning Outcomes:

At the end of this module the student will be:

- Able to create Web Service Application using java.
- Able to validate XML.

### Books Recommended:

1. Service-Oriented Architecture: Concepts, Technology, and Design, **Thomas Erl**, Pearson Education, 2005.
2. Service Oriented Architecture A Field Guide to Integrating XML and Web Services, **Thomas Erl**, Prentice Hall.
3. Service-Oriented Computing Semantics, Processes, Agents, **Munindar P. Singh, Michael N. Huhns**; Wiley India
4. SOA using Java Web Services, **Mark D Hansen**, Prentice Hall Publication.
5. Applied SOA, **Michael Rosen**, Wiley publication.
6. Developing Java Web Services, **Ramesh Nagappan, Robert Skoczylas, Rima Patel Sriganesh**, Wiley publication.