**Web Service**

**Course Objective:**

To provide an in-depth knowledge of Service Oriented Architecture and its various messaging primitives and the technology, models and protocols of web services.

**Unit I 9 Periods**

**Introducing SOA:** Fundamental SOA - Common characteristics of contemporary SOA - Common misperceptions about SOA - Common tangible benefits of SOA - Common pitfalls of adopting SOA

**Evolution of SOA:** An SOA timeline - Web services: a brief history - The roots of SOA

**Unit II 9 Periods**

**Activity Management and Composition:** The Web services framework - Services - Service descriptions (with WSDL) - Messaging (with SOAP).

**SOA and WS-\* Extensions:** Introducing WS-\* - Message exchange patterns - Service activity - Coordination - Atomic transactions - Business activities - Orchestration - Choreography.

**Unit III 9 Periods**

**Advanced Messaging, Metadata, and Security:** Addressing - Reliable messaging - Correlation - Policies - Metadata exchange - Security - Notification and eventing.

**Principles of Service-Orientation:** Service-orientation and the enterprise - Anatomy of a service-oriented architecture - Common principles of service-orientation.

**Unit IV 9 Periods**

**Web Services:** Web Services and their Approach to Distributed Computing - Web Services Technologies - Web Services Architecture.

**Basic Web Services Technology:** A Minimalist Infrastructure for Web Services - SOAP - WSDL - UDDI - Web Services at Work - Interactions Between the Specifications - Related Standards.

**Unit V 9 Periods**

**Service coordination protocols:** An Introduction to Coordination Protocols - Infrastructure for Coordination Protocols - WS-coordination - WS-Transaction - RosettaNet - Other Standards.

**Service Composition:** Basics of Service Composition - Service Composition Models.

**REFERENCES**

1. Thomas Erl. *Service-Oriented Architecture: Concepts, Technology and Design*, Pearson Education, First Edition, 2005.
2. Gustavo Alonso, Fabio Casati, Harumi Kuno, Vijay Machiraju. *Web Services: Concepts, Architectures and Applications*, Springer 2006.
3. Michael Papazoglou. *Web Services and SOA: Principles and Technology*, Pearson Education, Second Edition, 2012.