# 19CS41E1 - SERVICE ORIENTED ARCHITECTURE

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| **Course Category:** | Professional Elective | **Credits:** | 3 |
| **Course Type:** | Theory | **Lecture – Tutorial – Practical:** | 3-0-0 |
| **Prerequisite:** | Need to have a basic knowledge in service oriented architecture and its models. | **Sessional Evaluation:****Univ. Exam Evaluation:****Total Marks:** | 4060100 |
| **Objectives** | * Enable data to flow between applications in real-time
* Move processes online for self-service functionality
* Increase overall development efficiency
* Multiply the benefits of individual projects
* Enables real-time integration, faster integration of new systems and reduces spread of data.
* Enables exposure of functionality in portals and distributed development of mobile apps.
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| **Course Outcomes** | Upon the successful completion of the course, the students will be able to: |
| CO1 | Exploring the Software oriented Architecture and web services |
| CO2 | Understanding the details of web services technologies like WSDL, JAX, XML etc. |
| CO3 | Aware of the Business Process Management. |
| CO4 | be familiar with the Meta data management in SOA. |
| CO5 | Knowledge on Web Services Security. |
| CO6 | have knowledge of Advanced messagesand Transaction processing. |
| **Course Content** | UNIT-I**Introduction to SOA with Web Services:**The Service-Oriented Enterprise, Service-Oriented Development Service-Oriented Architecture, SOA and Web Services, Rapid Integration, Multi-Channel Access, Extended Web Services SpecificationsUNIT-II**SOA and Web Services for Integration:** Overview of Integration,Integration and Interoperability Using XML and Web Services,Two Approaches for Using XML and Web Services forIntegration and Interoperability,Applying SOA and Web Services for Integration,J2EE Interoperability.UNIT-III**SOA and Business Process Management:**Basic Business Process Management Concept,Example Business Process, Combining BPM, SOA, and Web Services, Orchestration and ChoreographySpecifications,Example of Web Services, CompositionUNIT-IV**Meta data management**: The Simple Approach to Metadata Management Metadata Specifications ,Policy ,WS-MetadataExchange UNIT-V**Web Services Security:**Core Concepts,Challenges, Threats, and Remedies,Securing the Communications Layer,Message-Level, Security,Data-Level Security.UNIT-VI**Advanced messaging**:Reliable Messaging,Notification.**Transaction processing**: Paradigm, protocols and coordination, transaction specifications. |
| **Text Books and References** | **TEXT BOOK:**1. Understanding SOA with Web Services by Eric Newcomer, Greg Lomow, and Pearson Education.

**REFERENCES:**1. Web Services Security by Mark O’ Neill, et al., Tata McGraw-Hill Edition, 2003.
2. Service –Oriented Architecture for Enterprise Applications by Shankar Kambhampaly, Wiley.
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| **E-Resources** | 1. https://nptel.ac.in/courses
2. https://freevideolectures.com/university/iitm
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