| SERVICE ORIENTED ARCHITECTURE<br>[As per Choice Based Credit System (CBCS) scheme]<br>(Effective from the academic year 2017 -2018)<br>SEMESTER – VI | | | |
|---|---|---|---|
| Subject Code | 17CS665 | IA Marks | 40 |
| Number of Lecture Hours/Week | 3 | Exam Marks | 60 |
| Total Number of Lecture Hours | 40 | Exam Hours | 03 |
| CREDITS – 03 | | | |

| Module – 1 | Teaching Hours |
|---|---|
| **SOA BASICS:Software Architecture;**Need for Software Architecture, Objectives of Software Architecture, Types of IT Architecture, Architecture Patterns and Styles, **Service oriented Architecture;**Service Orientation in Daily Life, Evolution of SOA, Drives for SOA, Dimension of SOA, Key components, perspective of SOA, **Enterprise-wide SOA;** Considerations for Enterprise-Wide SOA, Strawman Architecture For Enterprise-Wide-SOA-Enterprise, SOA-Layers, Application Development Process, SOA Methodology For Enterprise<br>**Text 1: Ch2: 2.1 – 2.4; Ch3:3.1-3.7; Ch4: 4.1 – 4.5** | **8 Hours** |
| Module – 2 | |
| **Enterprise Applications;**Architecture Considerations, Solution Architecture for enterprise application, **Software platforms for enterprise Applications;**Package Application Platforms, Enterprise Application Platforms, **Service-oriented-Enterprise Applications;** Considerations for Service-Oriented Enterprise Applications, Patterns for SOA, Pattern-Based Architecture for Service-Oriented Enterprise Application(java reference model only).Composite Applications, SOA programming models.<br>**Text 1: Ch5:5.1, 5.2, 6.1, 6.2**(PageNo 74-81)**, 7.1 – 7.5** | **8 Hours** |
| Module – 3 | |
| **SOA ANALYSIS AND DESIGN;**Need For Models, Principles of Service Design, Design of Activity Services, Design of Datasevices, Design of Client services and Design of business process services, **Technologies of SOA;**Technologies For Service Enablement, Technologies For Service Integration, Technologies for Service orchestration.<br>**Text 1: Ch 8: 8.1 – 8.6, 9.1 – 9.3** | **8 Hours** |
| Module – 4 | |
| **Business case for SOA;** Stakeholder OBJECTIVES, Benefits of SOA, Cost Savings, Return on Investment, SOA Governance, **Security and implementation;** SOA Governance, SOA Security, approach for enterprise wide SOA implementation,**Trends in SOA;** Technologies in Relation to SOA, Advances in SOA.<br>**Text 1: Ch 10: 10.1 -10.4, Ch 11: 11.1 to 11.3, Ch12:12.2, 12.3** | **8 Hours** |
| Module – 5 | |
| **SOA Technologies-PoC;**Loan Management System(LMS), PoC-Requirements Architectures of LMS **SOA based integration;**integrating existing application, **SOA best practices,** Basic SOA using REST. Role of WSDL,SOAP and JAVA/XML Mapping in SOA.<br>**Text 1:Page No 245-248; ReferenceBook:Chapter3; Text 1:Page No 307-310**<br>**Text 2: Ch 3, Ch4** | **8 Hours** |
| **Course outcomes:** The students should be able to: | |

| | |
|---|---|
| | • Understand the different IT architectures |
| | • Explain SOA based applications |
| | • Illustrate web service and realization of SOA |
| | • DiscussRESTful services |

**Question paper pattern:**

The question paper will have TEN questions.

There will be TWO questions from each module.

Each question will have questions covering all the topics under a module.

The students will have to answer FIVE full questions, selecting ONE full question from each module.

**Text Books:**

1. Shankar Kambhampaly, "Service–Oriented Architecture for Enterprise Applications",Wiley Second Edition, 2014.
2. Mark D. Hansen, "SOA using Java Web Services", Practice Hall, 2007.

**Reference Books:**

1. WaseemRoshen, "SOA-Based Enterprise Integration", Tata McGraw-HILL, 2009.