SERVICE ORIENTED ARCHITECTURE
[As per Choice Based Credit System (CBCS) scheme]
(Effective from the academic year 2016 -2017)
SEMESTER – VI

Subject Code	15CS665	IA Marks	20
Number of Lecture Hours/Week	3	Exam Marks	80
Total Number of Lecture Hours	40	Exam Hours	03

CREDITS – 03

Course objectives: This course will enable students to

- Compare various architecture for application development
- Illustrate the importance of SOA in Application Integration
- Learn web service and SOA related tools and governance

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 **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. **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 Data sevices, 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. **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. **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	**8 Hours**

JAVA/XML Mapping in SOA. **Text 1:Page No 245-248; ReferenceBook:Chapter3; Text 1:Page No 307-310** **Text 2: Ch 3, Ch4**	
Course outcomes: The students should be able to:	
• Compare the different IT architecture • Analysis and design of SOA based applications • Implementation of web service and realization of SOA • Implementation of RESTful 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. Waseem Roshen, "SOA-Based Enterprise Integration", Tata McGraw-HILL, 2009.	

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