SERVICE ORIENTED ARCHITECTURE

(Program Elective-IV)

CourseCode	19IT4701B	Year	IV	Semester	I
CourseCategory	PE	Branch	IT	CourseType	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	JAVA,Web Technologies
Continuous Internal Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

	CourseOutcomes Upon successful completion of the course, the student will be able to	Blooms Taxonomy Level
CO1	Understand basic principles, functionalities, standards, registering and discovery of web services in SOA.	L2
CO2	Use the technologies and systems for enabling infrastructure of SOA.	L3
CO3	Apply SOAP specification and data structures to provide a general protocol for Web services.	L3
CO4	Analyze the concepts related to WSDL and UDDI framework.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (H:High, M:Medium, L:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3												3	
CO2	3					3							3	
CO3		3											3	
CO4		3											3	

Syllabus

Unit No	Contents	Mapped CO
I	**Web services basics:** Introduction, The concept of software as a service, A more complete definition of Web services, Characteristics of Web services, Service interface and implementation, The service-oriented architecture, The Web services technology stack, Quality of service (QoS), Web services interoperability, Web services versus components, Impact and shortcomings of Web services	CO1
II	**Distributed computing infrastructure:** Distributed computing and Internet protocols, The client–server model, Characteristics of inter process communication, Synchronous forms of middleware, Asynchronous forms of middleware, Request/reply messaging, Message-oriented middleware, Transaction-oriented middleware, Enterprise application and e-business integration	CO1, CO2
III	**Brief overview of XML:** XML document structure, URIs and XML namespaces, Defining structure in XML documents, XML schemas reuse, Document navigation and transformation	CO1, CO2
IV	**SOAP:** Simple Object Access Protocol: Inter-application communication and wire protocols, SOAP as a messaging protocol, Structure of a SOAP message, The SOAP communication model, Error handling in SOAP, SOAP over HTTP 140, Advantages and disadvantages of SOAP	CO1, CO3
V	**Describing Web services:** Why is a service description needed? , WSDL: Web Services Description Language, Using WSDL to generate client stubs, Non-functional descriptions in WSDL **Registering and discovering Web services:** Service registries, discovery, UDDI data structures, WSDL to UDDI mapping model, The UDDI API, Querying the UDDI model, UDDI usage model and deployment variants	CO1, CO4

Learning Resources

TextBooks

  1. Web Services & SOA Principles and Technology, Second Edition, Michael P. Papazoglou, 2012.

References

 1. Developing J2EE Web Services, R. Nagappan, R. Skoczylas, R.P. Sriganesh, Wiley India.
 2. Sandeep Chatterjee, James Webber, Developing Enterprise Web Services, An Architect's Guide, Pearson Education, 2005.
 3. Dan Woods and Thomas Mattern, Enterprise SOA Designing IT for Business Innovation, O'REILLY, 2006.
 4. Frank Cohen, FastSOA, Elsevier, 2007.
 5. Jeff Davies, The Definitive Guide to SOA, Academic Press, 2007

E-Resources andotherDigitalMaterial
1.https://www.coursera.org/learn/service-oriented-architecture