IV/IV B. TECH. FIRST SEMESTER
WEB SERVICES (Elective-II)

Course Code: CS 7T5D   **Credits: 3**
Lecture:3 periods/week   **Internal assessment: 30 Marks**
Tutorial: 1period/week   **Semester end examination: 70 Marks**

Prerequisites: XML, HTTP, TCP/IP concepts.

Course Objectives:

1. To Understand Web Services and implementation model for SOA
2. To Understand the SOA, its Principles and Benefits
3. To Understand XML concepts
4. To Understand paradigms needed for testing Web Services
5. To explore different Test Strategies for SOA-based applications

Course Outcomes:

At the end of this course student will:

CO1) Understand the principlesof SOA

CO2) Efficiently use market leading environment tools to create and consume web services

CO3) Indentify and select the appropriate framework components in creation of webservice
     solution

CO4) Apply OOP principles to creation of webservice solutions.

Syllabus:

UNIT 1

Evolution and Emergence of Web Services – Evolution of distributed computing. Core
distributed computing technologies – client/server, CORBA, JAVA RMI, Micro Soft DCOM,
MOM, Challenges in Distributed Computing, Introduction to Web Services – The definition of
web services, basic operational model of web services, tools and technologies enabling web
services, benefits and challenges of using web services.

UNIT 2

Web Service Architecture – Web services Architecture and its characteristics, core building blocks of web services, standards and technologies available for implementing web services, web services communication, basic steps of implementing web services.

UNIT 3

Brief Over View of XML – XML Document structure, XML namespaces, Defining structure in XML documents, Reuse of XML schemes, Document navigation and transformation. SOAP : Simple Object Access Protocol, Inter-application communication and wire protocols, SOAP as a messaging protocol, Structure of a SOAP message, SOAP envelope, Encoding, Service Oriented Architectures, SOA revisited, Service roles in a SOA, Reliable messaging,

UNIT 4

Describing Web Services – WSDL introduction, non functional service description, WSDL1.1 Vs WSDL 2.0, WSDL document, WSDL elements, WSDL binding, WSDL tools, WSDL port type, limitations of WSDL.

UNIT 5

Registering and Discovering Services : The role of service registries, Service discovery, Universal Description, Discovery, and Integration, UDDI Architecture, UDDI Data Model, Interfaces, UDDI Implementation,

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Learning Resource

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Text Books

1. Web Services & SOA Principles and Technology, Second Edition, Michael P. Papazoglou.
2. Developing Java Web Services, R. Nagappan, R. Skoczylas, R.P. Sriganesh, Wiley India.
3. Developing Enterprise Web Services, S. Chatterjee, J. Webber, Pearson Education.

References

1. XML, Web Services, and the Data Revolution, F.P.Coyle, Pearson Education.
2. Building web Services with Java, 2nd Edition, S. Graham and others, Pearson Education.
3. Java Web Services, D.A. Chappell & T. Jewell, O'Reilly, SPD.
4. McGovern, et al., "Java web Services Architecture", Morgan Kaufmann Publishers, 2005.