

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE OUTLINE								
Course Title	SERVICE ORIENTED ARCHITECTURE AND WEB SECURITY							
Course Code	CS 604	No. of Credits	3					
Department	CSED	Faculty	Dr.C.Mala					
Pre-requisites Course Code	NIL							
Course Coordinator(s) (if, applicable)	Dr.C.Mala							
Other Course Teacher(s)/Tutor(s) E-mail	mala@nitt.edu	Telephone No.	0431-2503208					
Course Type	Core course							
COURSE OVERVIEW								
Service Oriented Architecture and Web Security Course discusses about the basics of Web services , WS technologies and Web security								
COURSE OBJECTIVES								
<ul style="list-style-type: none"> To provide an overview of XML Technology and modeling databases in XML To provide an overview of Service Oriented Architecture and Web services and their importance To introduce Security solutions in XML and Web Services and to introduce Security standards for Web Services 								
Course Outcomes	Aligned Programme Outcomes (PO)							
1. The students will understand the basics of XML	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
2. The students will learn the concepts of SOA and Web services, some of the prevailing standards and technologies of Web Services	S	B	M	S	B	B	M	B
3. The students will also learn the approaches for providing security for XML documents as well as messages exchanged among Web Services	S	B	M	S	B	M	M	B
	S	M	S	S	M	S	M	B
S = 0.6	M = 0.4			B = 0.0				

Course Teaching and Learning Activities					
L. No	Title	Type			Mode of delivery
		L	T	C&T	PPT
UNIT I					
1.	XML Technology	√			
2.	XML and Web - Name Spaces	√		√	√
3.	XML Document Structure - Structuring with Schemas and DTD	√		√	√
4.	Modeling Databases in XML – XQuery	√		√	√
UNIT II					
5.	SOA Basics Service Oriented Architecture (SOA)	√		√	
6.	Comparing SOA with Client-Server and Distributed architectures	√		√	√
7.	Characteristics of SOA – Benefits of SOA	√		√	
8.	Principles of Service orientation	√		√	
9.	Service layers -Business Process management	√		√	

UNIT III					
10.	Web Security, Services (WS) SOA and Web Services	√		√	√
11.	Web Services Protocol Stack – Service descriptions – WSDL	√		√	√
12.	Messaging with SOAP – Service discovery – UDDI.	√		√	√
13.	Service-Level Interaction patterns – XML and Web Services	√		√	√
14.	Enterprise Service Bus - .NET and J2EE Interoperability.	√		√	√

UNIT IV					
15.	WS Technologies and Standards	√		√	√
16.	Web Services Technologies - JAX-RPC, JAX-WS	√			√
17.	Web Service Standards – WS-RM, WS-Addressing, WS-Policy.	√		√	√
18.	Service Orchestration and Choreography – Composition Standards - BPEL.	√		√	√
19.	Service-Oriented Analysis and Design	√		√	
UNIT V					
20.	XML and WS Security	√		√	√
21.	XML Security Overview – Canonicalization	√		√	√
22.	XML Security Framework – XML Encryption – XML Signature	√		√	√
23.	XKMS Structure. Web Services Security	√		√	√
24.	XACML - WS-Security	√		√	
	TOTAL	38 HOURS			

Course Assessment Methodology				
Sl. No	Mode of Assessment	Week/Date	Duration	Marks
1.	Cycle Test - 1	6 th week	1 Hour	20
2.	Cycle Test - 2	12 th week	1 Hour	20
3.	Assignment	4 th , 10 th weeks		10
4.	End Semester Exam	May 2 nd Week	3 Hours	50
Total				100

