E.G.S. PILLAY ENGINEERING COLLEGE

(Autonomous)

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Chennai Accredited by NAAC with 'A'Grade | Accredited by NBA

NAGAPATTINAM – 611002

B.E. COMPUTER SCIENCE ENGINEERING

2019 Regulation : Full Time Curriculum and Syllabus

Course Code	Course Name	L	T	P	C	Maximum Marks			Category
						CA	ES	Total	
SEMESTER VIII									
Theory Course									
1903CS014	PC Elective IV-Service Oriented Architecture	3	0	0	3	40	60	100	PE
1903CS019	PC Elective V – Data Centre and Virtualization	3	0	0	3	40	60	100	PE
Laboratory Course									
1904CS851	Project Work	0	0	14	7	50	50	100	EEC
	Total	6	0	14	13	130	170	300	

L – Lecture | T – Tutorial | P – Practical | CA – Continuous Assessment | ES – End Semester

1903CS014	SERVICE ORIENTED ARCHITECTURE	L	T	P	C
		3	0	0	3

PREREQUISITES: :
1. Basic knowledge of Internet Programming
2. Distributed Systems

COURSE OBJECTIVES:

1. Learn XML fundamentals.
2. Be exposed to build applications based on XML.
3.Understand the key principles behind SOA

Module I	Introduction to XML	9 Hours

XML document structure – Well formed and valid documents – Namespaces – DTD –X-Files.

Module II	Building XML- based applications	9 Hours

XML Schema - XML Transformation and XSL – XSL Formatting – Modeling Databases in XML.

Module III	Service oriented architecture	9 Hours

Characteristics of SOA, Comparing SOA with Client-Server and Distributed architectures – Benefits of SOA -
- Principles of Service orientation – Service layers.

Module IV	Web Services	9 Hours

Service descriptions – WSDL – Messaging with SOAP – Service discovery – UDDI- Orchestration –
Choreography –WS Transactions.

Module V	BUILDING SOA-BASED APPLICATIONS	9 Hours

Service Oriented Analysis and Design – Service Modeling – Design standards and guidelines - Composition –
WS-BPEL – WS-Coordination – WS-Policy – WS-Security.

	TOTAL:	45 HOURS

FURTHER READING / CONTENT BEYOND SYLLABUS / SEMINAR :
1. Web page designing using xml concepts
2. Advanced WS security policies

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1:Build applications based on XML.
CO2:Develop web services using technology elements.
CO3:Describe real-world scenarios involving web services
CO4:Describe the need for a platform-independent service contract (WSDL)
CO5:Describe the need for a platform-independent messaging format (SOAP).

REFERENCES:

1. Peter S. Pacheco, "An Introduction to Parallel Programming", Morgan-Kauffman/Elsevier, 2011.

2. Darryl Gove, "Multicore Application Programming for Windows, Linux, and Oracle Solaris",Pearson, 2011

3. John L. Hennessey and David A. Patterson, "Computer Architecture – A Quantitative Approach", Morgan
Kaufmann / Elsevier, 5th edition, 2012.

4. Richard Y. Kain, "Advanced Computer Architecture a Systems Design Approach", Prentice Hall, 2011

5. Peter S. Pacheco, "An Introduction to Parallel Programming", Morgan-Kauffman/Elsevier, 2011.

6.https://www.coursera.org/learn/service-oriented-architecture

1903CS019	DATA CENTRE AND VIRTUALIZATION	L	T	P	C
		3	0	0	3

PREREQUISITES:

1. Computer Networks
2. Computer Organization and Architecture

COURSE OBJECTIVES:

1. Understand the Phases of Journey to the Cloud.
2. Describe the Key Elements of Classic Data Center.
3. Understand the Concepts of Virtualized Data Center

Module I	JOURNEY TO THE CLOUD	8 Hours

Business Drivers for Cloud Computing, Definition of Cloud Computing, Characteristics of Cloud Computing as per NIST, Steps Involved in Transitioning from Classic Data Center to Cloud Computing Environment

Module II	CLASSIC DATA CENTER (CDC)	9 Hours

Overview of Classic Data Center, Compute, Storage and Networking, Object Based and Unified Storage Technologies, Business Continuity Overview, Backup, Replication Technologies and CDC Management.

Module III	VIRTUALIZED DATA CENTER (VDC)	11 Hours

Compute virtualization, Storage Virtualization, Network Virtualization Techniques, Methods for Implementing Desktop Virtualization, their Benefits, and Considerations, Application Virtualization Methods, Benefits, and Considerations.

Module IV	BUSINESS CONTINUITY IN VIRTUALIZED DATA CENTER	8 Hours

Overview of Business Continuity in Virtualized Data Center, Fault Tolerance Mechanism in Virtualized Data Center, Backup and Recovery of Virtual Machines (VMs), VM Replication and Migration Technologies.

Module V	CLOUD INFRASTRUCTURE AND MANAGEMENT	9 Hours

Cloud Computing Primer, Overview of Cloud Computing, Cloud Services and Deployment Models, Economics of Cloud, Cloud Infrastructure Framework, Infrastructure Management and Service Creation Tools, Cloud Service Management, Cloud Migration Considerations

	Total:	45 Hours

FURTHER READING :

Cloud evolution-VMware Virtualization Tools- Google Infrastructure- Google Cloud Security

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1:Explore the basics of cloud computing.
CO2:Explain the Classic Data Center and its applications.
CO3:Build a virtualized Data Center using cloud.
CO4:Manage the Cloud infrastructure and services.
CO5:Demonstrate the Cloud Migration Considerations

REFERENCES:

1. Cloud Infrastructure and Services EMC2 Bangalore Book
2. Anthony T Velte, Cloud Computing: A practical Approach, Tata McGraw Hill, 2011
3. Halper Fern, Kaufman Marcia, Bloor Robin, Hurwit Judith, Cloud Computing for Dummies, Wiley India, 2013
4. http://nptel.ac.in/courses/106105167/