Course Number and Name
BEE029 & Cloud Computing

Credits and Contact Hours
3 & 45

Course Coordinator's Name
Ms.Kavitha

Text Books and References

Text Books:
1. Bloor R., Kanfman M., Halper F. Judith Hurwitz "Cloud Computing for Dummies" (Wiley India Edition),2010
2. John Rittinghouse & James Ransome, "Cloud Computing Implementation Management and Strategy", CRC Press, 2010.
3. Antohy T Velte ,Cloud Computing : "A Practical Approach", McGraw Hill,2009.
4. Michael Miller, Cloud Computing: "Web-Based Applications That Change the Way You Work and Collaborate Online", Que Publishing, August 2008.
5. James E Smith, Ravi Nair, "Virtual Machines", Morgan Kaufmann Publishers, 2006.
6. http://cloud-standards.org/wiki/index.php?title=Main_Page

References:
1. Haley Beard, "Cloud Computing Best Practices for Managing and Measuring Processes for On-demand Computing", Applications and Data Centers in the Cloud with SLAs, Emereo Pty Limited, July 2008.
2. webpages.iust.ac.ir/hsalimi/.../89.../Cloud%20Common%20standards.pptopennebula.org.
3. www.cloudbus.org/cloudsim/, http://www.eucalyptus.com/
4. http://hadoop.apache.org/docs/stable/hdfs_design.html
5. http://static.googleusercontent.com/external_content/untrusted_dlcp/research. google.com/ en//archive/mapreduce-osdi04.pdf

Course Description
This course gives an introduction to cloud computing and its techniques, issues, and its services that will lead to design and development of a simple cloud service.

Prerequisites	Co-requisites
Fundamentals of Computing	Nil

required, elective, or selected elective (as per Table 5-1)
Required

Course Outcomes (COs)

CO1: To analyze the components of cloud computing and its business perspective.
CO2: To evaluate the various cloud development tools
CO3: To collaborate with real time cloud services.
CO4: To analyze the case studies to derive the best practice model to apply when developing and deploying cloud based applications.

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	H	H	L	L	H	M	M	L	L	L	L	L
CO2	H	H	L	L	M	M	M	L	L	L	L	L
CO3	H	H	L	L	H	M	M	L	L	L	L	L
CO4	H	H	L	L	H	M	M	L	L	L	L	L

List of Topics Covered

UNIT I   CLOUD INTRODUCTION   9

Cloud Computing Fundamentals: Cloud Computing definition, Types of cloud, Cloud services: Benefits and challenges of cloud computing, Evolution of Cloud Computing , usage scenarios and Applications , Business models around Cloud –Major Players in Cloud Computing - Issues in Cloud - Eucalyptus - Nimbus – OpenNebula, CloudSim.

UNIT II   CLOUD SERVICES AND FILE SYSTEM   9

Types of Cloud services: Software as a Service - Platform as a Service –Infrastructure as a Service - Database as a Service - Monitoring as a Service –Communication as services. Service providers- Google App Engine, Amazon EC2,Microsoft Azure, Sales force. Introduction to Map Reduce, GFS, HDFS, Hadoop Framework.

UNIT III   COLLABORATING WITH CLOUD   9

Collaborating on Calendars, Schedules and Task Management – Collaborating on Event Management, Contact Management, Project Management – Collaborating on Word Processing, Databases – Storing and Sharing Files- Collaborating via Web-Based Communication Tools – Evaluating Web Mail Services – Collaborating via Social Networks – Collaborating via Blogs and Wikis.

UNIT IV   VIRTUALIZATION FOR CLOUD   9

Need for Virtualization – Pros and cons of Virtualization – Types of Virtualization –System Vm, Process VM, Virtual Machine monitor – Virtual machine properties -Interpretation and binary translation, HLL VM - Hypervisors – Xen, KVM ,VMWare, Virtual Box, Hyper-V.

UNIT V   SECURITY, STANDARDS, AND APPLICATIONS   9

Security in Clouds: Cloud security challenges – Software as a Service Security, Common Standards: The Open Cloud Consortium – The Distributed management Task Force – Standards for application Developers – Standards for Messaging –Standards for Security,