DEPARTMENT OF COMPUTER APPLICATIONS

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

Course Title	Cloud Computing		
Course Code	CAS7C3	No. of Credits	3
Department	Computer Applications	Faculty	Dr. R. Eswari
Pre-requisites Course Code	-		
Course Teacher(s)/Tutor(s) E-mail	eswari@nitt.edu	Telephone No.	0431-2503744
Course Type	Elective course		

COURSE OVERVIEW

The course provides introduction to cloud computing, virtualization, legacy hardware and software and approaches to transitioning Information Technology from legacy systems to a shared and managed service model. Various Cloud Computing models will be covered including Private, Public, Hybrid and Community Clouds. Management of Cloud Computing Providers using automated tools and Service Level Agreements will be discussed, along with security and privacy considerations. Students will learn how to effectively plan, implement and manage Cloud Computing in virtual data centers and study VMware and XEN Virtualization software.

COURSE OBJECTIVES

- To understand the various concepts of Distributed and Cloud Computing
- To study the architecture and service models in cloud computing

COURSE OUTCOMES

- Be aware of features of cloud computing
- Understand various performance criteria to evaluate the quality of the cloud architecture

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week	Topic	Mode of Delivery
1	1	Scalable Computing, Technologies for Network Based Systems, System Models for Distributed and Cloud Computing, Software Environments for Distributed and Clouds Performance, Security and Energy Efficiency	Power Point Presentation -4 hrs

2	2	Virtualization concepts: Implementation Levels of Virtualization	Power Point Presentation -3 hrs
3	3	Virtualization Structures Tools and mechanisms, Virtualization of CPU, Memory and I/O Devices	Power Point Presentation -3 hrs
4	4	Virtual Clusters and Resource Management Virtualization for Data Center Automation, Introduction to Various Virtualization OS Vmware , KVM, Xen.	Power Point Presentation -3 hrs
5	5	Service Oriented Architecture for Distributed Computing: Services and SOA, Message Oriented Middleware Portals and Science Gateways	Power Point Presentation -3 hrs
6	6	Discovery Registries Metadata Workflow in SOA, Cloud Computing and Service Models Data center Design and Interconnection Networks	Power Point Presentation -3 hrs
7	7	Architectural Design of Compute and Storage Clouds, Public cloud Platforms, Inter cloud Resource Management Cloud	Power Point Presentation -3 hrs
8	8	Security and Trust Management, Cloud Programming and Software Environments Cloud Programming and Software, Environments	Power Point Presentation -3 hrs
9	9	Features of Cloud and Grid Platforms Parallel and Distributed Paradigms	Power Point Presentation -3 hrs
10	10	Programming Support of Google App Engine Amazon AWS	Power Point Presentation -3 hrs
11	11	Microsoft Azure Emerging Cloud Software Environments	Power Point Presentation -3 hrs

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Test 1	4th week of August	1 Hr	20
2	Test 2	3rd week of october	1 Hr	20
3	Assignment	Week 8	1 week	10
4	End Semester Exam	At the end of course	3 hrs	50

ESSENTIAL READINGS :

Reference Books

1. Kai Hwang, Geoffrey C.Fox, and Jack J. Dongarra, "Distributed and Cloud Computing", Elsevier India Private Limited, 2012.
2. Foster and Kesselman, "The Grid : Blueprint for a New Computing Infrastructure", Morgan Kauffman publishers Inc. 2004
3. Coulouris, Dollimore and Kindber, "Distributed System: Concept and Design", Fifth Edition, Addison Wesley, 2011.
4. Michael Miller, "Cloud Computing" Dorling Kindersley India,2009.
5. Anthony T. Velte, Toby J. Velte and Robert Elsenpeter, "Cloud computing: A practical Approach", McGraw Hill,2010

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)

- The students through the class representative may give their feedback at any time to the course faculty which will be duly addressed.
- The students may also give their feedback during Class Committee meeting.

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

- **Plagiarism**
  The students are expected to come out with their original solution for problems given as assignment, and tests/examinations.

- **Attendance**
  100% is a must. However, relaxation upto 25% will be given for leave on emergency requirements (medical, death, etc.) and representing institute events.

ADDITIONAL COURSE INFORMATION

The Course Coordinator is available for consultation office from 4 pm to 5 pm every day.
Students can access the course in Moodle site http://egov.nitt.edu/moodle

FOR SENATE'S CONSIDERATION

| Dr.R.Eswari | (Dr.U.Srinivasulu Reddy) | (Dr.A.Vadivel) |
| Course Faculty | Class Committee Chairperson | HoD |