

**INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE**

1.	Title of the Course	Cloud Computing
2.	Course Number	CS6101
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered To	PG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Computer Science and Engineering
8.	To take effect from	July 2019
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: To provide an insight into managing and scheduling of various cloud resources such as compute, storage, and network; To teach the distributed computing fundamentals in the context of cloud infrastructure.	
12.	Course Content: Introduction to cloud computing; Cloud delivery models and services: Software as a service, platform as a service, and infrastructure as a service; Key concepts of distributed computing; Managing and scheduling of cloud resources; Compute virtualization: Full and paravirtualization based hypervisors; Storage virtualization: Ceph; Network virtualization: virtual local area network, virtual extensible local area network, and generic routing encapsulation; Map reduce frameworks; Hadoop and Spark; File systems such as Hadoop file system and Google file system; Cloud computing case study: Amazon elastic compute core, Microsoft Azure, and Eucalyptus. Cloud security: Cloud Security Alliance recommendations, rogue virtual machines, data and infrastructure security, and access management and control.	
13.	Text book(s): 1. Marinescu D C, <i>Cloud Computing Theory and Practice</i> , Morgan Kaufmann (2014).	
14.	Reference(s): 1. Erl T, Mahmood Z and Martinez J W, <i>Cloud Computing: Concepts, Technology & Architecture</i> , Prentice Hall (2014). 2. Stallings W, <i>Foundations of Modern Networking</i> , Pearson (2017).	