Proposed Scheme & Syllabus

For

Computer Science & Engineering Department

National Institute of Technology Delhi

Proposed Curriculum

M. Tech. Programme

Computer Science and Engineering

(Analytics)

Course no: CSL 530	**Open course (YES/NO)**	**HM Course (Y/N)**	**DC (Y/N)**	**DE (Y/N)**
	NO	NO	NO	NO
Type of course	**Elective**			
Course Title	**Cloud Computing**			
Course Coordinator				
Course objectives:	To impart basic concepts in the area of cloud computing. Bring in depth understanding on architectures and models for Cloud Computing, Cloud Programming and software, Virtualization Technology. To impart knowledge in web based applications of cloud computing			
POs				

Semester	**Autumn: Yes**		**Spring: Yes**		
I/II/III	**Lecture**	**Tutorial**	**Practical**	**Credits**	**Total teaching hours**
Contact Hours	3	0	0	3	36
Prerequisite course code as per proposed course numbers	NIL				
Prerequisite credits	NIL				
Equivalent course codes as per proposed course and old course	NIL				
Overlap course codes as per proposed course numbers	NIL				

Text Books:		
1.	Title	Cloud Computing, Principal and Paradigms
	Author	Edited By Raj Kumar Buyya, JemesBroberg, A. Goscinski
	Publisher	Wiley
	Edition	
2	Title	Distributed and Cloud Computing
	Author	Kai Hawang, Geofrey C Fox, Jack J. Dongarra
	Publisher	Elsevier
	Edition	
Reference Book:		
1.	Title	Cloud Computing: Web Based Applications That Change the Way You Work and Collaborate Online
	Author	Robert Gibbons
	Publisher	Que Publishing
	Edition	August 2008
2.	Title	Cloud Computing – Insights into New Era Infrastructure
	Author	Kumar Saurabh
	Publisher	Wiley Indian
	Edition	2011

3		Title	Cloud Computing Best Practices for Managing and Measuring Processes for On demand Computing
		Author	Haley Beard
		Publisher	Emereo Pty Limited
		Edition	July 2008
4		Title	Cloud Computing A Practical Approach
		Author	Anthony T. Velte, Robert, Elsen Peter
		Publisher	TMH
		Edition	
Content	**Unit** 1 (5 Hours) Introduction Cloud Computing: Feature Characteristics and components of Cloud Computing. Challenges, Risks and Approaches of Migration into Cloud. Evaluating the Cloud's Business Impact and economics, Future of the cloud computing. Networking Support for Cloud Computing. Ubiquitous Cloud and the Internet of Things. **Unit** 2 (7 Hours) Cloud Computing Architecture: Cloud Reference Model, Layer and Types of Clouds, Services models, Data center Design and interconnection Network, Architectural design of Computer and Storage Clouds. **Unit** 3 (8 Hours) Cloud Programming and Software: Fractures of cloud programming, parallel and distributed programming paradigms, High level Language for Cloud. Introduction to Map Reduce, GFS, HDFS, Hadoop Framework. **Unit** 4 (10 Hours) Virtualization Technology: Definition, Understanding and Benefits of Virtualization. Implementation Level of Virtualization, Virtualization Structure/Tools and Mechanisms, Hypervisor, VMware, KVM, Xen. Virtualization of CPU, Memory, I/O Devices, Virtual Cluster and Resources Management, Virtualization of Server, Desktop, Network, and Virtualization of data center. **Unit** 5 (6 Hours) Web Based Application, Pros and Cons of Cloud Service Development, Types of Cloud Service Development, Software as a Service, Platform as a Service, Web Services, On Demand Computing, Discovering Cloud Services, Development Services and Tools, Amazon Ec2, GoogleApp Engine, IBM Clouds.		
Course Assessment	Continuous Evaluation 25% Mid Semester 25% End Semester 50%		