

**Course Name** - Peer to Peer Networks

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**Course Syllabus** -

Week 1: P2P Networks - motivation. Basics - cryptographic hash, public key cryptography principles, security certificates, structured and unstructured p2p networks

Week 2: Inconsistent hashing, Consistent hashing, Rendezvous hashing, locality preserving hashing, Distributed hash tables

Week 3: Chord, Finger Tables, Distance function, Finger table creation and management

Week 4: Kadmlia, Tapestry, Pastry, Logarithmic partitioning, Other geometric structures, Locality aware DHT

Week 5: P2P VoIP system, Transport - UDP, TCP, Http tunneling, Proxying

Week 6: Distributed File System, DFS based Backup System, Universal File System.

Week 7: Use case scenarios for P2P VoIP and DFS systems, Unstructured systems.

Week 8: TOR routing (anonymous routing), Overlaid multicasting, Resilience of overlaid multicast, Generic Multiservice architecture of Brihaspati