

## **NEXT GENERATION NETWORKS**

**Paper Code: ETEC-428 L T/P C**

**Paper: Next Generation Networks 3 0 3**

*Objective: The objective of this course is to provide exposure to the new technologies and services that telecommunication operators have as they create new 3G networks and beyond where multimedia coverage is based on packet switched rather than circuit switched Telephony.*

### **UNIT-I**

Introduction to next generation networks. Communicating in the new Era, New Era of Networking, Technologies influencing change, IP Everywhere, Optical fiber anywhere, wireless access, building blocks for NGN, IP Networks, VOIP, Multi service Flexible Networks architecture. VPNs, Optical Networks, Wire line & Wireless Networks, NGN Services, Network Infrastructure convergence, services convergence, from technology push to service pull.

**[T1,T2] [No. of Hrs. 11]**

### **UNIT-II**

IP Networks ,IP past, present and future, IP influence and confluence, IP version 4, I. P. Version 6, IP Network convergence, LAN Technologies, IP Routing, LAN Switching, WAN's, WAN Technologies and Topologies. Wireless IP LANS, Mobility Networks, Global IP Networks, Global capacity, Globally Resilient IP, Internet – A Network of Networks. Beyond IP, Technology Brief – IP Networks, Business Drivers, Success factors, Applications and Service Value.

**[T1,T2] [No. of Hrs. 11]**

### **UNIT-III**

Muti service Networks Origin of multi service ATM, Next Generation Multi service Networks, Next Generation Multi service ATM switching, Multi protocol Label switching, Networks, Frame Based MPLS, Cell based MPLS, MPLS services and their benefits, multi service provisioning platforms (MSPP) & Multi service switching platform (MSSP).

**[T1,T2] [No. of Hrs. 11]**

### **UNIT-IV**

NGN Applications Internet connectivity, e-commerce, call center, third party application service provision, UMTS, WAP, WiMAX, integrated billing, security and directory enabled networks.

**[T1,T2] [No. of Hrs. 11]**

#### **Text Books:**

[T1] Neill Wilkinson, "Next Generation Networks Services, Technologies and Strategies", Wiley.

[T2] Robert Wood, "Next Generation Network Services", Pearson

#### **Reference Books**

[R1] Next Generation Telecommunications Network, Parliament office of Science and Technology (Postnote). Dec 2007, No. 296, Ref. <http://www.parliament.uk/briefing-papers/POST-PN-296.pdf>

[R2] Huber, J.F.' " Mobile Next Generation Networks", IEEE Multimedia Vol. 11, Issue 1 Jan- March 2004.

[R3] J.C. Crimi, "Next Generation Network (NGN) Service", A Telecoolia Technologies white paper; refer [www.telecodia.com](http://www.telecodia.com)

[R4] International Conference on Next Generation Networks & Basestations Tackles LTE, WiMAX, Femtocells, Backhaul, Spectrum Re-farming and Also Goes.

'Green'.<http://www.thefreelibrary.com/International+Conference+on+Next+Generation+Networks+%26+Basestations...-a0176872977>

[R5] Carugi, M.; Hirschman, B.; Narita, A., "Introduction to the ITU-T NGN focus group release 1: target environment, services, and capabilities," Communications Magazine, IEEE , vol.43, no.10, pp. 42-48,

Oct. 2005 doi: 10.1109/MCOM.2005.1522123