COURSE	Name	:	Network Engineering
	Code	:	EE185232
	Credit(s)	:	3
	Semester	:	II

Description of Course

Network Engineering course studies the theory, design, implementation and management of network technology between office workstations (LAN), between offices in metropolitan areas (MANs), across cities (WAN) and also international networks (GAN). It also discusses about cable and wireless networks, including broadband Internet access technology, interconnection technology, network convergence, how to manage and configure network equipment and services in various network environments.

Learning Outcomes

Knowledge

(P01) Mastering the concepts and principles of science in a comprehensive manner, and to develop procedures and strategies needed for the analysis and design of systems related to the field of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics as a preparation for further education or professional career.

Specific Skill

(KK01) Being able to formulate engineering problems with new ideas for the development of technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU11) Being able to implement information and communication technology in the context of execution of his/her work.

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Mastering the basic concepts of network basics, TCP / IP protocols (addressing, routing and transport), Internet security.

Specific Skill

Able to analyze the quality of services in the internet network and do trouble shooting if there are problems in the network.

General Skill

Able to use network admin tools and software to manage networks including network security and bandwidth sharing.

Attitude

Demonstrating the attitude of being responsible for the work in his/her area of expertise independently.

Working together to be able to make the most of their potential.

Main Subjects

1. Concept, architecture and network protocol
2. Physical network topology
3. Network devices
4. 7 layers of OSI and 4 layers of TCP / IP
5. IP address, subnetting and Domain name system
6. Routing
7. Management, monitoring and management of network traffic
8. Quality of network services (QOS)
9. Network Troubleshooting
10. Network security

Reference(s)

[1] D. Comer, Internetworking With TCP/IP, Volume 1: Principles Protocols, and Architecture, 5th edition, 2006.
[2] D. Medhi and K. Ramasamy, Network Routing, Mogran Kaufmann, 2007.
[3] M. Hassan and R. Jain, High Performance TCP/IP Networking: Concepts, Issues, and Solutions, Prentice-Hall, 2003.
[4] G. Varghese, Network Algorithmics, Mogran Kaufmann, 2004.

Prerequisite(s)

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