COURSE	Name	:	Multimedia in Network
	Code	:	EE185559
	Credit(s)	:	2
	Semester	:	(Elective Course)

Description of Course

This course studies architecture, flow diagrams and multimedia features in the network and communication protocols available in several network applications.

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 mechanism or protocol for high-speed multimedia streaming on cable networks and wireless networks.

Specific Skill

Able to design highspeed LAN and link layers to support multimedia and real time applications.

General Skill

Able to build multimedia applications in the network using the existing distributed technology technology with socket programming, MPEG and media API compression techniques

Attitude

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

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

Main Subjects

1. Multimedia Processing, Video coding.
2. Standard Multimedia: JPEG / JPEG-2000, H.26x, MPEG-1/4/7, AVC, Scalable Video Coding
3. Multimedia Networking: End-to-End QoS for Video Delivery, Wireless Video, Error Control on Video Streaming, Cross-Layer Video Adaptation.
4. Network layer for Multimedia communication: Internet Multicast Model, Internet Group Management Protocol (IGMP), Group Shared Tree and Source Based Tree, Multicast Routing Algorithm
5. System architecture Multimedia Streaming: Real-time Streaming, On-demand Streaming, Streaming Server design, Buffering and Scheduling Techniques.

Reference(s)

[1] J.K. Kurose, Computer Networking: A Top-down Approach Featuring the Internet, 5th ed., Addison-Wesley, 2010.
[2] K.R. Rao, Z.S. Bojkovic and D.A. Milovanovic, Multimedia Communication Systems: Techniques, Standards, and Networks, Prentice-Hall PTR, 2002.
[3] S. Vegesna, IP Quality of Service, Prentice-Hall PTR, 2001. 4. Colin Perkins, RTP: Audio and Video for the Internet, Addison-Wesley, 2003. 5. A. Dashti, S.H. Kim, C. Shahabi an d R. Zimmermann, Streaming Media Server Design, Prentice-Hall PTR, 2002

Prerequisite(s)

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