

COURSE	Name : Multimedia Signal Processing
	Code : EE185566
	Credit(s) : 2
	Semester : (Elective Course)

Description of Course

This course discusses the concept of signal processing for multimedia applications, starting from : basic concept of multimedia, including text, voice, image and video, Image processing, audio processing and text processing, basic concept of continuous signals and digital signals, Fourier transform, Fast-Fourier Transform (FFT), discrete cosine transran and multimedia compression/video compression and video streaming.

Learning Outcomes

Knowledge

(P02) Mastering engineering concepts and principles to develop the necessary procedures and strategies for systems analysis and design in the areas of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

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 principle and concept of signal processing for multimedia applications, including basic concept of multimedia, including text, voice, image and video, Image processing, audio processing and text processing, basic concept of continuous signals and digital signals, Fourier transform, Fast-Fourier Transform (FFT), discrete cosine transran and multimedia compression/video compression and video streaming.

Skill

Able to explain the principle and concept of signal processing for multimedia applications, including basic concept of multimedia, including text, voice, image and video, Image processing, audio processing and text processing, basic concept of continuous signals and digital signals, Fourier transform, Fast-Fourier Transform (FFT), discrete cosine transran and multimedia compression/video compression and video streaming. Able to solve special case in multimedia processing field.

Main Subjects

1. Concept of signal processing for multimedia applications
2. Basic concept of multimedia, including text, voice, image and video
3. Image processing
4. Audio processing
5. Text processing
6. Basic concept of continuous signals and digital signals
7. Fourier Transform and Fast-Fourier Transform (FFT)
8. Discrete cosine transform
9. Multimedia compression/video compression
10. Streaming Multimedia

Reference(s)

- [1] Alan C. Bovik, "Handbook of Image and Video Processing ", Academic Press, 2000
- [2] Rafael C. Gonzalez, "Digital Image Processing", 3rd Ed., Pearson Education, 2008
- [3] A Handbook : Time-series Analysis, Signal Processing and Dynamics., DSG Pollock, University of London, 1999

Prerequisite(s)

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