

Title Multimedia Systems	Code POZ04WTS2ICC18
Field Electronics and Telecommunications	Year / Semester 1 / spring
Specialty	Course core
Hours / week Lectures: 1 Classes: Laboratory: 1 Projects / seminars:	Number of credits 2

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Status of the course in the study program:

Obligatory course for students of Electronics and Telecommunications.

Objectives of the course:

Introduction to modern multimedia systems.

Course description:

Multimedia data representation (text, audio, graphics, image), Advanced Video Coding, High Efficiency Video Coding, media servers, synchronization, video streaming, Digital television, DVB, Video on demand, Multimedia data retrieval, MPEG-7, MPEG-21.

Prerequisite:

Fundamentals of digital image and audio processing: digital image, video and audio – sampling and compression, entropy coding including binary arithmetic coding, transform image coding, hybrid video coding, perceptual audio coding.

Introduction to telecommunication and communication networks: QoS, network architecture, OSI model, basic digital modulation, fundamentals of forward error correction.

Teaching methods:

Lectures, laboratory work using some specialized software and equipment for video/ stereo video and audio.

Assessment methods:

Written tests, oral examination.

Bibliography:

1. Ch. Poynton, *Digital video and HDTV*, Morgan Kaufman, 2003.
2. U. Reimers, DVB, *The family of international standards for digital video broadcasting*, Springer, 2005.
3. R. Steinmetz, K. Nahrstedt, *Multimedia systems*, Springer, 2004.
4. B.S. Manjunath, P. Salembier, T. Sikora (eds.), *Introduction to MPEG-7*, Wiley, 2002.