



COURSE DESCRIPTION CARD - SYLLABUS

Course name

IMultimedia systems

Course

Field of study

Electronics and telecommunication

Area of study (specialization)

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1 / sem. 1

Profile of study

general academic

Course offered in

English

Requirements

compulsory

Number of hours

Lecture

15

Tutorials

Laboratory classes

15

Projects/seminars

Other (e.g. online)

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

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Phone: 616653901

Responsible for the course/lecturer:

Prerequisites

Basic programming skills, telecommunication fundamentals, digital signal processing, introduction to multimedia. Ability to independently gain knowledge from various sources.

Course objective

Gaining general understanding of multimedia systems in telecommunications, and basic problems in such systems on the basis of study of a selected system, e.g. DVB.



Course-related learning outcomes

Knowledge

Multimedia systems in telecommunications, and basic problems in such systems on the basis of study of a selected system, e.g. DVB.

Skills

Ability to assess the parameters of multimedia systems implemented in telecommunication and teleinformatic networks.

Social competences

Understanding of economic and social background for development of multimedia systems.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written or oral test that includes 3-6 problems or open questions. The answers are scored with the numbers of points being dependent on complexity of the questions and problems. The acceptance threshold is 50%.

The skills and knowledge gained in laboratory classes are assessed on the basis of the performance in individual topics and as well as some tests. The acceptance threshold is 50%.

Scores: $\leq 50\%$ 2,0 ; 51%-60% 3,0; 61%-70% 3,5; 71%-80% 4,0; 81%-90% 4,5; 91%-100% 5,0.

Programme content

1. Video and audio in consumer systems - parameters, new formats.
2. Architecture of multimedia systems in communication networks.
3. Synchronisation.
4. System and service information.
5. Protection of multimedia content against transmission errors .
6. Conditional access to multimedia content.
7. Specific solutions for various types of networks.
8. Efficiency analysis for multimedia systems.
9. Digital television, video over-the-top, IP multimedia, video on demand and other interactive services. film na żądanie i inne usługi interaktywne.
10. New media - immersive media.

Teaching methods



The lecture is designed as a case study, i.e. an example of a popular multimedia system is studied in detail. A good example of a system to be studied is DVB.

Lecture with slides (including pictures) displayed on screen. The slides are available on the webpage of the institute.

Laboratory classes that correspond to the selected problems. The classes need that students actively solve problems.

Bibliography

Basic

- U. Reimers, DVB, Springer.
- J. Whitaker, B. Benson, Standard Handbook of Video and Television Engineering, McGraw-Hill.

Additional

- V. Madisetti (ed), Video, Speech, and Audio Signal Processing and Associated Standards (The Digital Signal Processing Handbook, Second Edition), CRC Press, 2009.
- B. Bing, Broadband Wireless Multimedia networks, Wiley.
- J-R Ohm, Multimedia Communication Technology: Representation, Transmission and Identification of Multimedia Signals (Signals and Communication Technology), Springer, 2004.

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	31	2,0
Student's own work (literature studies, preparation for laboratory classes, preparation for tests, laboratory projects preparation) ¹	29	0

¹ delete or add other activities as appropriate