STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Multimedia systems**		Code **1010802111010840643**
Field of study **Electronics and Telecommunications**	Profile of study (general academic, practical) **general academic**	Year /Semester **1 / 1**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**

Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours Lecture: **1** Classes: **-** Laboratory: **1** Project/seminars: **-**	No. of credits **2**

Status of the course in the study program (Basic, major, other) **major**	(university-wide, from another field) **from field**

Education areas and fields of science and art **technical sciences** **Technical sciences**	ECTS distribution (number and %**)** **2 100%** **2 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	K1_W11 K1_W17 K1_W24
2	**Skills**	K1_U01 K1_U16
3	**Social competencies**	K1_K01 K1_K04

Assumptions and objectives of the course:

Conveying the knowledge and skills from the area of modern multimedia systems. Introducing the most important aspects and the most recent trends in development of digital distribution of multimedia content.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. A student has detailed knowledge about modern telecommunication systems providing multimedia services, knows and understands the principles of operation of systems providing multimedia services in variety of networks, knows economical and legal aspects of providing multimedia services, has knowledge about contemporary development directions in domain of systems for multimedia services. - [K2_W01]

Skills:

1. Is able to analyze the operation of multimedia systems. Is able to solve problems related to multimedia systems, also problems including a research component. - [K2_U03]

2. Is able to communicate freely in English. Is able to discuss professional matters in English; is able to use knowledgeably English language sources (books, technical and scientific journals, application notes, catalogues, instructions, standards, etc.). - [K2_U01]

Social competencies:

1. Understands the role of information society in the country development . - [K2_K02]

2. Is aware of the limitations of his/her current knowledge and skills; is committed to lifelong learning. - [K2_K04]

Assessment methods of study outcomes

Written exam on the lectures subjects.

Laboratory classes are credited based on the activity of a student and self-made practical project.

Course description

Lectures:

1. Analog TV systems: PAL, NTSC.
2. Digital TV systems: DVB, ATSC, ISDB.
3. MPEG Transport Stream.
4. DVB variants.
5. Conditional access systems.
6. Stereovision, free viewpoint TV.
7. Multimedia service platforms.
8. Multimedia services.
9. Describing and searching for multimedia content.

Laboratory classes

1. Compressing video sequences with AVC codec.
2. Streaming of multimedia content.
3. Error concealment in multimedia systems.
4. Transport Stream analysis.
5. DirectShow filters.

Basic bibliography:

1. Marek Domański, ?Obraz cyfrowy?, Wydawnictwa Komunikacji i Łączności, 2011
2. Ulrich Reimers, DVB: The Family of intenational standardards for Digital Video Broadcasting.

Additional bibliography:

1. www.dvb.org ? Digital Video Broadcast

Result of average student's workload

Activity	Time (working hours)
1. participation in lectures and laboratories	30
2. preparation for laboratory classes	15
3. writing a report	5
4. preparation for exam, literature study	15
5. advisory hours and exam	5

Student's workload

Source of workload	hours	ECTS
Total workload	65	2
Contact hours	35	1
Practical activities	35	1