POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Multimedia mobile applications

Course

Field of study	Year/Semester
Electronics and Telecommunications	**II/ Sem. 4**
Area of study (specialization)	Profile of study
	general academic
Level of study	Course offered in
Second-cycle studies	**English**
Form of study	Requirements
full-time	**elective**

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
30	15	
Tutorials	Projects/seminars	
0	0	

Number of credit points

4

Lecturers

Responsible for the course/lecturer:	Responsible for the course/lecturer:
dr inż. Dawid Mieloch	prof. dr hab. inż. Marek Domański
dawid.mieloch@put.poznan.pl	marek.domanski@put.poznan.pl

Prerequisites

Has a detailed knowledge about the contemporary telecomunication systems that deliver multimedia services.

The student should pass the courses on introduction to telecommunications, communication networks, digital transmission, introduction to multimedia, multimedia communicaions, multimedia systems.

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Is able to obtain information from literature and databases as well as other sources in English; is able to integrate obtained information, interpret it, draw conclusions and justify opinions.

Knows the limits of his own knowledge and abilities, understands the need for ongoing education.

Course objective

Students gain the knowledge of mobile-specific multimedia applications, knowledge about contemporary development trends in the area of mobile multimedia services.

Course-related learning outcomes

Knowledge

Have a structured knowledge on development of multimedia mobile communication and the respective applications.

Skills

Can evaluate the suitability of various media and the architecture required to incorporate them in mobile applications.

Social competences

Is aware of the limitations of his/her current knowledge and skills; is committed to further self-study. Is aware of the main challenges facing electronics and telecommunication in the 21st century. Is aware of the impact electronics and ICT systems and networks will have on the development of the information society. A student is open to constant learning and understands the need to improve his/her professional competences.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The knowledge acquired in the lecture is verified on the written and / or oral exam. The exam consists of several open questions with different levels of difficulty with the assigned number of points. The questions relate to the content presented during the lectures. Credit threshold: 50% of points.

Laboratory - the knowledge acquired on laboratories is verified through the ongoing assessment of student activity during laboratories and/or through the reports of tasks performed during the laboratories. Credit threshold: 50% of points.

Programme content

Lecture:

Wireless multimedia transport. Dynamic streaming of multimedia content. MPEG-DASH, DVB-DASH.

MPEG Media Transport MMT - personalised broadcasting.

Mobile multimedia platforms - multimedia subsystem.

Mobile television , e.g. DVB-T2Lite.

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Mobile applications for virtual reality.

Mobile multimedia search applications for augmented reality. CDVS and CDVA. Multimedia distributed databases - MPEG-7 and MPEG-21.

Mobile video surveillance.

Video coding for machines. Video coding and transmission for V2V and V2X.

Laboratory:

Streaming of multimedia, multimedia description, elements of virtual and augmented reality applications.

Teaching methods

Lecture - presentation using a projector, illustrated with examples on the board. Slides available to students .

Laboratory - computer classes using software that allows advanced simulation and analysis of audiovisual signals. Solving problems given by the teacher and / or specified in the laboratory instruction. Interpretation of the received solution and drawing conclusions.

Bibliography

Basic

1. Jens R. Ohm, Multimedia Communication Technology, Springer 2004.

2. B. Bing, Broadband Wireless Multimedia Networks, Wiley.

Additional

1. D. Bull, Communicating Pictures, Elsevier, 2014

2. L. Chariglione, The MPEG Representation of Digital Media, Springer, 2012

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	58	2,0
Student's own work (literature studies and online tutorials, preparation for laboratory classes, preparation for exam) [1]	42	2,0

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[1] delete or add other activities as appropriate