

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Multimedia Tools		Code 1010802131010842927
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 2 / 3
Elective path/specialty Information and Communication	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: - Laboratory: 2 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: prof. dr hab. inż. Marek Domański email: domanski@put.poznan.pl tel. +48 0616653900 Wydział Elektroniki i Telekomunikacji ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	K1_W03 K1_W09 K1_W11 K1_W13 K1_W24
2	Skills	K1_U01 K1_U15 K1_U16
3	Social competencies	K1_K01 Capable of self-learning (books, computer programs)He acts actively in class, asks questions, knowingly uses the contact with the teacher (eg consultation).
Assumptions and objectives of the course: The course presents the latest technology in the field of advanced video compression and sound issues related to the transmission (including streaming) and storage of data, presentation of mono and stereo image. Also presented are the solutions for advanced search data in video sequences.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Has in-depth knowledge of construction and operation of communication systems used to provide 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]		
Social competencies: 1. Is aware of the limitations of his/her current knowledge and skills; is committed to lifelong learning. - [K2_K04] 2. Is aware of the necessity to approach solving technical problems with responsibility and professionalism. - [K2_K05]		
Assessment methods of study outcomes		

1. A written or oral exams or test questions. 2. Reports from a thematically block of laboratory. 3. Checking preparation for classes and activities in the laboratory.		
Course description		
Advanced techniques for audio and video compression (AVC and HEVC), advanced search techniques and description for the data using metadata (descriptors), multimedia software, media servers, synchronization, streaming data, digital television, DVB, video on demand, MPEG-7, MPEG-21.		
Basic bibliography:		
1. Jens R. Ohm, Multimedia Communication Technology, Springer 2004 2. Domański M., Obraz cyfrowy, WKŁ, Warszawa 2010		
Additional bibliography:		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures	15	
2. Laboratories	30	
3. Preparation for laboratory and preparation of reports	15	
4. Preparation for the completion of the course	10	
5. Consulting with the lecturer	3	
6. participation in the test completing the course	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	75	2
Contact hours	50	2
Practical activities	45	1