

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Introduction to Multimedia		Code 1010804181010840073
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 4 / 8
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 20 Classes: - Laboratory: 20 Project/seminars: -		No. of credits 4
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 4 100% 4 100%
Responsible for subject / lecturer: dr inż. Damian Karwowski email: dkarwow@et.put.poznan.pl tel. +48 61 665 38 44 Faculty of Electronics and Telecommunications ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	1. Has a systematic knowledge of mathematical analysis, algebra and theory of probability (K1_W01) 2. Has a systematic knowledge, together with necessary mathematical background, of 1D signal theory; this knowledge allows him/her to understand the representation of signals and signal analysis in time domain and frequency domain (K1_W06) 3. Knows the principles of construction of computer programs ; has knowledge from the area of computing science; knows the syntax of C, C++, C#, MatLab (K1_W09)
2	Skills	1. Is able to extract information from Polish or English language literature, databases and other sources. Is able to synthesize gathered information, draw conclusions, and justify opinions (K1_U01) 2. Demonstrates the ability to solve problems related to signal analysis in time domain and frequency (K1_U10) 3. Is able to write software for basic computational algorithms, using popular programming languages (e.g. Matlab, C) (K1_U13)
3	Social competencies	1. Is aware of the limitations of his/her current knowledge and skills; is committed to further self-study (K1_K01)
Assumptions and objectives of the course: Familiarize students with the state of the art multimedia techniques, with methods of image and video analysis, with techniques of image and video compression and methods of their presentation. Familiarize students with basics of audio compression.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. The student has skills associated with the state of the art multimedia techniques, with methods of image and video analysis, knows techniques of image, video, and audio (basics) compression, and is familiar with image and video presentation solutions. - [K1_W11]		
Skills: 1. The student is able to solve basic problems associated with methods of image and video analysis, and also with methods of image, video, and audio (basics) compression. The student is aware of constraints of the methods. - [K1_U14]		
Social competencies: 1. The student understands the need for continuous training in order to improve skills. - [K1_K01]		

Assessment methods of study outcomes		
Written and/or oral exam from material presented during lectures.		
Reports from thematically homogenous laboratory exercises and/or an exams (+ project).		
Course description		
<p>Lectures:</p> <ul style="list-style-type: none"> - basics of one-dimensional signal processing - basics of image technology - image and video representation and compression - basics of audio technology <p>Laboratories:</p> <p>Laboratory excercises are related to selected topics that are presented during lectures.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Marek Domański, ?Obraz cyfrowy?, Wydawnictwa Komunikacji i Łączności, 2011 2. D. Salomon, G. Motta, Handbook of Data Compression, Springer-Verlag, 2010 3. K. Sayood, Introduction to Data Compression, Morgan Kaufmann, 2012 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. A. Czyżewski ?Dźwięk cyfrowy? 		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures (20 hours) + laboratories (20 hours)	40	
2. Consultation of lectures, laboratories, project	20	
3. The study of the literature, preparation for laboratory and preparing for classes	60	
Student's workload		
Source of workload	hours	ECTS
Total workload	100	4
Contact hours	65	3
Practical activities	40	2