



## Subject card

Subject name and code	Multimedia Medical Systems, PG_00048333						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	February 2023		Academic year of realisation of subject		2023/2024		
Education level	second-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Multimedia Systems -> Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Piotr Ody				
	Teachers		dr inż. Piotr Ody				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	15.0	15
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	15		1.0		9.0	25
Subject objectives	The aim is to familiaraze students with the current technologies used in multimedia medical systems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W03] Knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum.		Student analyzes, distinguishes and describes signal processing methods used in medicine and telemedicine.		[SW2] Assessment of knowledge contained in presentation		
	[K7_U06] can analyse the operation of components, circuits and systems related to the field of study; measure their parameters; examine technical specifications; interpret obtained results and draw conclusions		Student analyzes the operation of devices and methods that use multimedia technologies in medicine.		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task		
	[K7_U07] can apply advanced methods of process and function support, specific to the field of study		Student proposes new medicine and telemedicine solutions based on the signal processing.		[SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
	[K7_W08] Knows and understands, to an increased extent, the fundamental dilemmas of modern civilisation, the main development trends of scientific disciplines relevant to the field of education.		Student distinguishes multimedia technologies used in medicine and telemedicine, including technologies at the stage of clinical trials.		[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
	[K7_U02] can perform tasks related to the field of study as well as formulate and solve problems applying recent knowledge of physics and other areas of science		Student proposes sound and image processing algorithms for medical purposes.		[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		

Subject contents	<ol style="list-style-type: none"><li>1. Introduction applications of multimedia in medicine.</li><li>2. Division of contemporary telemedical systems.</li><li>3. Hardware configuration of telemedicine systems.</li><li>4. Specialised interfaces of computerised medical systems.</li><li>5. Methods of data archiving and transferring in telemedicine.</li><li>6. Applications of computer networks and satellite communication.</li><li>7. Medical information systems databases and medical records.</li><li>8. Remote and distributed multimedia diagnostic systems.</li><li>9. Medical teleconsulting. Medical videoconferencing.</li><li>10. Methods and tools of programmed therapy application of computer technology.</li><li>11. Applications of database to patients registering and monitoring and in epidemiology.</li><li>12. Application of multimedia telemedical programs to remote testing of communication senses.</li><li>13. Remote surgery with multimedia technology application.</li><li>14. Review of multimedia telemedical applications.</li><li>15. Credit for a course.</li></ol>		
Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Attendance	0.0%	20.0%
	Presentation on the indicated topic	51.0%	80.0%
Recommended reading	Basic literature	Akay M., Marsh A., Information Technologies in Medicine vol. 1, Wiley, 2001. Bronzino J.D., Medical Devices and Systems, Taylor & Francis, 2006. Dorf R.C., Sensors, Nanoscience, Biomedical Engineering, and Instruments, Taylor & Francis, 2006. Meijer G.C.M., Smart Sensor Systems, Wiley, 2008. Ritter A.B., Reisman S., Michniak B.B., Biomedical Engineering Principles, Taylor & Francis, 2005. Xiao Y., Chen H., Mobile Telemedicine, CRS Press, 2008. Xu Y., Li W.J., Lee K.K., Intelligent Wearable Interfaces, Wiley, 2008.	
	Supplementary literature	No requirements	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		