



Subject card

Subject name and code	Multimedia Medical Systems, PG_00048333						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
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 familiarize students with the current technologies used in multimedia medical systems.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[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.			[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject		
	[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.			[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
	[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.			[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools		
	[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.			[SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		
	[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		

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
	Presentation on the indicated topic	51.0%	80.0%
	Attendance	0.0%	20.0%
Recommended reading	Basic literature		<p>Akay M., Marsh A., Information Technologies in Medicine vol. 1, Wiley, 2001.  Bronzino J.D., Medical Devices and Systems, Taylor &amp; Francis, 2006.  Dorf R.C., Sensors, Nanoscience, Biomedical Engineering, and Instruments, Taylor &amp; Francis, 2006.  Meijer G.C.M., Smart Sensor Systems, Wiley, 2008.  Ritter A.B., Reisman S., Michniak B.B., Biomedical Engineering Principles, Taylor &amp; Francis, 2005.  Xiao Y., Chen H., Mobile Telemedicine, CRS Press, 2008.  Xu Y., Li W.J., Lee K.K., Intelligent Wearable Interfaces, Wiley, 2008.</p>
	Supplementary literature		No requirements
	eResources addresses		Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		