



## Subject card

Subject name and code	Sound Reinforcement - Laboratory, PG_00048329						
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	1	Language of instruction			Polish		
Semester of study	2	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 dr inż. Karolina Marciniuk mgr inż. Wanda Ludwikowska					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	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		2.0		8.0	25
Subject objectives	The aim of the course is to familiarize students with the room acoustics and sound reinforcement technology and knowledge transfer in the acoustic CADs.						

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 designs acoustic interiors (eg. radio studios, auditoria, musical theaters, churches, etc.)  The student is able to assess the quality of acoustic interiors.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
	[K7_U03] can design, according to required specifications, and make a complex device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment	Student designs rooms acoustics and sound reinforcement systems using acoustic CADs (CATT-Acoustic and ODEON systems).	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
	[K7_U08] while identifying and formulating engineering tasks specifications and solving these tasks, can: n- apply analytical, simulation and experimental methods, n- notice their systemic and non-technical aspects, n- make a preliminary economic assessment of suggested solutions and engineering workn	Student uses acoustic CAD (CATT-Acoustic and ODEON systems) to design and simulate acoustics of rooms and sound reinforcement systems.  The student is able to make an economic and technical analysis of choosed solutions in the field of acoustics and sound reinforcement.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools [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 designs sound reinforcement system using acoustic CAD (CATT-Acoustic and ODEON systems).	[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</li> <li>2. Acoustical design – "Odeon"</li> <li>3. Acoustical design – "CATT-Acoustic"</li> <li>4. Room sound system design</li> <li>5. Speech intelligibility testing</li> <li>6. Measurement of room acoustic parameters</li> <li>7. Real reinforcement system - technical tour</li> <li>8. 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
	Practical exercise	51.0%	100.0%
Recommended reading	Basic literature	G. Davis, R. Jones, Sound Reinforcement Handbook, YAMAHA, Hal Leonard Publ. Corp., 1990. K. Blair Benson, Sound Engineering Handbook, McGraw Hill, New York, 1988; L.L. Beranek, Concert and Opera Halls. How they Sound, Acoust. Soc. Amer., (1996). M. Tohyama, A. Suzuki, Reverberation Time in an Almost-Two-Dimensional Diffuse Field, J. Sound Vib., 111, 3, 391 -398 (1986). R. Glasgal, Ambiophonics: The Synthesis of Concert Hall Sound Fields in Home, Preprint No. 4113, 99th AES Convention, 6-9 October, New York 1995. T. Hallman, New Factors in Sound for Cinema and Television, Journal AES, 39:7/8, p. 529, 1991. Yamaha, Sound Reinforcement Application Guide, 2007 ( <a href="http://www.yamaha.com/yamahavgn/Documents/News/2007_SR_APP_guide.pdf">http://www.yamaha.com/yamahavgn/Documents/News/2007_SR_APP_guide.pdf</a> )	
	Supplementary literature	No requirements	
	eResources addresses	Adresy na platformie eNauzanie: Technika nagłaśniania - laboratorium - 2023 - Moodle ID: 28868 <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=28868">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=28868</a>	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		