



Subject card

Subject name and code	Materials Science and Equipment Design - project, PG_00048806						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2027/2028	
Education level	first-cycle studies	Subject group				Obligatory subject group in the field of study 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	Metrology and Electronic Systems Department -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Barbara Stawarz-Graczyk				
	Teachers		dr inż. Barbara Stawarz-Graczyk				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	15.0	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	1.0		9.0	25	
Subject objectives	Acquaint students with software for computer-aided design of Printed Circuit Boards (PCB) and with compiling of schematic drawing. Preparation by students (individually) a technical documentation of a selected, simple electronic instrument (schematic drawing, netlist, bill of materials, user library, PCB design with through hole or SMD mounting).						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[K6_W03] knows and understands, to an advanced 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		knows macroscopic properties of electronic and optoelectronic materials, their parameters, selection criteria for a given application, electronic and optoelectronic elements, their characteristics and basic phenomena related to them			[SW2] Assessment of knowledge contained in presentation	
Subject contents	<p>Course content – project</p> <p>Elements of the process of constructing devices. Basic assembly technologies (through-hole assembly, surface assembly). Getting to know computer programs supporting PCB design. Individual preparation by the student of the project of electrical connections and the design of the printed circuit of a simple electronic circuit, e.g. generator, amplifier, filter, comparator, power supply, etc. The student performs:</p> <ol style="list-style-type: none"> 1. introductory exercise, 2. record of the assumptions of the assumptions for the project, 3. schematic diagram, network of connections (netlist), list of elements (bill of materials), user's library 4. PCB design in the through-hole version (assembly diagram). 						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	evaluation of design's components	50.0%	100.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. Burcan J.: <i>Bases of technical drawings</i>. WN-T, Warszawa 2006. (in Polish). 2. Oleksiuk W., Paprocki K.: <i>Construction of mechanical subassemblies of electronic equioment</i>. WKiŁ, Warszawa 1997. (in Polish). 3. Laboratory documentation of the software, complementary *.pdf files -<i>User Manuals, Tutorials, data sheets</i>. 4. <i>Catalogues of ELFA, TME, FARNELL</i> 	
	Supplementary literature	<ol style="list-style-type: none"> 1. Michel K., Sapiński T.: <i>Technical drawings for electrical engineers. WN-T, Warszawa 1987. (In Polish)</i>. 2. <i>Spiralski L., Konczakowska A.: Technological and construction bases for electronic instrumentation and systems</i>. WSM students book, Gdynia 1997. (in Polish). 	
	eResources addresses		
Example issues/ example questions/ tasks being completed	preliminary project		
	documentation sheet		
	PCB design		
Practical activities within the subject	Not applicable		

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