

## Subject card

Radiation detectors, PG 00037318								
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October 2022	Academic year of			2025/2026				
	realisation of subject			2023/2020				
first-cycle studies		Subject group			Optional subject group			
					Subject group related to scientific research in the field of study			
Full-time studies		Mode of delivery			at the university			
4		Language of instruction			Polish			
7		ECTS credits			1.0			
general academic profile		Assessment form			assessment			
Division of Physics of Organic and Perovskite Photovoltaic Structures -> Institute of Physics and Applied Computer Science -> Faculty of Applied Physics and Mathematics -> Wydziały Politechniki Gdańskiej								
Subject supervisor	dr hab. inż. Grażyna Jarosz							
Teachers		dr hab. inż. Grażyna Jarosz						
Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
Number of study hours	15.0	0.0	0.0	0.0		0.0	15	
E-learning hours included: 0.0								
eNauczanie source addresses:								
Moodle ID: 1515 Detektory promieniowania https://enauczanie.pg.edu.pl/2025/course/view.php?id=1515								
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	
To acquaint students	with the constr	action and prin	ciples of opera	ation of e	e-m rad	iation detecto	ors	
Course outcome Subject outcome				itcome Method		Method of ve	of verification	
K6_W07		The student knows the basic parameters describing e-m radiation			[SW1] Assessment of factual knowledge			
K6_W02		The student knows the phenomena used in the detection of e-m radiation			[SW1] Assessment of factual knowledge			
Electromagnetic Radiation, Sources, and Interactions with Matter. 2. Thermal Radiation. 3. Radiation Detectors, Classification. 4. The Eye a Natural Detector of Electromagnetic Radiation. 5. Detector Parameters. Detector Noise. 6. Thermal Detectors: Bolometers, Thermocouples, Pyrometers. 7. Semiconductor Photon Detectors. 8. CCD Arrays. 9. Ionizing Radiation Detectors. 10. Ionization Chambers. 11. Scintillation Detectors. 12. X-Ray and Gamma-Ray Detectors Used in Medicine.								
Subject passing criteria		Passing threshold		Percentage of the final grade				
					266			
Supplementary literature			G.H. Rieke, Detection of Light, Cambridge University Press					
	eResources addresses							
	Technical Physics October 2022  first-cycle studies  Full-time studies  4  7  general academic pro Division of Physics of Computer Science -> Subject supervisor Teachers  Lesson type Number of study hours E-learning hours inclue eNauczanie source and Moodle ID: 1515 Dete https://enauczanie.pg Learning activity  Number of study hours  To acquaint students  Course outo K6_W07  K6_W02  1. Electromagnetic Ra Detectors, Classificati Parameters. Detector Semiconductor Photo 11. Scintillation Detector Semiconductor Photo Subject passing two test  Basic literature Supplementary literati	Gotober 2022  first-cycle studies  Full-time studies  4  7  general academic profile  Division of Physics of Organic and P Computer Science -> Faculty of App Subject supervisor  Teachers  Lesson type Lecture  Number of study hours  E-learning hours included: 0.0  eNauczanie source addresses:  Moodle ID: 1515 Detektory promieni https://enauczanie.pg.edu.pl/2025/cd  Learning activity Participation in classes includ plan  Number of study hours  To acquaint students with the constr  Course outcome  K6_W07  K6_W02  1. Electromagnetic Radiation, Source Detectors, Classification. 4. The Eye Parameters. Detector Noise. 6. Ther Semiconductor Photon Detectors. 8.  11. Scintillation Detectors. 12. X-Ray  Subject passing criteria two test  Basic literature  Supplementary literature	Technical Physics  October 2022  Academic y realisation  Full-time studies  Mode of de  4 Language of  7 ECTS cred  general academic profile  Division of Physics of Organic and Perovskite Phot Computer Science -> Faculty of Applied Physics and Subject supervisor  Teachers  Cesson type  Lecture  Lesson type  Lecture  Lesson type  Lecture  Number of study hours  E-learning hours included: 0.0  e-Nauczanie source addresses:  Moodle ID: 1515 Detektory promieniowania  https://enauczanie.pg.edu.pl/2025/course/view.php  Learning activity  Participation in didactic classes included in study plan  Number of study hours  To acquaint students with the constraction and print  Course outcome  Subj  K6_W07  The student k parameters de radiation  K6_W02  The student k phenomena u of e-m radiation  1. Electromagnetic Radiation, Sources, and Interact Detectors, Classification. 4. The Eye a Natural Dete Parameters. Detector Noise. 6. Thermal Detectors's Semiconductor Photon Detectors. 8. CCD Arrays. 5  Subject passing criteria  Pass  Subject passing criteria  Pass  Subject passing criteria  Pass  Subject passing criteria  Pass  Full Rieke, D  Subject passing criteria  G.H. Rieke, D	Technical Physics  October 2022  Academic year of realisation of subject first-cycle studies  Subject group  Full-time studies  Mode of delivery  4 Language of instructio Technical Segment academic profile  Division of Physics of Organic and Perovskite Photovoltaic Struct Computer Science -> Faculty of Applied Physics and Mathematic Subject supervisor  Teachers  Caracyna Jarosz dr hab. inż. Grażyna Jarosz Lesson type  Lecture  Lecture  Tutorial  Laboratory  Number of study  Number of study  Number of study  Participation in didactic classes included in study  plan  Number of study  Number of study  Number of study  Participation in didactic classes included in study  plan  Number of study  Number of study  Nours  To acquaint students with the constraction and principles of operatory  Course outcome  K6_W07  The student knows the basic parameters describing e-m radiation  K6_W02  The student knows the phenomena used in the dete of e-m radiation  1. Electromagnetic Radiation, Sources, and Interactions with Mat Detectors, Classification. 4. The Eye a Natural Detectors Bolometers, Technical Semiconductor Photon Detectors. 8. CCD Arrays. 9. Ionizing Rad 11. Scintillation Detectors. 8. CCD Arrays. 9. Ionizing Rad 11. Scintillation Detectors. 12. X-Ray and Gamma-Ray Detectors  Subject passing criteria  Passing threshold two test  Basic literature  G.H. Rieke, Detection of Lig  Supplementary literature  G.H. Rieke, Detection of Lig  Supplementary literature  G.H. Rieke, Detection of Lig	Technical Physics  October 2022  Academic year of realisation of subject  Subject group  Full-time studies  Mode of delivery  4 Language of instruction  7 ECTS credits  general academic profile  Assessment form  Division of Physics of Organic and Perovskite Photovoltaic Structures -> ICOmputer Science -> Faculty of Applied Physics and Mathematics -> Wys  Subject supervisor  Teachers  dr hab. in2. Grażyna Jarosz  Lesson type  Lecture  Tutorial  Laboratory  Project  Number of study  hours  E-learning hours included: 0.0  eNauczanie source addresses:  Moodle ID: 1515 Detektory promieniowania  https://enauczanie.pg.edu.pl/2025/coursel/view.php?id=1515  Learning activity  Participation in didactic classes included in study plan  Number of study  hours  To acquaint students with the constraction and principles of operation of expression	Technical Physics  October 2022  Academic year of realisation of subject  first-cycle studies  Subject group  Option Subject group  Option Subject group  Option Subject group  Academic year of realisation of subject group  Option Subject group  Option Subject group  It the Language of instruction  Technical Physics of Organic and Perovskite Photovoltaic Structures -> Institute Computer Science -> Faculty of Applied Physics and Mathematics -> Wydziały F Subject supervisor  Organical Physics of Organic and Perovskite Photovoltaic Structures -> Institute Computer Science -> Faculty of Applied Physics and Mathematics -> Wydziały F Subject supervisor  Organical Physics of Organic and Perovskite Photovoltaic Structures -> Institute Computer Science -> Faculty of Applied Physics and Mathematics -> Wydziały F Subject supervisor  Organical Physics of Organic and Perovskite Photovoltaic Structures -> Institute Computer Science -> Faculty of Applied Physics and Mathematics -> Wydziały F Subject supervisor  Organical Physics of Organic and Perovskite Photovoltaic Structures -> Institute Computer Science Computer Photon Detectors Science Computer Science Computer Photon Detectors Science Computer Scie	Technical Physics October 2022 Academic year of realisation of subject first-cycle studies Subject group Optional subject group relatives and the fell research in the field and the field research in	

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Example issues/ example questions/ tasks being completed	P-n diode as photon detector
Work placement	Not applicable

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