



Subject card

Subject name and code	Electric Lighting, PG_00055962						
Field of study	Power Engineering, Power Engineering, Power Engineering						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2023/2024		
Education level	first-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	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Electrical Power Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Stanisław Czapp				
	Teachers		dr inż. Kornel Borowski				
			prof. dr hab. inż. Stanisław Czapp				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	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	30		2.0		18.0	50
Subject objectives	To achieve basic knowledge and skills in designing of electrical lighting.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W03] knows the basics of automation and automatic regulation, knows the principles of the selection of electrical devices, drive systems and their control		Student specifies types of electrical lighting sources and describes their construction. Specifies basic photometric quantities.		[SW1] Assessment of factual knowledge		
	[K6_W08] has basic knowledge in the field of intellectual property protection and patent law, knows and understands the basic processes of energy production and use, knows and understands the principles of modern heating and power systems		Student performs calculation of lighting illuminance, also with the use of specialist software. Analyses costs of using installations with various types of electrical lighting sources.		[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Electric lighting. Light and vision. Photometric quantities, units and concepts. Colour qualities, colour temperature and colour rendering index. Types of lamps and luminaires. Construction and operation, properties. Distortion of voltage and current. Lighting design technology. Calculations of illumination. Selection of lamps and luminaires. Economic factors. Maintenance costs.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Written exam		50.0%		100.0%		

Recommended reading	Basic literature	<p>1. Markiewicz H.: Instalacje elektryczne. PWN, Warszawa 2018.</p> <p>2. Musiał E.: Instalacje i urządzenia elektroenergetyczne. WSiP, Warszawa 2008.</p> <p>3. Żagan W.: Podstawy techniki świetlnej. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2005.</p>
	Supplementary literature	1. Żagan W.: Iluminacja obiektów. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2003.
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Oświetlenie elektryczne [2023/24] - Moodle ID: 34702</p> <p>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34702</p>
Example issues/ example questions/ tasks being completed	Perform concept of indoor lighting using DIALux software.	
Work placement	Not applicable	