

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Fundamentals of lighting engineering		Code 1010324381010320832
Field of study Electrical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 8
Elective path/specialty Lighting Engineering	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 18 Classes: - Laboratory: 9 Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 2 100% 2 100%
Responsible for subject / lecturer: Małgorzata Zalesińska Ph.D. email: Malgorzata.Zalesinska@put.poznan.pl tel. 61 6652398 Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Knowledge of the basics of lighting engineering: the calculation and the measurement of light parameters, lighting equipment.
2	Skills	The ability to use knowledge in lighting engineering to carry out computations, measurement and evaluation of lighting parameters. Ability to effectively self-education in a field related to the chosen field of study.
3	Social competencies	Is aware of the need to broaden their competence, willingness to work together as a team.
Assumptions and objectives of the course: Grounding knowledge of the physiology of vision, and the relationship between the basic lighting parameters.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. . Describe the process of vision. List and describe the functions of the eye. Characterize the photometric properties of materials. Indicate the relationship between the parameters of light. - [[K_W05 ++, K_W14 +, K_W15 +++]]		
Skills: 1. Assess the impact of lighting on the quality parameters of view. Analyze the results. - [[K_U02 +++, K_U14 +++]]		
Social competencies: 1. Able to share and coordinate the work between team members. - [[K_K03 +]]		
Assessment methods of study outcomes		

<p>Lecture: assess the knowledge and skills listed on the written exam, student activity is taken into account when giving a final grade</p> <p>Laboratory exercises: assess the knowledge and skills associated with the implementation of the tasks your practice, the assessment report performed exercise.</p> <p>Get extra points for the activity in the classroom, especially for the following: ability to work within a team performing a task specific practice in the laboratory; developed aesthetic diligence reports and tasks, the self-study.</p>		
Course description		
<p>The basic relationship between the photometric parameters, the spatial distributions of the photometric parameters. Vision system - structure and basic operations of the eye, visual way, the types of visual sensations. Photometric properties of materials. Glare in lighting.</p> <p>Update 2017: Extension of the classical Stiles-Holladay equation, Photobiological hazards to the skin and eyes, Visibility Level, Human Biological System</p> <p>Applied methods of education: Multimedia presentation (including drawings, photographs, videos) supplemented by examples on the board, theory presented in close connection with practice.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> Bąk J., Pabiańczyk W.: Podstawy techniki świetlnej. Wyd. Pol. Łódzkiej, Łódź 1994. Żagan W.: Podstawy techniki świetlnej. Ofic. Wyd. Pol. Warszawskiej, Warszawa 2005 Laboratorium z techniki świetlnej. Praca zbiorowa. Wyd. Pol. Pozn. nr 1792, Poznań 1989. Lighting Handbook, Reference & Application. IES of Nofth America, New York 2010 Publication CIE 146:2002 & CIE 147:2002: CIE Collection on Glare 2000 Publication CIE 203:2012 A Computerized Approach to Transmission and Absorption Characteristics of the Human Eye 		
Additional bibliography:		
<ol style="list-style-type: none"> Hauser J.: Elektrotechnika.Podstawy elektrotermii i techniki świetlnej, Wyd. PP, Poznań, 2006 Publication CIE 186:2010: UV-A PROTECTION AND SUNSCREENS Publication CIE 187:2010: UV-C Photocarcinogenesis Risks from Germicidal Lamps Zalesińska M., Wandachowicz K.: Badanie systemu oświetlenia ewakuacyjnego na statkach i promach pasażerskich, IAPGOS 2015; 5(1): 14-19, p-ISSN 2083-0157, e-ISSN 2391-6761 (dostępne: http://e-iapgoss.pl/abstracted.php?level=4&id_issue=877971&dz=s6), DOI.6504/20830157.1148041 Zalesińska M., Wandachowicz K. Working conditions for the low location lighting system on passenger ships. (Zeszyty Naukowe Akademii Morskiej w Szczecinie) Scientific Journals of the Maritime University of Szczecin, no. 43 (115), 2015, pp 125-130, ISSN 1733-8670 (Printed), ISSN 2392-0378 (online) (http://repository.am.szczecin.pl/handle/123456789/769) 		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lecture classes	18	
2. Participation in laboratory activities	9	
3. Participation in consultation	10	
4. Homework	15	
5. Participation for an exam	15	
6. Exam	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	69	2
Contact hours	39	2
Practical activities	35	2