

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Fundamentals of lighting engineering</b>		Code <b>1010324391010320832</b>
Field of study <b>Electrical Engineering</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>5 / 9</b>
Elective path/specialty <b>Lighting Engineering</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: - Classes: - Laboratory: - Project/seminars: <b>9</b>		No. of credits <b>1</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>1 100%</b> <b>1 100%</b>
<b>Responsible for subject / lecturer:</b>  Małgorzata Zalesińska Ph.D. email: Malgorzata.Zalesinska@put.poznan.pl tel. 61 6652398 Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Knowledge of the basics of lighting engineering: the calculation and the measurement of light parameters, lighting equipment.
2	<b>Skills</b>	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	<b>Social competencies</b>	Is aware of the need to broaden their competence, willingness to work together as a team.
<b>Assumptions and objectives of the course:</b> Grounding knowledge of fundamentals of lighting engineering.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. List and describe the method of calculation of basic lighting parameters. - [[K_W06 ++,K_W14 +, K_W15 +++]]		
<b>Skills:</b>		
1. Perform calculations of basic lighting simplified methods. - [[K_U17 ++, K_U22 +]]		
<b>Social competencies:</b>		
1. . Student understands and knows the need continuous training opportunities, improving professional skills, personal and social. Able to work in a group. Able to share and coordinate the work between team members. - [[K_K03 +]]		
<b>Assessment methods of study outcomes</b>		
Project: evaluate the knowledge and skills associated with the implementation of the project. 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.		
<b>Course description</b>		

Calculation of lumines flux. Determination of illuminance by a point. Calculation of luminance.		
<b>Basic bibliography:</b>		
1. Dybczyński Wł.: Miernictwo promieniowania optycznego. Wyd. Pol. Białostockiej, Białystok 1996.		
2. Helbig E: Podstawy fotometrii. WNT, Warszawa 1975.		
3. Laboratorium z techniki świetlnej. Praca zbiorowa. Wyd. Pol. Pozn. nr 1792, Poznań 1989.		
4. Normy przedmiotowe		
5. Bąk J., Pabiańczyk W.: Podstawy techniki świetlnej. Wyd. Pol. Łódzkiej, Łódź 1994.		
6. Żagan W.: Podstawy techniki świetlnej. Ofic. Wyd. Pol. Warszawskiej, Warszawa 2005		
7. Technika Świetlna' 09. Poradnik. Informator. Wyd. PKOŚ, Warszawa 2009		
<b>Additional bibliography:</b>		
1. Felhorski W., Stanioch W.,: Kolorymetria trójchromatyczna. WNT, Warszawa 1973.		
2. Żagan W.: Podstawy techniki świetlnej. Ofic. Wyd. Pol. Warszawskiej, Warszawa 2005		
3. Lighting Handbook, Reference & Application. IES of Nofth America, New York 2010		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Participation in project activities	9	
2. Participation in consultation.	9	
3. Participation for colloquium	7	
4. Colloquium	2	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	27	1
Contact hours	20	1
Practical activities	16	1