

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Lighting design</b>		Code <b>1010325341010326102</b>
Field of study <b>Electrical Engineering</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 4</b>
Elective path/specialty <b>Lighting Engineering</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-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>  dr inż. Małgorzata Zalesińska email: Malgorzata.zalesinska@put.poznan.pl tel. 61 665 2398 Elektryczny ul. Piotrowo 3A 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Established knowledge base in the field of lighting engineering: the calculation and measurement of basic lighting parameters, lighting equipments, lighting design requirements.
2	<b>Skills</b>	The ability to use knowledge in lighting engineering to perform the calculation 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> Detailed learn the rules and methods of designing lighting systems.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Knowledge of lighting engineering used to design lighting systems. - [K_W13++]		
2. Characterize the factors influencing energy efficiency and economical lighting. - [K_W13+, K_W05+]		
3. Perform multi-criteria analysis of the selection of lighting equipment to work on the lighting system - [K_W14+, K_W05+]		
<b>Skills:</b>		
1. Apply the rules for physiological, aesthetic, economic lighting design. Analyze the energy efficiency of indoor and outdoor lighting. Assess the economic efficiency of the lighting system. - [K_U02+++ , K_U14+++]		
<b>Social competencies:</b>		
1. Able to work in a group. Able to share and coordinate the work between team members. - [K_K02 ++ ]		
<b>Assessment methods of study outcomes</b>		
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: comments related to the improvement of teaching materials; diligence and accuracy in performing the tasks.		

<b>Course description</b>		
Psychophysiological rules, aesthetic and economical in the selection of lighting. General rules of architectural illumination. Energy efficiency of lighting systems. Economic efficiency of lighting. The impact of the light on the matter, lively and inanimate objects.		
<b>Basic bibliography:</b>		
1. Bąk J., Technika Oświetlania, PWN, Warszawa 1981.		
2. Goc W, Kielboń M., Przygodzki A., Elementy audytu oświetlenia, Wydawnictwo Politechniki Śląskiej, Gliwice 2010		
3. Lighting Handbook, Reference & Application. IES of Nofth America, New York 2010.		
4. Technika Świetlna ?09. Poradnik ? Informator. Wyd. PKOś, Warszawa 2009		
5. Normy przedmiotowe		
<b>Additional bibliography:</b>		
1. Bąk J., Pabiańczyk W.: Podstawy techniki świetlnej. Wyd. Pol. Łódzkiej, Łódź 1994.		
2. Żagan W.: Podstawy techniki świetlnej. Ofic. Wyd. Pol. Warszawskiej, Warszawa 2005		
<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	10	
4. Colloquium	12	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	30	1
Contact hours	22	1
Practical activities	23	1