COURSE DESCRIPTION CARD

Faculty of Electrical Engineering									
Field of study	Electrical and Electronic Engineering							Degree level and programme type	bachelor's degree, full time programme
Specialization/ diploma path	-							Study profile	-
Course name	Basics of lighting technology							Course code	IS-FEE-10002W
								Course type	elective
Forms and number of hours of tuition	L	C	LC	Р	sw	FW	S	Semester	winter
	30		15					No. of ECTS credits	5
Entry requirements							-		
Course objectives	Familiarizing students with basic light quantities, units and electric light sources. Using luxmeter and luminance meter. Teaching the methodology of main photometric measurements. Familiarizing with current problems in illuminating engineering								
Course content	Vision and light. Basic light quantities and units (luminous flux, luminous intensity, illuminance, luminance). Spectral distribution of light quantities. Lambert law. Correlation between illuminance and distance from the source. Types and parameters of light sources. Spatial distribution of light intensity. Basic measurements in light technology. Procedures of chosen light measurements. Using chosen light meters (luxmeter, luminance meter). Standarization in lighting technology - introduction to lighting design. Light - human interaction. Energy efficiency in lighting.								
Teaching methods	laboratory experiments, lecture/consultations, self-work, discussion.								
Assessment method	lecture: written exam; laboratory class: verification of preparation for classes, evaluation of the reports.								
Symbol of learning outcome	Learning outcomes						Reference to the learning outcomes for the field of study		
LO1			lists	and e	xplains	slight	quanti	ties;	,
LO2	shortly characterizes electrical and optoe sources;					electronic light			
LO3		car	ı use tl	ne ligh			minan	ice meter;	
LO4	can use the lightmeter and luminance m performs measurements of chosen light qua								
LO5		-						ed with lighting.	
Symbol of learning		•		-				outcomes	Type of tuition during which the outcome is

outcome		asse	ssed				
L01	exam, evaluation of the report on exercise, a discussion during the laboratory classes	L,LC					
LO2	exam, evaluation of the report on exercise, a discussion during the laboratory classes	L,LC					
LO3	observation during the laboratory classes, reports	LC					
LO4	observation during the laboratory classes, reports	LC					
LO5	observation during the laboratory classes, reports, evaluation of case studies	L,LC					
	Student workload (in hours)	No. of hours					
	participation in the laboratory	15					
Calculation	preparation for the laboratory	15					
	description of laboratory reports	10					
	participation in lecture / student - teacher consultations	30					
	preparing to pass the exam	20					
	case studies/homeworks	40					
	TOTAL:	130					
	HOURS	No. of ECTS credits					
Student wor	45	2					
	Student workload – practical activities						
Basic references	 Standard CIE S 017/E:2011: International Lighting Vocabulary, 2011. IESNA Lighting Handbook, New York, 2000. Winchip S.: Fundamentals of lighting. Fairchild Books, 2011. Lighting fundamentals handbook (technical report). Electric Power Research Institute, 1992. Ryer A.: Light measurement handbook. International Light, 1998. Ganslandt R., Hoffmann H.: Handbook of lighting design. 1992. Khan T.Q. LED Lighting - Technology and Perception, Wiley 2015 						
Supplementary	1. Taylor A.: Illumination fundamentals. Lighting Research Cen	ter, 2000.					
references	2. Csele M.: Fundamentals of light sources and lasers. Wiley In	terscience, 2	2004.				
Organisational unit conducting the course	Department of Photonics, Electronics and Light Technique Date of issui program						
Author of the programme	Urszula Błaszczak, Ph.D. Eng.	30.01.2020					
I - lecture C - clas	ses, LC – laboratory classes, P – project, SW – specialization wo	rkchan EW	- fiold work				

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,