

## COURSE DESCRIPTION CARD

Faculty of Electrical Engineering										
Field of study	Electrical and Electronics Engineering							Degree level and programme type	bachelor's degree, full time programme	
Specialization/ diploma path	-							Study profile	-	
Course name	Automotive lighting							Course code	IS-FEE-10023S	
								Course type	elective	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	summer	
	15		15					No. of ECTS credits	4	
Entry requirements	-									
Course objectives	To familiarize students with automotive lighting. Presentation of design methods of lighting equipment in automotive lighting. Classification and investigation of light fittings used in automotive lighting. Presentation of methods of luminous flux emission verification in automotive lighting. Examination of the characteristics of road lighting and horizontal and vertical marking.									
Course content	Automotive lighting. Light sources for automotive lighting equipment. Automotive lighting control systems. Headlamps and signal lamps design methods. Photometric measurements of automobile fittings. Construction of daytime running lamps, road lamps, signal lamps and others. Adaptive systems in automotive lighting.									
Teaching methods	laboratory experiments, consultations, lecture, 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 distinguishes appropriate lighting equipment used in automotive engineering									
LO2	describes the design principles of automobile lamps;									
LO3	measures required illumination distributions caused by automobile lamps;									
LO4	selects components and light sources for automobile lamps properly;									
LO5	classifies and explains control methods in automotive lighting.									
LO6										

Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
LO1	exam, duscussion during laboratory classes	L, LC	
LO2	exam	L	
LO3	evaluation of the report on exercise, discussion during the laboratory classes	LC	
LO4	exam, duscussion during laboratory classes	L, LC	
LO5	exam, duscussion during laboratory classes	L, LC	
LO6			
Student workload (in hours)		No. of hours	
Calculation	attending the lecture	15	
	participation in the laboratory classes	15	
	preparation for the laboratory classes	20	
	preparation of laboratory reports or doing homework assignments (homework)	20	
	participation in consultations	10	
	preparation to the exam	30	
	TOTAL:	110	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		35	1,5
Student workload – practical activities		35	1,5
Basic references	1. Wordenweber B., Wallaschek J., Boyce P., Hoffman D.: Automotive lighting and human vision, Springer, 2007. 2. Bauer H.: Automotive handbook, Bosch, 2000.		
Supplementary references	1. E/ECE/TRANS/505, addendum 36, regulation no. 37, rev. 5: Uniform provisions concerning the approval of filament lamps for use in approved lamp units on power; Driven vehicles and of their trailers. 2. E/ECE/TRANS/505, addendum 3, regulation no. 4, rev. 2: Uniform provisions for the approval of devices for the illumination of rear registration plates of motor vehicles (except motor cycles) and their trailers. 3. E/ECE/TRANS/505, addendum 48, regulation no. 48, rev. 6: Uniform provisions concerning the approval of vehicles with regard to the installation of lighting and light; Signalling devices.		
Organisational unit conducting the course	Department of Photonics, Electronics and Lighting Technology	Date of issuing the programme	
Author of the programme	Maciej Zajkowski, Ph.D. Eng. Urszula Blaszcak, Lukasz Budzynski	30.01.2020	

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

S – seminar