STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Lighting design		**1010321361010326001**

Field of study	Profile of study (general academic, practical)	Year /Semester
Electrical Engineering	**general academic**	**3 / 6**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Lighting Engineering	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**full-time**

No. of hours				No. of credits
Lecture: **-**	Classes: **-**	Laboratory: **-**	Project/seminars: **30**	**2**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
other	**university-wide**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**2 100%**
Technical sciences	**2 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Knowledge of the basics of lighting engineering: the calculation and measurement of lighting quantities, lighting equipment and general requirements for lighting design. Basic knowledge of computer science, physics, electrical engineering and illuminating engineering.
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:

Understanding the basics of lighting requirements and lighting design methods. Understanding the basics of practical methods of designing lighting systems. Ability to perform the calculation of basics lighting quantities.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Able to characterize and describe the basic computer method of calculating the lighting quantities. - [K_W11 ++, K_W15 +++]

Skills:

1. Can perform the calculation of lighting quantities using available software. Is able to do lighting project with regard to the requirements of standards. - [K_U13 ++, K_U17 ++]

Social competencies:

1. Is aware of and understands the importance and impact of non-technical aspects of electrical engineering activities, including the impact of light and lighting on the environment and the consequent responsibility for decisions. Can work in a group. Can coordinate the work between team members. - [K_K01 ++]

Assessment methods of study outcomes

Oral and written examination, laboratory reports.

Course description

Calculation of luminance and illuminance distribution in interiors and open grounds. Practical study of using computer software for lighting design. Making some example calculation for the following application fields: offices, educational buildings, industrial buildings, shops and stores, roads, parking, sports facilities. Update 2017: technical specifications of luminaires with LED modules that are currently available on the lighting market. Applied learning methods: project - team work, detailed review and discussion on the obtained results, case study, multimedia presentation.

Basic bibliography:

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.
3. Normy przedmiotowe.
4. Pracki P.: Projektowanie oświetlenia wnętrz. Oficyna Wyd.Politechniki Warszawskiej 2011, ISBN: 9788372079282.

Additional bibliography:

1. Lighting Handbook, Reference &Application. IES of Nofth America, New York 2010

Result of average student's workload

Activity	Time (working hours)
1. Participation in project activities.	30
2. Participation in consultations.	5
3. Preparation of the concept and development of lighting design.	30

Student's workload

Source of workload	hours	ECTS
Total workload	65	2
Contact hours	35	1
Practical activities	65	2