STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Computer aided design**		Code **1010324391010322818**
Field of study **Electrical Engineering**	Profile of study (general academic, practical) **(brak)**	Year /Semester **5 / 9**
Elective path/specialty **Lighting Engineering**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **part-time**	

No. of hours				No. of credits
Lecture: **-** Classes: **-** Laboratory: **-** Project/seminars: **9**				**1**

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

Education areas and fields of science and art **technical sciences** **Technical sciences**	ECTS distribution (number and %**)** **1 100%** **1 100%**

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, thermokinetics 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:

Knowledge of advanced methods of lighting design. Understanding the basics of practical methods of designing lighting systems using computer aided design (CAD). Ability to perform the calculation of basic lighting quantities.

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

Knowledge:

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

Skills:

1. Can perform the calculation of lighting quantities using computer aided design (CAD). Able to do lighting design 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 ++, K_K03 ++]

Assessment methods of study outcomes

Assessment of the knowledge and skills associated with the implementation of the project.

Course description

Understanding the issues related to computer methods of calculate the lighting quantities. Practical test in the use of computer-aided design methods (CAD). Implementation of sample calculations for typical indoor lighting solutions. Visualization of the luminance distribution.

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.	9
2. Participation in consultations.	6
3. Preparation of the concept and development of lighting design.	9

Student's workload

Source of workload	hours	ECTS
Total workload	24	1
Contact hours	15	1
Practical activities	24	1

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