



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Lighting design

### Course

Field of study

Electrical Engineering

Area of study (specialization)

Lighting Engineering

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

15

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

Sandra Mroczkowska MSc., Eng.

Responsible for the course/lecturer:

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### Prerequisites

The student starting this subject should have a basic knowledge of lighting technology, in particular lighting design and lighting equipment. It should have basic information about the construction and operation of lighting equipment, taking into account their impact on the environment

### Course objective

Advanced knowledge of the principles and methods of lighting design. Deepening knowledge of the environment, advanced tools and possibilities of 3ds MAX program. The ability to create computer visualization of object illumination, including real lighting equipment. Ability to perform calculations of luminance distribution on the facade of the illuminated object.



### Course-related learning outcomes

#### Knowledge

1. has advanced knowledge of lighting technology in the field of lighting design
2. has advanced knowledge of lighting technology in the field of construction, application and selection of lighting equipment used in the illumination of architectural objects

#### Skills

1. has the ability to formulate hypotheses and conclusions related to engineering problems arising from a given design task while designing illumination lighting
2. is able to work individually and in a team, carrying out design tasks within the deadline
3. has the ability to create realistic visualizations of computer illuminations of objects based on real photometric files, taking into account aesthetic, functional and economic criteria

#### Social competences

1. Ma świadomość potrzeby rozwijania dorobku zawodowego i przestrzegania zasad etyki zawodowej

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Skills acquired in the course of the subject are verified on the basis of two projects of the concept of computer visualization of illumination of a selected architectural object, based on selected methods of illumination. The project takes into account the ability to model the body of the object based on photographs or architectural plans, assigning specific materials in the scene and the selection and appropriate placement, in accordance with the assumptions of the selected method of illumination, lighting equipment.

### Programme content

1. Deepening knowledge of the construction, application and selection of lighting equipment used in the illumination of architectural objects
2. Deepening knowledge of the principles and methods of illuminating objects.
3. Deepening of issues related to creating visualizations of computer illuminations of objects in the 3ds MAX program.
4. Performing a visualization of the illumination of the selected object based on photographs or architectural plans
5. Development of two concepts for illuminating an object based on the principles and methods of illumination.
6. Carrying out calculations of the luminance distribution on individual facade walls.



## Teaching methods

1. Multimedia presentation enabling analysis of illumination rules and methods and visualization effects obtained

## Bibliography

### Basic

1. Żagan W.: Iluminacja obiektów. Ofic. Wyd. Pol. Warszawskiej, Warszawa 2003.
2. Kelly L.Murdock 3ds MAX 2012 Helion 2012

### Additional

1. Lighting Handbook, Reference &#38;#38;Application. IES of Nofth America, New York 2010
2. Górczewska M.,Mroczkowska S., Iluminacja kościoła p.w. Św. Józefa w Poznaniu. Poznan University of Technology, Academic Journals, Electrical Engineering, Issue 83, Poznań 2015, s.229-236, ISSN 1897-0737

## Breakdown of average student's workload

	Hours	ECTS
Total workload	35	1,0
Classes requiring direct contact with the teacher	20	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	20	1,0

<sup>1</sup> delete or add other activities as appropriate