STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Colorimetry		**1010321261010326000**
Field of study: **Electrical Engineering**	Profile of study (general academic, practical): **(brak)**	Year /Semester: **3 / 6**
Elective path/specialty: **Light Engineering**	Subject offered in: **polish**	Course (compulsory, elective): **obligatory**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time): **full-time**	
No. of hours: Lecture: **1** Classes: **-** Laboratory: **1** Project/seminars: **-**		No. of credits: **2**
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**		ECTS distribution (number and %): **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 thermokinetics.
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:

The student should obtain basic knowledge of colorimetry. Theoretical and practical study of colorimetric measurements methods.

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

Knowledge:

1. Can describe the basic colorimetric systems, define colour parameters and explain colorimetric parameters of lamps. - [K_W05 ++, K_W15 +++]

Skills:

1. Can carried out colour measurements. Can calculate the colorimetric parameters of spectral distributions. Able to analyse the results. - [K_U02 ++, K_U05 ++, K_U14 ++]

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

Basics of colorimetry. Additive and subtractive mixture of colours. Description of trichromatic systems. Colorimetric measurements. Colour management systems for computer equipments. Testing of colorimetric properties of lamps. Calculation of colorimetric quantities.

Basic bibliography:

1. Żagan W.: Podstawy techniki świetlnej. Ofic. Wyd. Pol. Warszawskiej, Warszawa 2005
2. Helbig E: Podstawy fotometrii. WNT, Warszawa 1975.
3. Felhorski W., Stanioch W.,: Kolorymetria trójchromatyczna. WNT, Warszawa 1973.
4. Schanda J., Handbook of Applied Photometry, chapter 9 Colorimetry. DeCusatis Casimer (EDT).
5. Bunting F., Fraser B., Murphy C.: Profesjonalne zarządzanie barwą, wydanie II. Helion 2006, ISBN: 83-7361-669-1.

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 lectures	15
2. Participation in laboratories	15
3. Participation in consultations	5
4. Preparation for laboratory exercises and develop reports	15
5. Exam preparation	15

Student's workload

Source of workload	hours	ECTS
Total workload	65	2
Contact hours	35	1
Practical activities	30	1