

Course description

Course abbreviation:	KEE/SVT	Page:	1 / 3
Course name:	Lighting Engineering		
Academic Year:	2018/2019	Printed:	24.05.2024 16:10

Department/Unit /	KEE / SVT			Academic Year	2018/2019
Title	Lighting Engineering			Type of completion	Pre-Exam Credit
Accredited/Credits	Yes, 3 Cred.			Type of completion	
Number of hours	Lecture 2 [Hours/Week] Tutorial 1 [Hours/Week]			Course credit prior to	NO
Occ/max	Status A	Status B	Status C	Counted into average	NO
Summer semester	0 / -	30 / -	1 / -	Min. (B+C) students	10
Winter semester	0 / -	0 / -	0 / -	Repeated registration	NO
Timetable	Yes			Semester taught	Summer semester
Language of instruction	Czech			Internship duration	0
Optional course	Yes				
Evaluation scale	S N				
No. of hours of on-premise					
Auto acc. of credit	Yes in the case of a previous evaluation 4 nebo nic.				
Periodicity	K				
Substituted course	None				
Preclusive courses	N/A				
Prerequisite courses	N/A				
Informally recommended courses	N/A				
Courses depending on this Course	N/A				

Course objectives:

To familiarize students with elements of luminary technique, possibilities of indoor and outdoor illumination by daily, artificial or combined light. Further to allow basic measurements to students with using modern programs.

Requirements on student

Credit: mandatory participation in exercises, to elaborate papers from measurements, credit test (successfully 75%).

Content

Lectures:

1. Basic terms of artificial lighting, human eye characteristics, area angle.
2. Luminary values with its units, luminary characteristics of materials.
3. Possibilities of interior illumination by daily light.
4. Production of artificial light, basic parameters of luminous sources.
5. Luminous sources characteristics for illuminating.
6. The main parts of lighting fittings, lighting characteristics of light fitting.
7. Dot calculation of illuminance of point lamp and linear lamp.
8. Dot calculation of illuminance of rectangle lamp, multiple reflections.
9. Flow method of design of illuminating system in indoor area. Define of keeping factor z.
10. Quantity and quality parameters of illuminating systems.
11. Illumination of indoor area by daily, artificial or combined light, types of illuminating systems.
12. Illumination of outdoor areas for work, sport. Spurious light.
13. Illumination of streets.

Exercises:

Safety instructions, measurement of luminous intensity, lighting factor D, illuminance, design of illuminating systems of artificial lighting, familiarize with some calculation programs, credit test.

Fields of study

Guarantors and lecturers

- **Guarantors:** Doc. Ing. Karel Noháč, Ph.D. (100%)
- **Lecturer:** Doc. Ing. Karel Noháč, Ph.D. (100%), Ing. Lenka Raková, Ph.D. (100%)
- **Tutorial lecturer:** Ing. Oldřich Kroupa, Ph.D. (100%), Doc. Ing. Karel Noháč, Ph.D. (100%), Ing. Lenka Raková, Ph.D. (100%)

Literature

- **Recommended:** Linda, Josef. *Elektrické světlo 1.* Plzeň (ZČU), 1993. ISBN 80-7082-094-2.
- **Recommended:** Linda, Josef. *Elektrické světlo 2.* Plzeň : ZČU, 1994. ISBN 80-7082-167-1.
- **Recommended:** Habel, Jiří. *Světelná technika A.* 1. vyd. Praha : ČVUT, 1982.

Time requirements

All forms of study

Activities	Time requirements for activity [h]
Contact hours	26
Preparation for comprehensive test (10-40)	32
Preparation for laboratory testing; outcome analysis (1-8)	8
Practical training (number of hours)	13
Total:	79

assessment methods

Knowledge - knowledge achieved by taking this course are verified by the following means:

Test

prerequisite

Knowledge - students are expected to possess the following knowledge before the course commences to finish it successfully:

No particular prerequisites specified.

teaching methods

Knowledge - the following training methods are used to achieve the required knowledge:

Lecture supplemented with a discussion

Laboratory work

Project-based instruction

learning outcomes

Knowledge - knowledge resulting from the course:

Students will know elements of luminary technique, they will be able to realize basic luminary calculations.

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Electrical Engineering and Informatics	Bachelor	Full-time	Electrical Engineering	1	16	2018	Povinné předměty 3. roč. FEL - obor ELT	A	3	LS

Study Programme	Type of	Form of	Branch	Stage	St. plan	v. Year	Block	Status	R.year	R.
Applied Electrical Engineering	Bachelor	Combined	Applied Electrical Engineering	1	16	2018	blok BX2	B	3	LS
Electrical Engineering and Informatics	Bachelor	Full-time	Electrical and Power Engineering	1	16	2018	Blok ELE4	B	3	LS
Applied electrical engineering	Bachelor	Full-time	Applied electrical engineering	1	16	2018	Doporučené výběrové předměty AEL	C		LS
Celouniverzitní nabídka	Undergraduate Master	Full-time	Celouniverzitní nabídka	1	1	2018	Energetika	C		LS
Electrical Engineering and Informatics	Bachelor	Full-time	Commercial Electrical Engineering	1	16	2018	Doporučené výběrové předměty KOE	C		LS