Technology
Arts Sciences
TH Köln

Course
BS - Simulation of Illumination Systems

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General information

Long name	Simulation of Illumination Systems
Approving CModule	CSO_MaET
Responsible	Prof. Dr. Holger Weigand Professor Fakultät IME
Level	Master
Semester in the year	winter semester
Duration	Semester
Hours in self-study	60
ECTS	5
Professors	Prof. Dr. Holger Weigand Professor Fakultät IME
Requirements	Geometric optics and wave optics Radiation physics and photometry Optical design Technical English
Language	German and English
Separate final exam	Yes

Final exam

Details

The proof of achievement is based on a software project. The corresponding project work is started and supervised during the attendance. In addition, there is a supervision of the project work outside the attendance, similar to supervising theses.

Prerequisite for admission to the examination is the preparation of a support request in English. The support request may be, for example, an error report or a feature request and must have at least one system file of the simulation software for explanation.

Minimum standard

For the successful realization of the software project, basic knowledge of the used simulation software is required. Furthermore, the modelling of real optical systems in the context of the software used must be understood.

Exam Type

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Prerequisite for admission to the examination is the preparation of a support request in English. The support request may be, for example, an error report or a feature request and must have at least one system file of the simulation software for explanation.

Lecture / Exercises

Learning goals

Knowledge

Modelling of non-imaging optics
Connection of imaging and non-imaging optics
Modelling luminous flux-specific evaluation parameters
Basic concepts of luminous flux simulation
Basics of non-sequential raytrace simulation

Skills

Non-sequential construction of illumination systems
Analysis of illumination systems
Tolerancing of illumination systems
Optimization of illumination systems

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	1
Exercises (whole course)	1
Exercises (shared course)	1
Tutorial (voluntary)	0

Separate exam

none

Practical training

Learning goals

Skills

Independent development / programming of simulation scripts with the help of English-language software documentation

Successful use of raytrace simulation software to design non-imaging optics based on real specifications

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Practical training	2
Tutorial (voluntary)	0

Separate exam

Exam Type

other course-related type of test

Details

Required is the preparation of a support request in English. The support request may be, for example, an error report or a feature request and must have at least one system file of the simulation software for explanation.

The support request provides the prerequisite for admission to the examination.

Minimum standard

The support request requires a basic knowledge of English communication.

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