Technology
Arts Sciences
TH Köln

Course Manual PHO3

Phototechniology 3

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General information

Long name	Phototechniology 3
Approving CModule	PHO3_BaMT
Responsible	Prof. Dr.-Ing. Dirk Poggemann Professor Fakultät IME
Valid from	winter semester 2021/22
Level	Bachelor
Semester in the year	winter semester
Duration	Semester
Hours in self-study	90
ECTS	6
Professors	Prof. Dr.-Ing. Dirk Poggemann Professor Fakultät IME
Requirements	Basic Knowledge in Electronics (Module "Electronics") and Optics (Modules "Phototechnology 1" and "Phototechnology 2")
Language	German
Separate final exam	Yes

Literature

Pedrotti/Bausch/Schmitt, Optik für Ingenieure, Springer

Schröder/Treiber, Technische Optik, Vogel

Holst/Lomheim, Image Sensors and Signal Processing for Digital Still Cameras, Taylor & Francis

Final exam

Details	Written exam with arithmetic and comprehension excercises
Minimum standard	50% of maximum points
Exam Type	EN Klausur

− Lecture / Exercises

Learning goals

Goal type	Description
Knowledge	Basics in Camera Technology Image Capturing Cameratypes Setup and Adjustment RAW-Date-/JPEG-mode Viewfinder Camera Exposure Measurement Autofocus Electronic Imaging Photoelectric Effect Semiconductors Photodiode CCD-Technology CMOS-Technology Color Sensors Signal Characteristics and Specifications of Digital Image Sensors

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	3
Tutorial (voluntary)	0

Special requirements

none

Accompanying material	electronic slides as presented during lectures electronic collection of excercises
Separate exam	No

− Practical training

Learning goals

Goal type	Description
Skills	- utilize measurement of photographs and light - determine sensitometric characteristics of digital cameras by measurements - analyze Raw-Data of dark images

Special requirements

none

Accompanying material	electronic description of lab-excercises
Separate exam	Yes

Expenditure classroom teaching

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

Separate exam

Exam Type	EN praxisnahes Szenario bearbeiten (z.B. im Praktikum)
Details	short technical discussion during lab excercise Reports about lab excercises
Minimum standard	Reports for all lab excercises must be delivered in correct form with correct results