TH Aschaffenburg
university of applied sciences

Engineering Basics I: Principles of Technical Optics & Practice

Course number	6314
Hours per week:	6
ECTS:	6
Scheduled:	Winter Term
Format:	seminaristic teaching + practice exercises
Examination:	Written exam: 90 minutes
Lecturer:	Prof. Dr. Thorsten Döhring; Prof. Dr.-Ing. Ludger Schneider-Störmann
Objectives:	Knowledge: After the lecture, the students know the physical and technical terms of technical optics in English language, the basic laws of geometrical optics and the particle-wave-dualism. Skills: The students are able to apply calculation methods of geometrical optics and they are able to analyze optical problems, to abstract them and to select the suitable calculation method. In combination with the lectures in mechanics and electronics, the students are able to solve interdisciplinary problems. Competencies: The students are enabled to analyze optical problems and to simplify them for corresponding calculations. Therefore, they are able to access unknown problems of technical optics and deduce corresponding sales solutions.
Contents:	Units and metric prefixes Photometric and Radiometric Values Polarization Reflection Refraction Projections Lens Errors Cylindrical Lenses Fresnel-Type Lenses Lens Systems Cameras The Optic Norm ISO 10110
Recommended Reading:	Galen C. Duree: Optics For Dummies, John Wiley & Sons Grant R. Fowles: Introduction to Modern Optics, Dover Pubn Inc. Werner Geafer: Grundlagen der Optik, print systems Medienverlag