

Course Description – Winter 2021/2022

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| Title | Laser Technology |
| Faculty | Mechanical Engineering |
| Professor | Prof. Dr. rer. nat. U. Behn |
| ECTS | 5 |
| Level | Bachelor |
| Requirements | - |
| Add. Information | https://www.hs-schmalkalden.de/hochschule/fakultaeten/fakultaet-maschinenbau/internationales/englische-kurse.html |
| Content | <p>On completion of this course, the students should have some background knowledge on the special properties of laser radiation and the functional principles of a laser. They should know the design and some typical applications of some basic laser types. They should know how to measure the beam quality of a laser and the fundamentals of frequency doubling and the generation of short pulses.</p> <p>Physical properties of laser radiation; laser principles: light amplification, 4-level-laser system, gain profile and longitudinal modes, laser resonator, transverse modes; generation of short pulses, frequency doubling, propagation of Gaussian and non-Gaussian beams; laser types: HeNe-laser, CO₂-laser, Nd:YAG-laser, fiber laser; laser applications: interferometry, holography, materials processing</p> |