

Modulname	<b>PI Laser Technology</b>	
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Udo Behn	
Qualifikationsziele	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.	
Modulinhalte	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, CO <sub>2</sub> -laser, Nd:YAG-laser, fiber laser; laser applications: interferometry, holography, materials processing	
Lehrformen	Vorlesung (2 SWS) Praktikum (2 SWS)	
Voraussetzungen für die Teilnahme	Fundamentals of Physics especially wave optics	
Literatur/multimediale Lehr- und Lernprogramme	J. Wilson/J.F.B. Hawkes, "Lasers Principles and Applications", Prentice Hall, ISBN 0-13-523705-X B. Hitz/J.J. Ewing/J. Hecht, „Introduction to Laser Technology", IEEE Press ISBN0-7803-5373-0 K.J. Kuhn, "Laser Engineering", Prentice Hall ISBN 0-02-366921-7 A.R. Henderson, "A Guide to Laser Safety" Chapman & Hall, ISBN0-412-72940-7 A. Rhody/F. Ross, "Holography Marketplace", Ross Books, ISBN 0-89496-110-1	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	written exam (120 min)  Prüfungsvorleistung: graded lab certificate	
Semester	1 Fachsemester	

Version	Date	Bearbeiter/in	Freigabe	Page
0	07/05/21	Stud.IP-MVV-Admin	Studiendekan	1 von 2

Modulname	<b>PI Laser Technology</b>	
Häufigkeit des Angebots	annually in the winter semester	
Dauer	1 Semester	
Art der Lehrveranstaltung		
Besonderes		