

Data field	Explanation
Module number	WP05
German title / English title	Photonische Kommunikationssysteme / Photonic Communication Systems
Credits	5 ECTS
Workload	68 Contact hours (4 SWS Ü), 82 Hours of independent study
Subject coverage	subject-specific specialization
Learning outcomes	<p>Students</p> <ul style="list-style-type: none"> • know the function of important photonic systems with their components and subsystems and the basic parameters with impact on the system performance • are aware of the latest developments and trends in the field of photonic communication systems • have deepened their knowledge in tailored laboratory exercises • are able to design a photonic communication system and do a principal part of system engineering by using a professional simulation tool
Requirements	recommendation: Advanced Signal Transmission Techniques (1st sem.), basic knowledge about optical communications engineering
Level	1./2. semester
Type of module	Seminar, Laboratory training
Status	Required-elective module
Semesters when offered	Every semester
Method of assessment / Type of examination	The method of assessment / type of examination must be defined by the lecturer within the deadline determined in §19 (2) RSPO. Should the deadline pass without determination of the form of assessment in the module, the following method of assessment / type of examination applies: 50% Written examination, 50% Written laboratory report of the laboratory group with consultation
Grade assessment	see study and examination regulations
Equivalent modules	modules with similar content
Content	<ul style="list-style-type: none"> • introduction to fiber optic communication systems • concepts and architectures of optical transmitters • concepts and architectures of optical receivers • transmission channel: impairments and their compensation • characterization of system performance • laboratory exercise: use a standard simulation tool to deepen and enhance the understanding for the topics taught in the seminar
Reading list	<p>Noé: Essentials of Modern Optical Fiber Communication, Springer 2016 Kumar, Deen: Fiber Optic Communications, Wiley 2014 Voges, Petermann: Optische Kommunikationstechnik, Springer 2014 Kaminow, Lee, Willner (Editors): Optical Fiber Telecommunications, VIA: Components and Subsystems, Academic Press 2013 Kaminow, Lee, Willner (Editors): Optical Fiber Telecommunications, VIB: Systems and Networks, Academic Press 2013 Werner: Nachrichtentechnik, Vieweg und Teubner 2010 Seimetz: High-Order Modulation for Optical Fiber Transmission, Springer 2009</p>
Further information	Language employed in the module: English
Required Room type	Ü-Sem, Ü-Lab