

Module description: Communication Technology	
Module Code	t.BA.IT.KT.13HS
ECTS Credits	4
Language of Instruction/Examination	German
Organizational Unit	InES
Module Coordinator	Martin Ostertag
Legal Framework	The module description is part of the legal basis in addition to the general academic regulations. It is binding. During the first week of the semester a written and communicated supplement can specify the module description in more detail.
Module Characteristic	Type 3a 2 lecture lessons per semester week and class+ 2 lab bi-weekly lessons per semester and half-class
Module Description	In virtually all modern applications, data communication is an integral part. The aim of this course is to convey concepts, terms, protocols and mechanisms of data communication for the professional environment, so that students can correctly design and use data communication and solve fundamental problems.
Module Content	<p>Theory</p> <ul style="list-style-type: none"> • Basics of Communication Technology • Local Area Networks (Ethernet, Bridging) • Internet Protocols (IP, Routing) • Transport Layer (UDP, TCP) • Network Applications, Infrastructure Services and Protocols (DNS, DHCP, NAT, HTTP etc.) • Interface to Transport Layer (Socket API) <p>Labs</p> <ul style="list-style-type: none"> • Protocol Analyzer • Ethernet • Bridging / VLANs • Routing • Internet Protocol IP • TCP • Application Layer Protocols
Prerequisite Knowledge	

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Learning Objectives (Competences)	Students...		Competencies	Taxonomies		
	... understand the basic terminology, definitions, terms, measures etc. of data communications and can apply them correctly.		M, F	K2, K3		
	... can explain the concept of the OSI reference model using examples and assign protocol functions and properties to the different layers.		M, F	K2, K3		
	... understands Ethernet and the main protocols of the Internet Protocol Suite so that they can design and configure network interfaces and protocol functions.		M, F	K3		
	... understands Ethernet and the main protocols of the Internet Protocol Suite so that they can		F, M	K3, K4		
	... understands Ethernet and the main protocols of the Internet Protocol Suite so that they can analyse processes in the network at different levels with the help of suitable tools.		M, F	K3, K4		
	... can easily understand and extend client / server programs.		F	K2, K3		
Performance Assessment	End-of-module exam	Assessment	Length (min.)	Weighting	Form	
	written exam	Grade	90	80	acc. to module agreement	
	Performance assessment during the semester		Assessment	Length (min.)	Weighting	Form
	Lab exercises <i>Successful preparation and demonstration of lab exercises</i>		Grade	5	20	acc. to module agreement
Classroom Attendance Requirement	None					
Learning material	<ul style="list-style-type: none"> • Script • Exercises • Lab instructions • Slides 					
Comments	Labs: <ul style="list-style-type: none"> • Winterthur: TE528/524 maximum 20 students • Zurich: ZL O3.20 / O3.16 maximum 15 students each 					