TECHNISCHE HOCHSCHULE LÜBECK

Module: Computer Networks

Level	Bachelor	**Short Name**	RN
Responsible Lecturers	Hanemann, Andreas, Prof. Dr.		
Department, Facility	Electrical Engineering and Computer Science		
Course of Studies	International Track		
Compulsory/elective	Compulsory	**ECTS Credit Points**	5
Semester of Studies	3	**Semester Hours per Week**	4
Length (semesters)	1	**Workload (hours)**	150
Frequency	WiSe	**Presence Hours**	60
Teaching Language	German/English	**Self-Study Hours**	90
The following section is filled only if there is **exactly one** module-concluding exam.			
Exam Type		**Exam Language**	
Exam Length (minutes)		**Exam Grading System**	
Learning Outcomes			
Participation Prerequisites			
The previous section is filled only if there is **exactly one** module-concluding exam.			
Consideration of Gender and Diversity Issues	✔ Use of gender-neutral language (THL standard) ✘ Target group specific adjustment of didactic methods ✔ Making subject diversity visible (female researchers, cultures etc.)		
Applicability			
Remarks			

TECHNISCHE HOCHSCHULE LÜBECK

Module Course: Computer Networks (Lecture)

(of Module: Computer Networks)

Course Type	Lecture	**Form of Learning**	Presence
Mandatory Attendance	no	**ECTS Credit Points**	3
Participation Limit		**Semester Hours per Week**	2
Group Size		**Workload (hours)**	90
Teaching Language	German/English	**Presence Hours**	30
Study Achievements ("Studienleistung", SL)		**Self-Study Hours**	60
SL Length (minutes)		**SL Grading System**	

The following section is filled only if there is a course-specific exam.

Exam Type	Written Exam	**Exam Language**	German/English
Exam Length (minutes)	90	**Exam Grading System**	One-third Grades

Learning Outcomes	• Students are able to map the tasks that need to be differentiated for the realization of computer networks to the OSI model. This enables them to explain the advantages of using such a layered model. • Students can describe the ways in which the use of a shared medium can be regulated. They are able to evaluate methods adapted to boundary conditions (e.g. wireless transmission), taking into account criteria such as fairness, stability and throughput. • Students can explain how scalable global communication can be realized in general and how this is implemented in the Internet (i.e. in the corresponding protocols). • Students can make a selection between Transport Layer protocols in order to use them for Internet applications. To do this, they can decide which criteria are important for the specific application based on the properties of the protocols.
Participation Prerequisites	

The previous section is filled only if there is a course-specific exam.

Contents	**Chapter 1: Introduction** • Today's Relevance of Computer Networks • Classification of Computer Networks • Network Topologies • Standardization Bodies **Chapter 2:Reference Models** • Layered Architectures in General • OSI Reference Model

	Chapter 3: Data Link Layer • Media Access in LANs • Concurrent Access • Error Detection and Error Correction **Chapter 4: Network Layer** • Ways of Switching • Route selection • Network Layer in the Internet (IPv4/IPv6) **Chapter 5: Transport Layer** • Transport Layer in General • User Datagram Protocol (UDP) • Transmission Control Protocol (TCP)
Literature	James F. Kurose, Keith W. Ross: Computer Networking: A Top-down Approach, Global edition, Pearson
Remarks	

Module Course: Computer Networks (Practical Training)

(of Module: Computer Networks)

Course Type	Practical Training	**Form of Learning**	Presence
Mandatory Attendance	yes	**ECTS Credit Points**	2
Participation Limit		**Semester Hours per Week**	2
Group Size	12	**Workload (hours)**	60
Teaching Language	German/English	**Presence Hours**	30
Study Achievements ("Studienleistung", SL)		**Self-Study Hours**	30
SL Length (minutes)		**SL Grading System**	

The following section is filled only if there is a course-specific exam.

Exam Type	Project Work	**Exam Language**	German/English
Exam Length (minutes)		**Exam Grading System**	One-third Grades
Learning Outcomes	See lecture		
Participation Prerequisites			

The previous section is filled only if there is a course-specific exam.

Contents	Task 1: OSI Model Task 2: Data Link Layer (switch configuration) Task 3: Wireless LAN (access point configuration) Task 4: Network Layer (router configuration) Task 5: Transport Layer (TCP features)
Literature	See lecture
Remarks	