

# „TCP / IP / Network programming“

## Course Syllabus

### Time and Location

This course is an instructor led summer course during the 8th American-German Summer Program. Time is listed on detailed summer program 2017 schedule. The syllabus is adjusted to reflect special circumstances related to the international experience. The tabular schedule is a guideline; we will try to follow it closely, but be prepared to adjust to changes in pace dictated by our collective experience. Location is Germany, Jade University of Applied Sciences in Wilhelmshaven, Department of Engineering Sciences.

### Instructor

Dipl.-Ing. Olaf Fischer, Jade Hochschule, Wilhelmshaven, Germany.

Phone: 0049-4421-985-2381 (The 0049 is Germany Country Code)

E-Mail: [olaf.fischer@jade-hs.de](mailto:olaf.fischer@jade-hs.de)

Web: <http://team.jade-hs.de/kontakt/index.php?id=82>

Dipl.-Ing. Udo Willers, Jade Hochschule, Wilhelmshaven, Germany.

Phone: 0049-4421-985-2544 (The 0049 is Germany Country Code)

E-Mail: [willers@jade-hs.de](mailto:willers@jade-hs.de)

Web: <http://team.jade-hs.de/kontakt/index.php?id=79>

### Office Hours

We can meet after each class for questions or on appointment.

## Catalog Description and Prerequisites

### TCP / IP / Network programming

Prerequisites: Basic knowledge in computer science and in "C" programming.

## Textbook

D. E. Comer, „Internetworking with TCP/IP“ Vol. I, Prentice-Hall

D. E. Comer, D.L. Stevens Internetworking with TCP/IP, Vol. III: Client-Server Programming and Applications, Linux/Posix Sockets Version, Prentice-Hall  
Willers/Fischer, Script „TCP/IP Workshop“

## Purpose

The course is separated in 50% class and 50% laboratory work. After successful participation in this course the students will have knowledge about the TCP/IP protocol stack from a network administrator and programmers view. They will have basic knowledge about the topics network analysis, network security and encryption and will know how to write Client- and Server applications in the TCP/IP environment.

## Objectives

1. TCP/IP implementation in Unix
2. Application protocols
3. Network analysis under Unix, SNMP network management;
4. Unix firewall (iptables);
5. Protocol tunnelling with ssh;
6. Asymmetric and symmetric encryption algorithms;
7. Data encryption with PGP;
8. Socket programming of client- server applications in C

## Course Schedule

Look at separate schedule of the summer program!

## Examinations

The course is separated in 50% class and 50% laboratory work.

There will be an oral examination after class. During the laboratory work the student has to develop a C program which will be graded. At the end of the course there is a final oral examination.

## Grading Policy

Final grades are determined based on oral examinations and program listing. The approximate weighting of graded material in determining the final grade is as follows:

<b>Item</b>	<b>Percent of Grade</b>
Oral examination	50%
Program listing	25%
Final oral examination	25%