



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Lokalne sieci teleinformatyczne - Local ICT Networks

Course

Field of study

Teleinformatics

Year/Semester

1/2

Area of study (specialization)

Profile of study

general academic

Level of study

first-cycle studies

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

30

Other (e.g. online)

Tutorials

0

Projects/seminars

0/0

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

dr hab. inż. Piotr Zwierzykowski, prof. PP
Institute of Communication and Computer
Networks
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Responsible for the course/lecturer:

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Prerequisites



The student starting this course should have basic knowledge of the basics of ICT networks. He should also understand the need to expand his competences. In addition, in the field of social competences, the student must present attitudes such as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, respect for other people.

Course objective

1. Providing students with basic knowledge in the field of local ICT networks.
2. Developing students' skills in solving basic problems related to the design, commissioning and optimization of local ICT networks.
3. Shaping students' skills in acquiring knowledge about new solutions used in local ICT networks

Course-related learning outcomes

Knowledge

1. Has ordered knowledge of the most important standards, architecture, operation and design of local ICT networks.
2. Has a structured, mathematical basic knowledge of the operation of algorithms and protocols used in switches.
3. Has ordered knowledge of the most important standards of modern reliable switching protocols.

Skills

1. Can solve typical problems related to the optimal design of a local ICT network
2. Can configure switches to work with various mechanisms and protocols for reliable operation

Social competences

He/She is ready to work in a group

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The learning outcomes presented above are verified as follows:

Assessment in the field of laboratory exercises is carried out by continuous assessment at each class (small tests, oral answers) and by the assessment obtained on the final test.

Assessment of lectures is verified by the assessment of knowledge shown in the exam.

The exam consists of 3 parts: the first part consists of answers to 10 theoretical questions and allows you to get 60% of the points, the second part is to solve two problems in the field of logical addressing and allows you to get 20% of the points, the third part consists of two tasks open and allows you to get 20% of the exam points. To get the price of 3.0 it is necessary to get a minimum 51% points.

Programme content

The lecture will present the most important protocols and mechanisms used in local ICT networks. In the laboratory part, students learn the principles of configuration of mechanisms and protocols used in local ICT networks.



The issue raised during the lectures:

- architecture of contemporary local networks,
- ethernet as the dominant technology of ICT networks,
- networks made of switches,
- virtual local networks,
- ensuring communication between virtual local networks,
- mechanisms for ensuring the reliability of local networks.

The issue raised during the laboratories:

- basic switch configuration (layers 2 and 3),
- virtual local networks (including MUX and Super VLANs),
- switching between VLANs,
- spanning tree protocols (STP / RSTP / MSTP),
- link aggregation mechanisms,
- default gateway virtualization protocols.

Teaching methods

Conversational lecture (with discussion elements). Laboratory exercises are conducted in groups. Each group carries out its own practical task based on real Huawei network devices.

Bibliography

Basic

1. Charles E. Spurgeon, Joann Zimmerman : Ethernet: The Definitive Guide. 2nd Ed., O'Reilly 2014
2. Gary A. Donahue: Network Warrior. Everything You Need to Know That Wasn't on the CCNA Exam. 2nd Ed., O'Reilly, 2011

Additional

CCNP and CCIE Enterprise Core ENCOR 350-401 Official Cert Guide, Cisco Press, 2019

Breakdown of average student's workload

	Hours	ECTS
Total workload	90	3.0
Classes requiring direct contact with the teacher	49	2.0
Student's own work (preparation for tests, preparation for laboratory classes, preparation for exam, literature studies)	41	1.0