

Computer system administration - course description

General information	
Course name	Computer system administration
Course ID	11.3-WE-INFP-ComSysAd-Er
Faculty	Faculty of Computer Science, Electrical Engineering and Automatics
Field of study	Computer Science
Education profile	academic
Level of studies	Erasmus programme
Beginning semester	winter term 2017/2018

Course information	
Semester	6
ECTS credits to win	5
Course type	optional
Teaching language	english
Author of syllabus	<ul style="list-style-type: none">dr inż. Jacek Bieganski

Classes forms					
The class form	Hours per semester (full-time)	Hours per week (full-time)	Hours per semester (part-time)	Hours per week (part-time)	Form of assignment
Lecture	15	1	-	-	Credit with grade
Laboratory	30	2	-	-	Credit with grade
Project	15	1	-	-	Credit with grade

Aim of the course

1. Familiarize students with installation and configuration of operating systems and network devices.
2. Familiarize students with typical system administrator tasks.
3. Familiarize students with useful tools and software.
4. Familiarize students with virtual machines.

Prerequisites

Operating systems.

Scope

Installing and configuring Windows, Windows Server, UNIX/Linux machines. Installing and configuring e-mail servers, database servers, SSH servers, web servers. Backups, redundant array of independent disks (RAID), replacing failed drives, performing full and incremental backups on the example of ZFS file system. Configuration of network devices and services: virtual private networks (VPN), DHCP servers, DNS servers, firewalls, NATs, NTP. Remote desktops and remote administration. Virtual machines configuration. Scripting and automation of routine task.

Teaching methods

lecture, laboratory classes, project

Learning outcomes and methods of their verification

Outcome description	Outcome symbols	Methods of verification	The class form
Student knows system administrator duties and tasks.		<ul style="list-style-type: none">an evaluation test	<ul style="list-style-type: none">Lecture
Student is able to install and configure an operating system and services.		<ul style="list-style-type: none">an ongoing monitoring during classes	<ul style="list-style-type: none">Laboratory
Student is able to design a LAN and configure network components.		<ul style="list-style-type: none">an ongoing monitoring during classes	<ul style="list-style-type: none">Laboratory
Student knows and understands how network components and servers interact with one another and what product to buy to expand the network.		<ul style="list-style-type: none">a preparation of a project	<ul style="list-style-type: none">Project
Student is able to create and configure virtual machines.		<ul style="list-style-type: none">an ongoing monitoring during classes	<ul style="list-style-type: none">Laboratory

Assignment conditions

Lecture - the passing criterion is a sufficient mark from the final test.

Laboratory - the passing criterion are positive marks for laboratory exercises and tests.

Project - the passing criterion are positive marks for all project exercises.

Final mark components = lecture: 30% + laboratory: 40% + project: 30%

Recommended reading

1. MikroTik devices documentation, <https://wiki.mikrotik.com/wiki/Manual:TOC>.
2. OpenVPN documentation, <https://openvpn.net/index.php/open-source/documentation/howto.html>.
3. FreeBSD Handbook, <https://www.freebsd.org/doc/handbook/>.

Further reading

1. Eric Steven Raymond, *The Art of Unix Programming*, <http://www.catb.org/esr/writings/taoup/html/>, 2003.

Notes

Modified by dr inż. Jacek Bieganski (last modification: 24-04-2019 22:40)

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