



The Faculty of:	Faculty of Electrical and Computer Engineering
Field of study:	Computer Science
Speciality:	
Study degree (BSc, MSc):	Second circle part time studies

COURSE UNIT DESCRIPTION

Course title:	Linux and Internet technologies
Lecturer responsible for course: Tomasz RAK, PhD, Eng.	
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Department : Department of Computer and Control Engineering	

Semester	Weekly load	Type of classes				Number of ECTS credits
		L Lectures	C Theoretical Classes	Lb Laboratory	P Project	
3	5	15		15		2

Course description
<p>Lecture: Linux like a younger Unix "brother": history, distributions, short instalation examples (Unix, Linux), init and system processes, run levels, modes, configuration files, chkconfig/ntsysv. System logs (syslog, /var/log/messages), at and cron commands. Programs instalation and instalation problems: RPM, DEB and source. Sources patching.</p> <p>Filesystems: types, mounting, access rights, repair, block and character devices, links, masks, directory and files structure, low level disk access, inode, /proc, suid, chroot, quota.</p> <p>Text terminal: shell, ssh (keys generating), telnet, scp. Graphical terminal.</p> <p>Firewall: security politics, packet filters, iptables, rules, security scripts, masquerading (SNAT and DNAT).</p> <p>Linux server configuration: Apache2 (directives, virtual servers, certification generating, user homepage, access passwords, error pages) and proFTPD (directives, limited transfer, commands, ftp client) and DHCP (dhcpd.conf, lease, IP with MAC, dhcp clie</p> <p>Linux DNS server configuration (zone files, access control lists, reverse zone, servers: cache DNS, authoritative and forwarding, master and slave servers, nslookup, host, dig).</p> <p>Linux server configuration: DHCP (dhcpd.conf, lease, IP with MAC, dhcp client) and Postfix (aliases, configuration, conservation, mail boxes, restrictions, client - mail).</p> <p>Linux server configuration: Samba (section parameters, demons) and Proxy (Squid).</p>

Classes:
<p>Laboratory: Linux commands and files. Users accounts. IP addresses. Network traffic monitoring and analysing tools: spoofing and ARP poisoning, IDS, ports, nettraf, ethereal, snort, Wireshark.</p> <p>Introduction to routing problems. Linux static and dynamic routing.</p> <p>SUSE Linux Enterprise Server administration: YaST2, users, sysconfig, autoinstalation, backup. Remote server administration: VNC, putty, Reflection X, xterm.</p> <p>DNS and DHCP servers installation and configuration.</p> <p>Apache2 and proFTPD installation and configuration (source).</p> <p>Credit - test.</p>
Project:

Objectives of the course
Student should obtain theoretical knowledge and practical understanding of Linux network operating system administration and configuration. Possibility of practical configuration Linux network services. Helpful materials http://trak.prz-rzeszow.pl/ .
Examination method
Final examination (test), oral or written test on each laboratory, credit test from laboratory.

Bibliography
Lal K., Rak T., Kościółek S.: SUSE Linux Enterprise Server. Administracja usługami serwera. Księga eksperta, HELION, 2008; Rak T.: Tworzenie sieci komputerowej. Ćwiczenia praktyczne, HELION, 2006; Lal K., Rak T.: Linux. Komendy i polecenia. Praktyczne przykłady, HELION, 2005; Lal K., Rak T.: Linux a technologie klastrowe, MIKOM, 2005; Lal K., Rak T.: Wprowadzenie do użytkowania systemów Unix i Linux, OFICYNA WYDAWNICZA POLITECHNIKI RZESZOWSKIEJ, Materiały pomocnicze, Rzeszów, 2004; Lal K., Rak T.: Po prostu własny serwer internetowy, HELION, 2002; Mitnick K., Simon W. L.: Sztuka podstępu. Łamałem ludzi, nie hasła, Helion, 2003; http://dug.net.pl/texty/przeplyw.pdf ; http://linuxnews.pl ; http://www.linux.pl .

Lecturer signature	
Head of Department signature	
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