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| Course name: | **ADMINISTRATION OF COMPUTER NETWORKS** |
| Contact person: | **Dr. Lívia Szedmina (slivia@vts.su.ac.rs)** |
| Language: | **The course is offered in Serbian and Hungarian** |
| ECTS | **6** |
| Course Objectives: | **Introducing to the foundational concepts and experience in Computer Network and Systems Administration; Consideration of FCAPS (Fault, Configuration, Accounting, Performance, and Security-management) access; The course also provides competence to the basic administration of the major network services. Understanding concepts and terminology associated with SNMP;** |
| The outcome of the course | **Acquiring competency for work on computer network administration tasks. Formed ability to analyse, synthesize and maintain simple computer networks and network services.** |

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| **Weekly lecture topics** | |
| **Week** | **Topics** |
| 1. | Recapitulation of basic concepts, elements of computer networks. OSI architecture and internet architecture. Overview of computer networks management methods, ITIL and FCAPS methods. |
| 2. | The place, the role and importance of administering computer networks. Brief review of WEBMIN program to computer and system administration. |
| 3. | Methodologies of administration of computer networks. |
| 4. | Administering of routers. |
| 5. | Planning and dimensioning the computer networks. Administering Virtual Networks. |
| 6. | Configuration, Fault and Performance management. |
| 7. | Accounting management. |
| 8. | Security management. |
| 9. | Administration of Significant Services. Administration of DNS system. Configuration files. Analysis of log files. |
| 10. | Mail system administration. Basic configuration problems, log file analysis. |
| 11. | WEB system administration. Basic configuration problems, log file analysis. |
| 12. | Overview of the SNMP system. Architecture, MIB and OID. |
| 13. | Infrastructure monitoring systems. NAGIOS and NAGVIS. |
| 14. | Virtual Infrastructure Administration. |
| 15. | Overview and closing of the semester. |
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| **Weekly topics of laboratory exercises** | |
| **Week** | **laboratory exercise** |
| 1. | Introductory remarks. Introducing students with the structure and dynamics of exercises. Setting up the LINUX system as a virtual machine. Each student is setting up his own virtual machine, which he/she will use during the course till the end of the semester. |
| 2. | Compiling the LINUX kernel, setting up and configuring network interfaces. |
| 3. | Overview of the WEBMIN environment. Installation and using it for the administration of the network, the network services and the computer. |
| 4. | Configuring the DNS Client. Working with basic tools, commands: ping, traceroute, dig and nslookup. |
| 5. | Setting up the firewall. Packet filtering. |
| 6. | The first recapitulation exam, colloquium. (ifconfig, nslookup, firewall) |
| 7. | Configuring and managing the telnet and ssh servers. |
| 8. | Configuring and managing the FTP server. Sharing files in the environment of the multi platform systems. |
| 9. | Maintenance of the BIND system and server. |
| 10. | The MAIL system. Configuration and maintenance of the postfix mail server. |
| 11. | The second recapitulation exam, colloquium. (FTPD, BIND, SENDMAIL ) |
| 12. | Apache HTTPD servers and their configuration and maintenance. |
| 13. | Setting up the OpenSNMP service. |
| 14. | Setting up the NAGIOS system. |
| 15. | Writing the third colloquium. Closing the semester. |
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