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| **Course title: TCP IP Architecture** |
| Course code: 50049 |
| ECTS credits: 7 |
| Requirements: None |
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| **Basic information** |
| Level of studies: Undergraduate applied studies |
| Year of study: 1 |
| Trimester: 1 |
| Goal: Introducing students to the fundamentals of communication in computer networks and important protocols of the TCP/IP reference model. |
| Outcome: Students should understand the mechanism of communication in TCP/IP and the OSI reference model, design a logical LAN (design on the third layer of the OSI model) and use the basic tools and routines in computer network maintenance. |
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| **Contents of the course** |
| Theoretical instruction |
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| 1. OSI and TCP/IP reference models |
| 2. Application layer protocols: HTTP, FTP, TFTP, DHCP, DNS, SMP, Telnet |
| 3. Transport layer |
| 4. Transport layer protocols: TCP and UDP |
| 5. Network layer |
| 6. Network layer protocols: IPv4, ICMP, IPv6 |
| 7. Network devices: routers and switches |
| 8. ARP protocol |
| 9. Data link layer |
| 10. Ethernet protocol |
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| Practical instruction (Problem solving sessions/Lab work/Practical training) |
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| 1. Verification of communication in a computer network |
| 2. Logical network design |
| 3. Creating subnets with fixed and variable length subnet masks |
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| **Textbooks and References** |

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| 1. D. E. Comer, Internetworking with TCP/IP Volume One, Pearson, 2013. |
| 2. J. F. Kurose, K. W. Ross, Умрежавање рачунара од врха ка дну са Интернетом у фокусу, превод трећег издања, РАФ Рачунарски факултет, Београд, CET Computer Equipment and Trade, Београд, 2005, оригинално издање: Computer Networking: A Top-Down Approach Featuring the Internet, Rearson Education, Inc., 2005. |
| 3. D. E. Comer, Повезивање мрежа – TCP/IP: Принципи, протоколи и архитектуре, превод четвртог издања, CET Computer Equipment and Trade, 2001, Београд, оригинално издање: Internetworking with TCP/IP, Vol I: Principles, Protocols, and Architecture, Fourth Edition, Prentice Hall, Inc., 2000. |
| 4. R. Deal, CCNA-Cisco Certified Network Asociate Study Guide, McGraw-Hill, 2008. |
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| **Number of active classes (weekly)** |
| Lectures: 4 |
| Practical classes: 3 |
| Other types of classes: 0 |
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| **Grading (maximum number of points: 100)** |
| **Pre-exam obligations: Points** |
| Activities during lectures: 0 |
| Activities on practical exercises: 0 |
| Seminary work: 0 |
| Colloquium: 40 |
| **Final exam: Points** |
| Written exam: 60 |
| Oral exam: 0 |
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| **Lecturer:** Marija Zajeganović, MSc |
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| **Associate:** Nikola Kurbalija |
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