Course title: Computer Network Design
Course code: 61044
ECTS credits: 6
Requirements: None
Basic information
Level of studies: Undergraduate applied studies
Year of study: 3
Trimester: 9
Goal: Introducing design and implementation of local and metropolitan computer networks. Training students to design and implement complex projects, work individually or in a team with full responsibility, use specific equipment for administration and design of computer networks and solve complex problems in computer network design.
Outcome: Students should be able to independently plan and design parts and/or complete local computer networks based on certain criteria and project tasks as well as to use essential active and passive components.
Contents of the course
Theoretical instruction
1. Planning and design of a local computer network
2. Physical and logical design of a computer network
3. Specification of material and equipment for network design
4. Structured cabling in a building
5. Planning a wireless local area network
6. Hierarchical design of a local computer network
7. Second and third layer switches
8. Redundancy in a local computer network
9. Security in a designed computer network
Practical instruction (Problem solving sessions/Lab work/Practical training)
1.Computer network design with the appropriate software tools
2. Hierarchical design of a local computer network based on a project task
3. Selection of switches, routers and other essential network devices based on the requirements of a local computer network and its design

4. Creating documentation for all segments of local and metropolitan networks with different levels of detail
Textbooks and References
1. J. F. Kurose, K. W. Ross, "Умрежавање рачунара од врха ка дну са Интернетом у фокусу", превод шестог издања, РАФ Рачунарски факултет, Београд, CET Computer Equipment and Trade, Београд, 2013, оригинално издање: Computer Networking: A Top-Down Approach Featuring the Internet, Rearson Education, Inc., 2013.
2. P. Oppenheimer, Top-Down Network Design (3rd Edition), Cisco Press, Indianapolis, 2011
3. Cisco Networking Academy, "Connecting Networks Companion Guide: Hierarchical Network Design ",Cisco Press, 2014, ISBN-10: 1-58713-332-6
4. W. Odom, "CCNA Routing and Switching 200-125 Official Cert Guide Library", Cisco Press, 2016, ISBN-10: 1-58720-581-5
Number of active classes (weekly)
Lectures: 4
Practical classes: 2
Other types of classes: 0
Grading (maximum number of points: 100)
Pre-exam obligations: Points
Activities during lectures: 10
Activities on practical exercises: 20
Seminary work: 20
Colloquium: 10
Final exam: Points
Written exam: 40
Oral exam: 0
Lecturer: Marija Zajeganović, MSc
Associate: Nikola Kurbalija