

Basic data of the subject	
<b>University:</b>	<b>University of Applied Sciences in Ferizaj</b>
<b>Academic unit:</b>	<b>Faculty of Engineering and Informatics</b>
<b>Program:</b>	<b>Applied Informatics</b>
<b>Title of the subject:</b>	<b>Routing of Computer Network</b>
<b>Level:</b>	<b>Bachelor</b>
<b>Course Status:</b>	<b>Obligatory</b>
<b>Year of studies:</b>	<b>II, Semester IV</b>
<b>Number of hours per week:</b>	<b>3</b>
<b>Value of Credits - ECTS:</b>	<b>5</b>
<b>Time / location:</b>	
<b>Course lecturer:</b>	
<b>Contact details:</b>	<a href="#">_____</a>
<b>Course Description:</b>	
	<i>This course provides students with practical knowledge to connect and configure networks. Delves into the internal computer network design and configuration according to the given requirements. Learning to use console commands to configure the most reliable network, connect the equipment into circuits, configure equipment with static or dynamic addresses, configure DNS and DHCP, assign VLAN, and configure remote access to the equipment.</i>
<b>Objectives of the course:</b>	
	<i>Aim of the course – learn to build and configure a small/medium size network from given requirements or a virtual network model and be able explain why one or another network design decision where done. At the end of the course a group laboratory work is done to build and connect different Cisco equipment into a small network.</i>
<b>Expected learning outcomes:</b>	
	<i>Upon successful completion of this course, student will be able to:</i> <ul style="list-style-type: none"> <li>• <i>Create complex virtual network.</i></li> <li>• <i>Connect and configure a small network from given requirements or a virtual network model.</i></li> <li>• <i>Find a suitable command to configure network equipment.</i></li> <li>• <i>Adapt the detection protocol to configure a network in a continuous chain.</i></li> <li>• <i>Identify network faults and removes them.</i></li> <li>• <i>Self-study using Netacad environment.</i></li> </ul>
<b>Prerequisites:</b>	
	<i>Basic knowledge of computer networks and computing in general. Students should have a basic knowledge of network concepts, including IP addressing, network protocols, and network security concepts.</i>
<b>Contribution to the student load (which must correspond with learning outcomes)</b>	

Activity	Hour	Day/Week	In total
Lectures with numerical exercises	3	15	45
Internship			
Contacts with teacher / consultations			
Field exercises			
Midterm, seminars and projects.	3	2	6
Homework			
Self-learning time student (at the library or at home)	3	15	45
Final preparation for the exam	7	2	14
Time spent on evaluation (tests, quiz and final exam)			
Projects and presentations.	3	5	15
<b>Total</b>			<b>125</b>

<b>Teaching methodology:</b>	<p><i>The course takes 15 weeks with 1.5 hours of lectures and 1.5 hours weekly individual and group exercises. Exercises will be held in the form of individual and group work in which concrete examples will be discussed. Active participation is extremely important so students are encouraged to attend lectures and exercises regularly and contribute to the discussions that take place in lectures. Lectures, exercise, individual work, discussions and group work.</i></p>
<b>Assessment methods:</b>	<p><i>The student can choose to be assessed one of the two forms of assessment, given below:</i></p> <ol style="list-style-type: none"> <li><i>1. Form 1: Evaluation with colloquiums and project</i></li> <li><i>2. Form 2: Evaluation with the final exam.</i></li> </ol> <p><b>Form 1:</b>  <i>In the first form of assessment "Assessment with colloquiums and project" the student is assessed in four activities that are carried out during the lectures:</i></p> <ol style="list-style-type: none"> <li><i>1. Colloquium 1 (35%), individual assessment</i></li> <li><i>2. Colloquium 2 (35%), individual assessment</i></li> <li><i>3. Class activity (10%), individual assessment</i></li> <li><i>4. Project (20%), group assessment.</i></li> </ol> <p><i>If the student is not satisfied with the assessment achieved according to form 1, then he can undergo the assessment according to form 2 to obtain a higher assessment.</i></p> <p><b>Form 2:</b>  <i>Through the final exam, the student can achieve a maximum of 70% of the points from the total of 100 points.</i></p> <p><i>The rest of the 20% points must be completed by group work in the Project, an activity carried out during the lectures.</i></p>

	<p><i>In Colloquium 1, Colloquium 2 and the final exam, the evaluation of the students will be done through an evaluation form, which must be completed individually by the student. The evaluation form will contain 5 tasks through which the student's learning outcomes will be evaluated.</i></p> <p><i>Activity in the class means the student's engagement in dealing with the issues discussed in the class, during the lectures.</i></p> <p><i>Project (20%), group assessment: it is an activity in which students apply the acquired knowledge in a concrete project. It is carried out in groups of 3 or 4 students who are obliged to carry out the activity, document and present it to the subject professor.</i></p> <p><b>Rating:</b></p> <p><i>91-100 points – graded 10 (ten)</i>  <i>81-90 points – graded 9 (nine)</i>  <i>71-80 points – grade 8 (eight)</i>  <i>61-70 points – grade 7 (seven)</i>  <i>51-60 points – grade 6 (six)</i>  <i>0-50 points – The student repeats the exam</i></p>
<b>The ratio of theory and practice:</b>	<i>70% theory with exercises and 30% laboratory work.</i>
<b>Literature</b>	
<b>Basic Literature:</b>	<ol style="list-style-type: none"> <li><i>1. Andrew S. Tanenbaum, David J. Wetherall, (2010), "Computer Networks", Fifth Edition, Publisher: Prentice Hall</i></li> <li><i>2. T. Lammle (2013) CCNA Routing and Switching Study Guide. 1178 p.</i></li> </ol>
<b>Additional Literature:</b>	<i>3. W. Odom (2013) Cisco CCENT/CCNA ICND1 100-101. 1758 p. Cisco material in NETACAD system.</i>
<b>Designed learning plan</b>	
<b>Week:</b>	<b>Lectures and exercises to be held</b>
<b>Week one:</b>	<i>Introduction to Cisco Routers, Switches, IOS &amp; the Boot Process.</i>
<b>Week two:</b>	<i>Using the Command-Line Interface (CLI).</i>
<b>Week three:</b>	<i>VLANs. Static routing. Routing dynamically.</i>
<b>Week four:</b>	<i>Basic Configuration of Router and Switches.</i>
<b>Week five:</b>	<i>Configuring Router Interfaces.</i>
<b>Week six:</b>	<i>Access control. Configuring DNS &amp; DHCP.</i>
<b>Week seven:</b>	<i>Laboratory work No. 1</i>
<b>Week eight:</b>	<i>Saving, Erasing, Restoring and Backing up Configuration &amp; IOS File.</i>
<b>Week nine:</b>	<i>Password Recovery on a Cisco Router.</i>
<b>Week ten:</b>	<i>Cisco Discovery Protocol (CDP).</i>

<b>Week eleven:</b>	<i>Using Telnet on IOS.</i>
<b>Week twelve:</b>	<i>Administrative Distance and Routing Metrics.</i>
<b>Week thirteen:</b>	<i>Classes of Routing Protocols.</i>
<b>Week fourteen:</b>	<i>Routing Loops. Route Redistribution.</i>
<b>Week fifteen:</b>	<i>Laboratory work No. 2</i>
<b>Academic policies and rules of conduct</b>	
<i>Regular attendance of lectures and exercises is necessary, as well as active participation with discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode.</i>	