Basic data of the subject	
Academic unit:	**Faculty of Engineering and Informatics** **Applied Informatics**
Title of the subject:	**Routing of Computer Network**
Level:	**Bachelor**
Course Status:	**Obligatory**
Year of studies:	**II**
Number of hours per week:	**3**
Value of Credits - ECTS:	**5**
Time / location:	
Course lecturer:	**Prof.Dr. Ibrahim Çunaku**
Contact details:	Ibrahim.cunaku@ushaf.net
Course Description:	*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, con figure of DNS and DHCP, assign VLAN, and configure remote access to the equipment.*
Objectives of the course:	*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.*
Expected learning outcomes:	*Upon successful completion of this course, student will be able to:* • *Create complex virtual network.* • *Connect and configure a small network from given requirements or a virtual network model.* • *Find a suitable command to configure network equipment.* • *Adapt the detection protocol to configure a network in a continuous chain.* • *Identify network faults and removes them.* • *Self-study using Netacad environment.*

Contribution to the student load (which must correspond with learning outcomes)			
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
Total			**125**

Teaching methodology:	*The course takes 15 weeks with 2 hours of lectures and 2 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.*
Assessment methods:	*Laboratory work No. 1 - 15%,* *Laboratory work No. 2 - 15%,* *Activity - 10%.* *Final Exam - 60%.* *Total 100%*
The ratio of theory and practice:	*70% theory with exercises and 30% laboratory work.*
Literature	
Basic Literature:	1. *Andrew S. Tanenbaum, David J. Wetherall, (2010), "Computer Networks", Fifth Edition, Publisher: Prentice Hall* 2. *T. Lammle (2013) CCNA Routing and Switching Study Guide. 1178 p.*
Additional Literature:	3. *W. Odom (2013) Cisco CCENT/CCNA ICND1 100-101. 1758 p. Cisco material in NETACAD system.*
Designed learning plan	
Week:	**Lectures and exercises to be held**
Week one:	*Introduction to Cisco Routers, Switches, IOS & the Boot Process.*
Week two:	*Using the Command-Line Interface (CLI).*
Week three:	*VLANs. Static routing. Routing dynamically.*
Week four:	*Basic Configuration of Router and Switches.*
Week five:	*Configuring Router Interfaces.*
Week six:	*Access control. Configuring DNS & DHCP.*
Week seven:	*Laboratory work No. 1*
Week eight:	*Saving, Erasing, Restoring and Backing up Configuration & IOS File.*

Week nine:	*Password Recovery on a Cisco Router.*
Week ten:	*Cisco Discovery Protocol (CDP).*
Week eleven:	*Using Telnet on IOS.*
Week twelve:	*Administrative Distance and Routing Metrics.*
Week thirteen:	*Classes of Routing Protocols.*
Week fourteen:	*Routing Loops. Route Redistribution.*
Week fifteen:	*Laboratory work No. 2*
Academic policies and rules of conduct	
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.	