SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	**Babeş Bolyai University**
1.2 Faculty	**Faculty of Mathematics and Computer Science**
1.3 Department	**Department of Computer Science**
1.4 Field of study	**Computer Science**
1.5 Study cycle	**Bachelor**
1.6 Study programme / Qualification	**Computer Science**

2. Information regarding the discipline

2.1 Name of the discipline	**System and Network Administration**						
2.2 Course coordinator	**Lect. Dr. Radu DRAGOS**						
2.3 Seminar coordinator	**Lect. Dr. Radu DRAGOS**						
2.4. Year of study	**3**	2.5 Semester	**6**	2.6. Type of evaluation	**C**	2.7 Type of discipline	**optional**

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	**4**	Of which: 3.2 course	**2**	3.3 seminar/laboratory	**1 lab+ 1 proj**
3.4 Total hours in the curriculum	**48**	Of which: 3.5 course	**24**	3.6 seminar/laboratory	**24**
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					**36**
Additional documentation (in libraries, on electronic platforms, field documentation)					**36**
Preparation for seminars/labs, homework, papers, portfolios and essays					**36**
Tutorship					**5**
Evaluations					**14**
Other activities:					-

3.7 Total individual study hours	**127**
3.8 Total hours per semester	**175**
3.9 Number of ECTS credits	**7**

4. Prerequisites (if necessary)

4.1. curriculum	● Operating Systems; Computer Networks
4.2. competencies	● Average programming skills

5. Conditions (if necessary)

5.1. for the course	● Video preojector
5.2. for the seminar /lab activities	● Laboratory with computers

6. Specific competencies acquired

Professional competencies	● C6.1 Identifying base concepts and models of operating systems and computer networks. ● C6.3 Techniques for installation, configuration and administration of operating systems and computer networks.
Transversal competencies	● CT1 Applying organized and efficient work rules, the responsible attitudes of the scientific teaching for creative exploitation of their potential with the principles and rules of professional ethics. ● CT3 Utilization of efficient models and techniques for studying, information, research and development of knowledge usage and adaptation to a dynamic society and communication in Romanian language and an international language

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	● Know and understand fundamental concepts of system administration. ● Know and understand fundamental concepts of network administration.
7.2 Specific objective of the discipline	At the end of the course, students ● know the main concepts and principles of installing major operating systems ● know the main concepts and principles of configuring major operating systems ● are able to install and configure networking services on major operating systems ● are able to install and configure main networking equipment devices

8. Content

8.1 Course	Teaching methods	Remarks
1. Introduction to Sysadmin and NetworkAdmin concepts ● motivation ● objectives ● real life examples	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
2. Installing an operating system ● Linux ● BSD ● Microsoft Windows Server	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
3. Configure networking for an operating system	● Interactive exposure	

● Linux/BSD/Windows Server	● Explanation ● Conversation ● Didactical demonstration	
4.1 DHCP configuration ● Linux/BSD/Windows Server 4.2 Static/dynamic bindings and lease times	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
5. DNS configuration ● Linux/BSD/Windows Server 5.2 DNS zones, delegation, master/slave, dynamic updates, recursion	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
6.1 HTTP configuration ● Linux/BSD/Windows Server 6.2 Name based Virtual Hosting	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
7.1 MAIL+MX configuration ● Linux/BSD/Windows Server 7.2 Mail retrieval ● POP3/IMAP/Webmail	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
8. NetworkSecurity (firewall) configuration ● Linux/BSD/Windows Server	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
9. Virtualization sollutions ● Oracle VirtualBox ● WMware ● HyperV ● Xen Hypervisor	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
10. Networking appliances configuration ● managed switches ● layer 3 switches ● home/small busines switches ● routers	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
11. Dedicated Internet services appliances ● MX and AntiSpam ● Firewalls ● Network packet annalyzers	● Interactive exposure ● Explanation ● Conversation ● Didactical demonstration	
Bibliography 1. **Computer Networks**, Andrew S. Tanenbaum & David J. Wetherall 2. **Computer Networks: A Systems Approach**, Larry L. Peterson & Bruce S. Davie **3. The Internet and Its Protocols: A Comparative Approach,** Adrian Farrel		
8.2 Seminar / laboratory	Teaching methods	Remarks

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	●	Project	50 %
10.5 Lab activities	●	Practical exam	50 %
10.6 Minimum performance standards			
● At least grade 5 at both written exam and laboratory work.			

Date	Signature of course coordinator	Signature of seminar coordinator
30.04.2018	Lect Dr. Radu DRAGOS	Lect Dr. Radu DRAGOS

Date of approval	Signature of the head of department