UNIVERSITY OF TUZLA · UNIVERZITET U TUZLI

SYLLABUS

1. Course title:

Telecommunication Networks

2. Code:

TK005

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

⦿ Mandatory   ◯ Elective

6. Prerequisites:

7. Class restrictions:

(max. 150 characters)

8. Duration / semester:

1   6

9. Weekly contact hours:

9.1. Lectures:	3
9.2. Seminars:	1
9.3. Laboratory/Practice classes:	1

10. Faculty:

Faculty of Electrical Engineering

11. Department/study program:

Electrical Engineering and Computer Science

12. Lecturer:

PhD Suad Kasapovic, Associate Prof.

13. Lecturer's e-mail:

suad.kasapovic@untz.ba

14. Web site:

www.fe.untz.ba

15. Course aims:

The course aims to present students basic theoretical and practical knowledge in the field of telecommunications networks. Students acquire theoretical and practical knowledge of principles, concepts, architecture, protocols and other knowledge necessary for understanding the issues of implementation of network and understanding how the Internet.

16. Learning outcomes:

- Articulate the organization of the Internet.
- An inventory and determine the appropriate network terminology.
- Description of the layered structure of a typical networked architecture.
- Identify the different types of complexity in the network (the access part, the core, ..).
- List the differences and relationships between names and addresses in the network.
- Define the principles for naming scheme and location resources.
- Implement a simple client-server socket based application.
- Describe the problem of congestion in the network.
- Compare fixed and dynamic resource allocation techniques networks.

17. Course content:

Network concepts, Internet, standards, protocols and modes of organization communication networks (LAN, MAN, WAN, client server, P2P) network hardware. Protocol stacks (OSI and TCP / IP). The medium strength signal, data and signals, utilization band. Multiple access (MAC, ARP), 802.3 Ethernet. Router, Internet Protocol: semantics and syntax, addressing, routing algorithms, routing protocols (RIP, OSPF, BGP). Connection and connectionless ransport. The control flow/congestion. Web, e-mail, domain name service, p2p. Structured cabling. Examples of communication networks: ATM, xDSL. Troubleshooting networking.

18. Learning methods:

- Lectures using multimedia resources, and the active participation of students.
- Creating a tasks and work on the realization of individual and group project assignments.
- Preparation and presentation of individual and group seminar papers.

19. Assessment methods:

I Continuous Assessment (60 %)
  - The test on the midterm (40%)
  - Project, assignments, seminar (20%)

II Final exam (40%)
Students in writing correspond to the theoretical questions and solve problems from the processed content of the course.

20. Assessment components:

54-63: mark 6 (six)
64-73: mark 7 (seven)
74-83: mark 8 (eight)
84-93: mark 9 (nine)
94-100: mark 10 (ten)

21. Required reading list:

- Stallings. Data and Computer Communications. Prentice Hall, 2013.
- James F. Kurose, Keith W. Ross, Computer Networking: A Top-Down Approach, AddisonWesley, 2013.
- Andrew S. Tanenbaum & David J. Wetherall, Computer Networks, Prentice Hall, 2010.

22. Web sources:

www.fe.untz.ba

23. Applicable starting from the academic year:

2016/2017.

24. Adopted in the Faculty/Academy session:

04.04.2016