SYLLABUS

1. Course title:

Systems Programming

2. Code:

RI502

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

[RI401] Operating Systems

7. Class restrictions:

8. Duration / semester:

1 8

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:

Ph.D. Amer Hasanović, full professor

13. Lecturer's e-mail:

amer.hasanovic@untz.ba

14. Web site:

15. Course aims:

Upon completion this course the students will be able to:
- understand advanced UNIX operating system concepts and terminology
- develop a command of the Unix Shell environment, including advanced Unix commands and utilities,
- understand basic inter-process communication issues and techniques in Unix programming,
- develop multithreaded applications in C using POSIX pThreads on Unix.

16. Learning outcomes:

Upon completion this course the students will be able to:
- understand advanced UNIX operating system concepts and terminology
- develop a command of the Unix Shell environment, including advanced Unix commands and utilities,
- understand basic inter-process communication issues and techniques in Unix programming,
- develop multithreaded applications in C using POSIX pThreads on Unix.

17. Course content:

Introduction to UNIX. Awk programming. Regular expressions. Static and shared libraries. Introduction to make. UNIX I/O operations. Unix processes and signals. Proces creation, fork, exec, children. Interprocess communication. Pipes. Semaphores. Message queues. Shared memory. Multithreaded programming. POSIX pThreads.

18. Learning methods:

Lectures, auditive exercises, individual work of students on homeworks and projects.

19. Assessment methods:

The final grade is based on the continuous assessments, which are performed throughout the semester with quizzes and a midterm test, and the final exam, which includes the questions related to the entire content of the course, focusing on the areas that are not covered by the midterm test.

20. Assessment components:

Pre-exam activities: 100%
The final grade is formed in accordance with the Studying regulations based on the points obtained through continuous assessment during the semester (homeworks, projects and tests).

21. Required reading list:

K.A. Robbins, S. Robbins, "UNIX Systems Programming: Communication, Concurrency and Threads", Prentice Hall, 2003

22. Web sources:

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session:

04.04.2016