SYLLABUS

1. Course title:

Operating Systems

2. Code:

RI401

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

[RI301] Data Structures, [RI201] Computer Architecture

7. Class restrictions:

8. Duration / semester:

1 5

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:

After completing the course, the students will: understand the concepts used to design and implement an operating system, grasp the function and principles of implementation of important OS concepts, such as threads, processes, synchronization primitives, and understand the OS protection using various virtual memory mechanisms.

16. Learning outcomes:

After completing the course, the students will: understand the concepts used to design and implement an operating system, grasp the function and principles of implementation of important OS concepts, such as threads, processes, synchronization primitives, and understand the OS protection using various virtual memory mechanisms.

17. Course content:

Operating systems history, services and structure. Concurrency, processes and threads. Synchronization, locks, semaphores, conditional variables. Consumers and producers, readers and writers
Deadlocks, scheduling. Protection, virtual memory: segmentation and paging. Page allocation and replacement, caching and TLB. File systems and disk management.

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, tests).

21. Required reading list:

A. Hasanović, Principi operativnih sistema kroz analizu XV6 koda, Hamidović, 2015.
A. Silberschatz, P. B. Galvin and G. Gagne, Operating System Concepts, John Wiley and Sons, 2005.
A. Tanenbaum, Modern Operating Systems, Prantice Hall, 2001.

22. Web sources:

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session:

04.04.2016