SYLLABUS

1. Course title:

Databases

2. Code:

RI207

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

[RI101] Introduction to Programming

7. Class restrictions:

8. Duration / semester:

1 7

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. Emir Mešković, assistant prof.

13. Lecturer's e-mail:

emir.meskovic@untz.ba

14. Web site:

15. Course aims:

The aim of the course is to learn students the basics of databases, database design, SQL and basic principles of database protection. At the end of the semester/course, successful students who continuously fulfilled their duties throughout the teaching period, will be able: to know the basic theory of databases, relational algebra and SQL query language, to design database models of medium complexity, to construct SQL queries of medium complexity, to know the basics of database protection, to create simple triggers and stored procedures.

16. Learning outcomes:

At the end of the semester/course, successful students who continuously fulfilled their duties throughout the teaching period, will be able: to know the basic theory of databases and to use relational algebra and SQL query language, to design database models of medium complexity, to construct SQL queries of medium complexity, to perform basic database protection, to create simple triggers and stored procedures.

17. Course content:

Introduction to databases and database management system. Data models. Relational data model, relational algebra, SQL, relational database management systems. Physical organization of the data, B-trees and B*-trees. Integrity constraints. Transactions, concurrency, locking. Security, authorization, access control. Triggers and stored procedures. Database recovery. Entity-relationship model. Database design based on ER model.

18. Learning methods:

Lectures and auditive exercises - a PowerPoint presentation is displayed, panels and chalkboards are used for additional explanations, typical examples of SQL / SPL commands are presented.
Laboratory exercises - student's attendance is compulsory and active participation in teaching. By using a selected database server, the solutions of the assignments that are set for preparation at home are practically tested in laboratory exercises. The assignments for next laboratory exercises are set in previous laboratory exercises.

19. Assessment methods:

Continuous examination during the semester, through tests and two midterm exams, and final exam completed at the end of the semester. Short tests are performed within laboratory exercises (except for the first, second, and last) and include the topics of the current exercise. In this way, students can collect up to 24 points (2 points per test). The first midterm exam is held in the 8th week of the semester and cover the topics studied in the first 7 weeks of the semester. The second midterm exam is held in the 12th week of the semester and covers the course topics taken from the 8th to the 11th week of the semester. Both midterm exams all the students are doing in writing at the same time and can collect a maximum of 20 points for each one. The final exam covers the entire course, but with an accent on the topics that are not covered by the midterm exams, and is also done in writing. At the final exam, the student can collect up to 35 points. All forms of examinations during the semester are recognized as a cumulative exam and the student must have completed at least 54 cumulative points to pass the course.

20. Assessment components:

The examination grade is based on the total number of points the student has obtained by fulfilling the pre-exam examinations and passing the final exam. Students can achieve a maximum of 100 points according to the following scale:

Presence at lectures	1
Laboratory exercise tests	24
First midterm exam	20
Second midterm exam	20
Total pre - exam	65
Final exam	35
Total	100

21. Required reading list:

M. Varga: Baze podataka (konceptualno, logičko i fizičko modeliranje podataka), DRIP, Zagreb, 1994.
A. Silberschatz, H.F. Korth, S. Sudarshan: Database System Concepts, Fourth Edition, McGraw-Hill, 2001.
H. Garcia-Molina, J. D. Ullman, J. Widom: Database Systems: The Complete Book, Prentice-Hall Inc., 2001.

22. Web sources:

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session:

04.04.2016