Study programmes: Bachelor studies - Mathematics

Course name: RM16 - Database programming

Lecturers: Gordana Pavlović-Lažetić and other lecturers of the Department of Informatics and Computer Science

Status: Compulsory

ECTS: 5

Attendance prerequisites: RM01, RM02, RM13, M1.02

Course aims: Acquiring advanced database concepts and techniques, significance of physical data organization in a database; acquiring principles of conceptual modeling, applicative query languages and programming transactions.

Course outcome: After completion of the course, students have adopted techniques for database programming. They have acquired experience in using applicative SQL and conceptual database modeling.

Course content:

- Extended Entity Relationship (EER) Modeling;
- Embedding query languages into programming languages; SQL/C; SQL/JAVA;
- Transaction management: transaction and crash recovery; concurrency control
- Client-server database systems
- Database physical design: file structure; indexed files, hashed files, variable length record files; database efficiency and tuning.
- Query optimization.

Literature:

1. G.Pavlović-Lažetić: Osnove relacionih baza podataka, Matematički fakultet, Beograd, 1999.
2. Ramakrishnan Raghu, Gehrke Johannes: Database Management Systems, 3rd edition, McGraw-Hill, 2003

(a lecturer may recommend other literature sources if deemed appropriate)

Number of hours: 4	**Lectures: 2**	**Tutorials: 2**	**Laboratory: -**	**Research: -**

Teaching and learning methods: Frontal / Individual / Lectures / Exercises

Assessment (maximal 100 points)

Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	-
Exercises / Tutorials	-	Oral exam	-
Colloquia	40	Written-oral exam	60
Essay / Project	-		