Course Unit Descriptor

Study Programme: Computing and Control Engineering

Course Unit Title: Databases 1

Course Unit Code: 06 - RI43A

Name of Lecturer(s): Dimitrieski Vladimir, Celikovic Milan

Type and Level of Studies: Bachelor level

Course Status (compulsory/elective): compulsory

Semester (winter/summer): winter

Language of instruction:english

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated:8

Prerequisites: none

Course Aims:

Basic students education in databases. Students gain fundamental knowledge in databases and learn basic techniques of implementation, use and maintenance of databases.

Learning Outcomes:

Students acquire basic knowledge on ER and relational data models, the SQL language and file organization, which is further used in the practice and specialized courses in: Databases 2, Software Specification and Modeling, Information System Engineering, Business Informatics, and Database Systems

Syllabus:

Databases and their role in the development and exploitation of information systems. Basic notions and concepts in databases, Database management system. Data models. ER data model; Relational data model. Relational algebra. Types of database constraints in relational data model. Functional dependency and the relation scheme key. Fundamentals of database design. The database management system language SQL. Physical data structures and file systems. Methods and process of file organization. Pile, Sequential, Hash, Index-Sequential and Index B-tree file organization. Transaction data processing.

Required Reading: Relevant literature in English TBD

Weekly Contact Hours:2	**Lectures:2**	**Practical work:0**

Teaching Methods:

Teaching is performed through lessons, oral and computer exercises (in the computer classroom), as well as consultations. Through the teaching process, students are constantly motivated to an intensive discussion, problem oriented reasoning, independent study work and active participation in the whole lecturing process. The prerequisite to enter final exam is to complete all the pre-exam assignments by earning at least 30 points

Knowledge Assessment (maximum of 100 points):100

Pre-exam obligations	points	**Final exam**	points
Group Assignment		Examination Assignment	
Exercises			
Test			
Test			

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam,

project presentation, seminars, etc.