

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Databases Management				
Study programme	Specialist professional graduate study of Information Technology in Business Systems				
Status of a course	Obligatory				
Year of study	1	Semester (Winter/Summer)	W	ECTS credits	4
Goals of a course					
Acquiring knowledge and competencies in the application of relational theory in database development. Acquiring knowledge and competencies in the management of structure and data management in the database, as well as the procedures of upgrading and maintaining the database. Acquiring knowledge about the structure and working principle of non-relational databases.					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
Outcome 1: Apply information and communication systems design methods. Outcome 6: Apply appropriate tools in the implementation of information and communication systems. Outcome 7: Apply methods and techniques for creating and managing databases. Outcome 8: Apply methods and techniques for managing security and data protection in information and communication systems.					
Expected learning outcomes on a level of a course					
<ol style="list-style-type: none"> 1. Explain the application of relational algebra, operators and normalization methods in database development. 2. Explain processes and demonstrate procedures for managing the physical structure of database management systems, and the logical structure and elements of databases. 3. Explain processes and demonstrate database upgrade and maintenance procedures. 4. Explain the concepts of the physical and logical structure of non-relational (NoSQL) databases, and compare the logical structure of relational (SQL) databases and non-relational (NoSQL) databases. 					
Content of a course					
Relational algebra. Dependences in relational databases (functional, fuzzy and link dependences). Normalization and normal forms. Partial information and databases. Techniques of inductive reasoning for relational databases modelling. Client-Server architecture. Characteristics of SQL databases according to ANSI SQL 99 specification. Application of relational algebra to SQL databases. Working with SQL databases (queries, triggers, storage procedures and functions). Databases upgrade in relation with the goal of upgrading and maintaining canned IS. BP maintenance (testing tables' accuracy, consistency, BP fine tuning for more rapid and efficient response). Managing users for access to BP, defining authorizations. Making BP backup copies. Backup recovery demands. Reinstallation of BP on other hardware specifications.					
Teaching modes	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
Grading, evaluation and monitoring of students' work continuously during lectures and exams					
Grading is based upon evaluation course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.					