

## DESCRIPTION OF A STUDY COURSE – SYLLABUS

<b>Title of a course</b>	Database Systems				
<b>Study programme</b>	Professional undergraduate study Information Science				
<b>Status of a course</b>	Obligatory				
<b>Year of study</b>	2	<b>Semester (Winter/Summer)</b>	S	<b>ECTS credits</b>	5
<b>Goals of a course</b>					
Acquiring knowledge and competences on design procedures, methods of structuring, and capabilities and limitations of databases. Acquiring competencies in the application of SQL in managing structure and data in a relational database.					
<b>Conditions for enrolling course</b>					
Fundamentals of informatics, Logical elements of information, Modelling of data and processes					
<b>Learning outcomes on a level of a study programme which includes course</b>					
<p>Outcome 2: Apply business information system design methods.</p> <p>Outcome 4: Develop an application solution for the Internet and desktop environment.</p> <p>Outcome 6: Apply appropriate business information system protection techniques.</p> <p>Outcome 11: Apply mathematical and statistical methods in information science.</p> <p>Outcome 12: Apply engineering methods and principles in information science.</p> <p>Outcome 14: Participate in teamwork.</p> <p>Outcome 15: Independently present professional content in written and spoken form in Croatian and English.</p>					
<b>Expected learning outcomes on a level of a course</b>					
<ol style="list-style-type: none"> <li>1. Distinguish constructs of conceptual, logical and physical data models.</li> <li>2. Describe the physical structure of the database and explain the differences between a traditional file organization and DBMS database organization.</li> <li>3. Construct a normalized data model, and use SQL to create a database scheme.</li> <li>4. Use SQL to manipulate the data and structure in a database.</li> <li>5. Explain the process and distinguish database development steps.</li> <li>6. Investigate some of the offered specific capabilities and applications of the database system, and present the results of research learning.</li> </ol>					
<b>Content of a course</b>					
Concept and definition of databases. Logical link between data. Relational databases, relational models of data. Updating a relation, the goal of modelling relational databases. Relational operators, functions of dependence, fuzzy dependence and dependent links. DE compilation of relational scheme. Normal form, non-normalized relational databases. Databases with incomplete information. Logic and databases. Object-oriented databases. SQL. Systems for managing databases. Updating databases. Integrity and security of databases. Distributed databases. Through exercises students implement what they learn during lectures. Practical part of the exercises is carried out on the corresponding systems of database management.					
<b>Teaching modes</b>	<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 _____		
<b>Grading, evaluation and monitoring of students' work continuously during lectures and exams</b>					
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.					