

## SYLLABUS COURSE DESCRIPTION

<b>COURSE TITLE</b>	<b>Database Management Systems</b>
<b>COURSE CODE</b>	76213
<b>SCIENTIFIC SECTOR</b>	INF/01
<b>DEGREE</b>	Bachelor in Computer Science
<b>SEMESTER</b>	2nd
<b>YEAR</b>	2nd
<b>CREDITS</b>	6
<b>TOTAL LECTURING HOURS</b>	40
<b>TOTAL LAB HOURS</b>	20
<b>PREREQUISITES</b>	Students should be familiar with basic concepts in databases (including relational databases, SQL, and relational algebra) and algorithms and have decent programming skills. This material is taught in the following courses: Introduction to Databases, Data Structures and Algorithms, Computer Programming.
<b>COURSE PAGE</b>	<a href="https://ole.unibz.it/">https://ole.unibz.it/</a>
<b>SPECIFIC EDUCATIONAL OBJECTIVES</b>	Type of course: "caratterizzanti" Scientific area: "discipline informatiche"  Based on the concepts gained in the introductory database course, students will develop a deeper understanding of how database management systems work. Specifically, students will learn basic and advanced techniques and methods used in database management systems to store and index data, to efficiently process concurrent user queries and to keep the data safe and consistent.
<b>LECTURER</b>	<a href="#">Sven Helmer</a>
<b>SCIENTIFIC SECTOR OF THE LECTURER</b>	ING-INF/05
<b>TEACHING LANGUAGE</b>	English
<b>OFFICE HOURS</b>	Faculty of Computer Science, Piazza Domenicani 3, POS 2.16 <a href="mailto:shelmer@inf.unibz.it">shelmer@inf.unibz.it</a> , 0471 016190

<b>TEACHING ASSISTANT</b>	TBA
<b>OFFICE HOURS</b>	TBA
<b>LIST OF TOPICS COVERED</b>	<ul style="list-style-type: none"> <li>• Physical data storage</li> <li>• Indexing and hashing</li> <li>• Query processing and optimization</li> <li>• Transaction processing</li> <li>• Concurrency control</li> <li>• Recovery</li> </ul>
<b>TEACHING FORMAT</b>	
<b>LEARNING OUTCOMES</b>	<p><b>Knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• know in detail basic and advanced methods and techniques of relational database management systems;</li> </ul> <p><b>Applying knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• be able to apply the own knowledge about database management systems to develop efficient database applications;</li> </ul> <p><b>Ability to make judgments</b></p> <ul style="list-style-type: none"> <li>• be able to evaluate existing database technologies;</li> </ul> <p><b>Ability to learn</b></p> <ul style="list-style-type: none"> <li>• be able to learn the innovative features of state-of-the-art database technologies and to follow the fast technological evolution in the field;</li> </ul>
<b>ASSESSMENT</b>	<p>The assessment of the course consists of a single written exam at the end.</p> <p>The exam consists of verification questions, transfer of knowledge questions, and exercises.</p> <p>The exam will assess the learning outcomes related to knowledge and understanding using verification questions, the learning outcomes related to applying knowledge and understanding using transfer of knowledge questions and exercises.</p>
<b>ASSESSMENT LANGUAGE</b>	English
<b>EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS</b>	<p>The written exam counts 100% of the grade.</p> <p>The exam is evaluated according to the following criteria: clarity of answers, ability to recall principles and methods used in database systems, skill in applying knowledge such as developing and querying databases</p>
<b>REQUIRED READINGS</b>	Silberschatz, Korth, Sudarshan: <i>Database System Concepts</i> , 5 <sup>th</sup> edition (or later), McGraw Hill, 2006.



<b>SUPPLEMENTARY READINGS</b>	Garcia-Molina, Ullman, Widom: Database Systems: The Complete Book, Prentice-Hall 2002.
<b>SOFTWARE USED</b>	