

Program	Level		Second cycle				
	Name of the program		Theoretical Computer Science, Applied Mathematics				
COURSE							
Course title	Advanced Database Systems						
Course code	Semester	Course status	ECTS	Contact	hours		
				(L+AE+LE)			
CS 535	III	Elective course	7	2+2+1			
Lecturer	Introducing students to several advanced topics in the field of databases. Expanding knowledge about databases beyond the framework of a classic course on relational databases and the SQL language.						
Course Goals	Upon completion of the module, the student should master some advanced techniques in the field of databases.						
COURSE CONTENT							
<ul style="list-style-type: none"> - Requirements imposed upon DBS technology over time - Beyond RDBMS' (OO-DBS, OR-/ER-DBS, Document DBS) - Standardization (OO, OMG, ODMG, SQL-99) - Active DBS - Transaction Management - Distributed DBS - Heterogeneous/Federated/Multi-DBS - Data Warehouse - Change Management - XML in Data Management and Data Exchange - Multimedia DBS, Digital Libraries and WWW Applications - Data Mining. 							
LITERATURE							
[1] R. Ramakrishnan et al, Database Management Systems, 3rd Edition, McGraw - Hill, 2002. [2] C. J. Date, An Introduction to Database Systems, 8th edition, Addison-Wesley, 2003. [3] A. Silberschatz, H. F. Korth, S. Sudarshan, Database System Concepts, 4th edition. McGraw-Hill, 2001. [4] C. Dye, Oracle Distributed Systems, O'Reilly and Associates, 1999. [5] J. L. Harrington, Object-Oriented Database Design Clearly Explained, Morgan Kaufmann, 1999. [6] R. M. Colomb, Deductive Databases and their Applications, CRC Press, 1998. [7] R. Kimball, M. Ross, The Data Warehouse Toolkit – The Complete Guide to Dimensional Modeling, 2nd edition. John Wiley & Sons, 2002.							
STUDENT WORKLOAD (hours in a semester)							
Lectures	30	Exercises	45	Individual work	100	T o t a l	175
GRADING			REMARKS				
Criterion	Maximum points	Minimum points					
Midterm exams	30	15					
Projects	20	10					
Final exam	50	30					
T o t a l	100	55					