Polytechnic Institute of Viseu
School of Technology and Management of Viseu

Course title	Database Technology
Scientific area	Informatics Engineering
Teaching method	Presential, assisted with computer technologies; self study; case studies; lectures; discussions.

Lecturers:	Filipe Alexandre Almeida Ningre de Sá Pedro Miguel de Oliveira Martins	Language of instruction	English
ECTS	5	Semester	Spring
Hours per week	2	Hours per semester	26 TP

Objectives of the course	After attending this course the students will be able to: 1. Recognize the importance of using database management systems; 2. Knowing the different types of databases: advantages and disadvantages in using; 3. Identify principles and characteristics of data management using database systems; 4. Know and designing and implementing relational databases in the various processes; 5. Design data models and implement databases; 6. Know and apply the rules of data normalization; 7. Understand and apply the SQL data manipulation; 8. Understand the various stages of data optimization; 9. Construction of ER Models; 10. Construction databases in MySQL; 11. SQL statements; 12. Development Applications; 13. Develop a project using relational databases and external connections (python).
Entry requirements	There aren't any.
Course contents	1.Databases Introduction 2.An architecture for a database management system 3.Modeling to relational databases 4.Normalization 5.Introduction to SQL and SQL sub Languages 6.Commands and datatypes in SQL 7.Introduction to relational database (installation, configuration and parameter) 8.Construction of relational databases 9.Operations in MYSQL or other
Assessment methods	In this course in the theoretical lessons are used slides. In the practical classes and theoretical-practical the students do some tasks. The course is complemented with a set of activities supported by e-learning tool.

	The course evaluation is made taking into consideration a test and a practical component (practical work) according to the following rules: 1 - The test or examination corresponds to 60% of the final grade. 2 - Practical work (developed only during presential classes) accounts for 30% of the final grade (valid for all evaluations). Note that, the final practical assignment requires presentation and defence. 3 - Continuous assessment 10%. In the lectures the concepts are exposed making up a direct association to the various methods and techniques of data modelling and functional modelling. In the practical classes are taught and applied techniques and methods through real examples.
Recommended readings	Gouveia, F.,(2015) Fundamentos de base de dados, FCA Bagui, S. (2012). Database design using entity-relationship diagrams (2nd ed.). Boca Raton, FL: CRC Press. Borgida, A., Chaudhri, V. K., Giorgini, P., & Yu, E. S. (2009). Conceptual modeling: foundations and applications (1st ed.). New York: Springer. Chen, P. P.-S. (1976). The entity-relationship model---toward a unified view of data. ACM Transactions on Database Systems, 1(1), 9–36. doi:10.1145/320434.320440 Gane, C., & Sarson, T. (1983). . Rio de Janeiro: LTC. Lopes, F. C., Morais, M. P., & Carvalho, A. J. (2005). Desenvolvimento de Sistemas de Informação. FCA - Editora de Informática. Ramos, P. (2006). Desenhar bases de dados com UML. Lisboa: Edições Sílabo. C. J. Date (2004), "An Introduction to Database Systems", Pearson/Addison-Wesley, ISBN: 0-321-18956-6 Ramez Elmasri (2004), Shamkant B. Navathe, "Fundamentals of database systems", Pearson/Addison Wesley, ISBN: 0-321-20448-4 Useful Links SQL Course : www.sqlcourse.com Advance SQL Course - www.sqlcourse2.com
Additional information	