Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
IND356	Database Management	5	3	0	0	3	4

Prerequisites	ING231
Admission Requirements	ING231
Language of Instruction	French
Course Type	Elective
Course Level	Bachelor Degree
Objective	Database systems, which form the base of todays' information technology applications and their management is very important to comprehend information technology systems. This course as a selective course will help the students to appraise a database management system and how data is defined, updated and managed in the system. In this context the aim of this course is determined as: • showing the students how database systems are evolved from first computer systems. • helping the students to evaluate the advantages and disadvantages of various database systems. • helping the students to design a database management system. • helping the students to put into practice their designed database management system.
Content	1. week : Explanation of database management system concepts and their comparison to classic file systems. 2. week : Explanation of database management system concepts and their comparison to classic file systems. 3. week : Database models: relational model 4. week : Relational model (relational calculus,relational algebra) 5. week : Relational model (relational calculus,relational algebra) 6. week : Structured query language: SQL 7. week : Structured query language: SQL 8. week : Mid term 9. week : Physical organization of relational database system 10. week : Evaluation of relational operators 11. week : Query optimization 12. week : Concurrent access and transaction management 13. week : Security in database management systems 14. week : Recovering from database crashes
References	• Ramakrishnan and Gehrke, Database Management Systems, McGraw Hill, 2003. • Date, C.J., An Introduction to Database Systems, Addison-Wesley, 2004.

Theory Topics

Week	Weekly Contents
1	Explanation of database management system concepts and their comparison to classic file systems
2	Explanation of database management system concepts and their comparison to classic file systems
3	Database models: relational model
4	Relational model (relational calculus,relational algebra)
5	Relational model (relational calculus,relational algebra)
6	Structured query language: SQL
7	Structured query language: SQL
8	Mid term
9	Physical organization of relational database system
10	Evaluation of relational operators
11	Query optimization
12	Concurrent access and transaction management
13	Security in database management systems
14	Recovering from database crashes