Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF324	Database Design and Applications	5	2	0	2	3	5

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	The objective of this course is to present an overview of the principles and the current techniques in relational databases subject. The course focuses on the modeling of data and the desing of a database in the context of DBMS SQL Server 2008 Another secondary objective of the course is the development of student autonomy in the use of database management system. This is a reflection of the reality of the labor market data and student are encouraged to respond positively to seeing the opportunity to enhance their knowledge of the DBMS.
Content	Introduction, properties and classification of DBMS, fundamental concepts Entity-relationship model: entity, association and attribute Relational model, normalization of a relationship Functional dependencies and normal forms Integrity constraints Relational Algebra Query Language: SQL SQL -- Simple Queries SQL -- Aggregate and complex queries Query Optimisation Indexing Triggers and Stored Procedures Transaction Management Isolation Levels
References	? Audibert, L. Bases de donne´es : de la mode´lisation au SQL : conception des bases de donne´es - mode`le relationnel et alge`bre relationnelle -langage SQL - programmation SQL, Ellipses, 2009 ? Elmasri,R& Navathe, S. , Conception et architecture des bases de données, Pearson Education, 2004 ? Chauhan, C. (2015). PostgreSQL Cookbook. Packt Publishing Ltd. (http://kutuphane.gsu.edu.tr/tr) ? Obe, R. O., & Hsu, L. S. (2017). PostgreSQL: Up and Running: a Practical Guide to the Advanced Open Source Database. " O'Reilly Media, Inc.". (http://kutuphane.gsu.edu.tr/tr) ? https://www.postgresql.org/ ? Gardarin, G., Bases de données, Eyrolles, 2003. ? Date, C.J., An Introduction to Database Systems, Addison-Wesley, 2000. ? Ünal Yarımağan, Veritabanı Sistemleri, Akademi Yayınları, 2000. ? Yaşar Gözüdeli, SQL Server 2019 & Veritabanı Programlama, Seçkin Yayıncılık, 2019

Theory Topics

Week	Weekly Contents
1	Introduction, properties and classification of DBMS, fundamental concepts
2	Entity-relationship model: entity, association and attribute
3	Relational model, normalization of a relationship
4	Functional dependencies and normal forms
5	Integrity constraints
6	Relational Algebra
7	Query Language: SQL
8	SQL -- Simple Queries
9	SQL -- Aggregate and complex queries

Week	Weekly Contents
10	Query Optimisation
11	Indexing
12	Triggers and Stored Procedures
13	Transaction Management
14	Isolation Levels