

Database management

Course title - Intitulé du cours	Database Management
Level / Semester - Niveau /semestre	M2/S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Chihab HANACHI
Lecture Hours - Volume Horaire CM	15
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	English
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts – Coordonnées de l'équipe pédagogique : Prof. Chihab HANACHI, hanachi@ut-capitole.fr.
Office MF210. Available after the courses.

Course Objectives – Objectifs du cours : Students will learn how to

- Analyze textual requirements in order to design a conceptual data schema of good quality (normalized and with integrity constraints) in Entity-Relationship and Relational formalisms;
- Write queries to extract information from a database in algebraic and SQL languages (selection, projection, join, aggregate functions, set oriented operators, group by...);
- Use a Database management System (creating schemas and views, instantiating a database and querying it in SQL);
- Handle data with SQL through a host language (e.g. Python);
- Query semi-structured data.
- Derive process from event data (Process Mining).

Grading system:

Project (50%) and practical works and test (50%).

Bibliography/references:

- Paolo Atzeni, Stefano Ceri, Stefano Paraboschi and Riccardo Torlone,
Database Systems - Concepts, Languages and Architectures,
Ed. McGraw Hill
free copy made available by the authors here: <http://dbbook.dia.uniroma3.it/>
- Wil M. P. van der Aalst,
Process Mining - Data Science in Action, Second Edition. Springer 2016, ISBN 978-3-662-49850-7, pp. 3-452

Session planning:

The course mixes lectures, tutorials and practical works in a IT room. The last lecture will be devoted to the project launching. The project will be done in pairs and completed outside of the class.

Distance learning – Enseignement à distance :

Different distance learning approaches will be followed in case of lockdown situation (due to Covid): - Interactive virtual classrooms (zoom or equivalent); - MCQ tests and a project on Moodle; - course in powerpoint format available on Moodle; - Chatrooms/Forum during practical exercises on computer.

Prerequisites – Pré requis : basic knowledge of programming and database.