

CODE xxx

Data management technologies and policies

Credits: **3 ECTS**
 Semester: **1**
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Content of the Course Unit

In this 30-hours program you will learn the fundamental of information technology and database management with a focus on healthcare. You will discover the database design, modeling, systems and the evolving world of data warehousing, governance and more. Fundamental concepts are supported by real-world examples, query and codes when required. The courses will also teach you how medical data can be used to produce performance indicators through Business Intelligence type tools. Since these concepts should be perfectly mastered before using any kind of machine learning libraries or artificial intelligence tools, this chapter will be a perfect introduction for advanced learning in the field of computer science.

Concrete examples are presented, and you will have the opportunity to work on real databases.

The program consists of a dozen of online courses. At the end of each course, you will be able to answer a series of online questions to assess yourself. At the end of the program, you will be asked to complete a personal analysis on a set of real data to validate the course.

Detailed program

- Introduction to Information Technology in Healthcare (3h)
- Database Management: from concepts to architecture (3h)
- Organisational aspects (2h30)
- Introduction to relational databases concepts (1h30)
- SQL and NoSQL languages (3h30)
- XML language (2h30)
- Warehousing & Business Intelligence applied to healthcare (3h)
- Key Performance Indicators in healthcare (2h)

Competencies acquired for MIAI Label

Competencies	Novice	Intermediate	Advanced
1 - Select and use the right tools for structuring, exploring, researching, storing, and using data		X	
1.1 - By collecting and consolidating, explaining the data for decision-making assistance (business intelligence)			
1.2 - Knowing the sources and the data acquisition to train a model			

1.3 - By assessing the ethical and regulatory impacts linked to the data and their use			
2 - Know and apply learning and symbolic AI technologies			
2.1 - Knowing the main models and tools (their context and application conditions, their inputs and outputs)			
2.2 - By modeling a customer or application problem and identifying the use of AI to solve it			
3 - Identify, explore and model AI technologies on real applications			
3.1 - By having the ability to interact with specialists in the field to identify the problem and specify the needs			
3.2 - By understanding the AI architecture dedicated to an application and by making it evolve so that it matches business or customer needs: data (collection, storage, management); learning; decision making; analysis and model relevance.			
3.3 - By knowing and mastering the management of an AI project in a company			
3.4 - Using AI to transform the company and its management			

Organisation

20 Hours of courses spread over a dozen of supports. On-line tests are systematically available for self-training.

Final examen consists of a two-parts homemade project dealing with medical data management and analysis

Remember: the program is 100% online and in English

Rules of validation

Continuous evaluation (30%), Final exam (70%)