


# Introduction to Databases



Data Base and Data Mining Group of Politecnico di Torino

Tania Cerquitelli

AA. 2019-2020

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## Professors

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- Office hours through remote connection: by appointment



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## Organization of the course

- Lesson start date: March 10<sup>th</sup> 2020
- Lesson end date: June 14<sup>th</sup> 2020
- Room and schedule time for lessons and practices


Date	Slot time	Room
Tuesday	11:30am – 2:30pm	Virtual Classroom
Wednesday	11:30am - 2:30pm	Virtual Classroom
Tuesday <sup>1</sup>	2:30pm - 4:00pm	LabInf – To be scheduled
Tuesday <sup>1</sup>	4:00pm - 5:30pm	LabInf – To be scheduled

<sup>1</sup> Start date will be announced




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## Objectives of the course

- The study of the relational data model
- The study of query languages for relational databases
  - Relational algebra, a procedural language
  - SQL language, with declarative and procedural features, for queries and updates
- The study of database design methodologies
- The study of active database systems and SQL statements for trigger definition
- The development of web-based applications for database querying and management




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## Course topics

- Characteristics of a database management system
- Characteristics of the relational model
- Relational algebra: main operators and query definition
- SQL language: statements for data definition and processing
- Conceptual data model (Entity-Relationship) and methodology for the conceptual and logical design of a relational database




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## Course topics

- SQL language: statements for view management, data access control, and transaction management
- Active database systems and SQL statements for trigger definition
- SQL for applications: client-server architectures, integration of SQL statements into a programming language, stored procedures, design of a client-server web-based architecture accessing a database




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## Exam policy

- The exam consists of a compulsory written part (time slot: 2 hours)
  - 3 multiple choice theory questions
  - 1 exercise on relational algebra
  - 2 exercises on SQL language
  - 1 exercise on Triggers
  - 1 exercise on database design
    - Entity-relationship model
    - Logical schema
    - Referential integrity constraints




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## Homework

- 4 homeworks to be delivered during the course
  - The first three homework exercise, delivered by the deadline, gives 0.5/30
  - The last homework exercise, delivered by the deadline, gives 1/30
- The points on the homework exercises will be valid until the exam session of January 2021 (included)




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## Homework discussion

- Students who have delivered the homework exercises could be contacted to discuss the uploaded documentation
- The homework exercises will be checked with a few students (selected randomly) during the two weeks after the deadline
- More details about how to perform the discussion will be given soon




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## Materials

- Course web site
  - <http://dbdmg.polito.it/wordpress/teaching/databases/>
  - Set of slides used in class
  - Texts and solutions of the exercises presented in class
  - Texts and materials useful for laboratory exercises/practices




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## Database book

- Database Systems - Concepts, Languages and Architectures Paolo Atzeni, Stefano Ceri, Stefano Paraboschi and Riccardo Torlone McGraw-Hill, ISBN 0-07-709500-6
- A free PDF file is available here  
<http://dbbook.dia.uniroma3.it/>

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