



Data Science And Database Technology Systems Politecnico di Torino

Exam Policy – Academic year 2018-2019

The exam consists of a compulsory written part and an optional oral part.

Written part

- **Only** students regularly booked through the Didactic portal (Portale della Didattica) are admitted to the classroom for the written part
- Students must provide their own identity document to be allowed to take the exam
- The exam duration is 2 hours
- Paper books and paper notes are allowed. Instead, **no** electronic devices (PC, laptop, mobile phone, calculators, etc.) are allowed.
- **Remark:** Students who have done the homework exercises should bring the documentation with them at the written exam

- The written part includes
 - 1 exercise on physical design (max. 7/30)
 - 1 exercise on trigger design (max. 8/30)
 - 1 exercise on data warehousing, including
 - The design of a data warehouse (max. 6/30)
 - 2 SQL queries (max. 3/30 and 4/30, respectively)
 - 2 multiple choice theory questions (1/30 each question)

Topics of the multiple choice theory questions (one single correct answer, no penalty for wrong answer) and of the (optional) oral part:

1. Data preparation: discretization, normalization, distance measures, etc.
2. Association rules: extraction algorithms (also on examples), types of itemsets (closed etc), quality indices
3. Classification: algorithms, model validation
4. Clustering: algorithms, quality indices (those presented in the classes)
5. Recovery: centralized and distributed recovery algorithms (also applied to examples of log files)
6. Concurrency control management: description of CSR, VSR, 2PL techniques (also applied to examples of schedules)
7. Distributed databases: data fragmentation and transparency levels, 2 phase commit, parallelism, benchmarking, non-relational databases

Final grade

- If the grade on the written part is $\geq 18/30$, the final exam grade is determined by the selected exam procedure, between the following two options:
 - A. Only written part (**maximum grade 26/30**)
 - Grade on the written part and points on the homework exercises are summed. The result is recorded as final grade if it is $\leq 26/30$. If the result is > 26 , the final recorded grade is **26/30**.
 - B. Written part + oral part (**maximum grade 30 with honors**)
 - Only students who pass the written part with a grade $\geq 18/30$ are allowed to take the oral part.
 - The oral part consists of 2 theory questions (1 question on topics 1-4 and 1 question on topics 5-7).
 - The (weighted and approximated) average is computed on (i) the grade on the written part + points on the homework exercises and (ii) the grade on the oral part. The result is the final grade.
 - The oral part must be taken in the same exam session of the written part (but not necessarily before the next written examination in the same session)
- If students fail the exam, the exam failure is recorded (for both procedures above).
- Homework
 - Each homework exercise, delivered by the deadline, gives 0.5/30.
 - The points on the homework exercises will be valid until the exam session of September 2019 (included).
 - Homework discussion: during each written exam, we will notify the names of the students involved in the discussion of the homework exercises. The homework exercises will be checked with these students immediately after the written exam or as communicated during lessons.