

## Schedule Databases 2024

Version 20240305 15:30, changes to last version will be marked.

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| Week date               | Topics                                 | Clips   | Exercises   | Assignment            | Book                       |
|-------------------------|--|---|---|-----------------------|----------------------------|
| <b>6 tue<br/>Feb 6</b>  | Intro;<br>Relational model             |   | Ex 1,2 (for SQL DDL: see slide model-ra:10)<br><a href="#">Defining your data</a> |                       | 1; 2.1-2.3; 7.1.1          |
| <b>6 thu<br/>Feb 8</b>  | Relational algebra                     | <a href="#">RA1</a><br><a href="#">RA2</a>                  | Ex 3-5<br><a href="#">Algebra</a>   |                       | 4 - 4.6;<br>rest of 2;     |
| <b>7 tue<br/>Feb 13</b> | ERD<br>FD: concept                     | <a href="#">FD1</a><br>erratum[16]:<br>C -> B does not hold | Ex 6-9<br><a href="#">FDs</a> ;   |                       | 3 - 3.1                    |
| <b>7 thu<br/>Feb 15</b> | More FDs: lossless decomposition, BCNF | <a href="#">FD2</a>   | Ex 10-12<br><a href="#">Lossless decompositions</a>                               | <b>Deadline HW 1</b>  | 3 - 3.3, not 3.2.8         |
| <b>8 tue<br/>Feb 20</b> | SQL                                    | <a href="#">SQL1.1</a><br><a href="#">SQL1.2</a>            | <a href="#">Queries</a>   |                       | 6 - 6.5; 7-7.2, <7.3>, 7.4 |
| <b>8 thu<br/>Feb 22</b> | Further normalization: 3NF, DP         | <a href="#">NORM1</a><br><a href="#">NORM2</a>              | Ex 15-19<br>Lab1  |                       | 3.4 (with <3.4.2>), 3.5,   |
| <b>9 tue<br/>Feb 27</b> | 4NF, indexing                          |   | <a href="#">Qualities of decompositions</a><br>Ex 20-22                           |                       | 3.6 - 3.6.2, 3.6.4; 8.3    |
| <b>9 thu<br/>Feb 29</b> | Constraints, triggers, view            |   | Lab 1<br>Ex 25  |                       | 7 - 7.5; 8; 10.1;          |
| <b>10 tue<br/>Mar 5</b> | <i>Break: no classes</i>               |   | Lab 1   | <b>Deadline HW 2</b>  |                            |
| <b>10 thu<br/>Mar 7</b> | <i>Break: no classes</i>               |   | Lab 1   |                       |                            |
| <b>10 fri<br/>Mar 8</b> |  |   |   | <b>Deadline lab 1</b> |                            |

Two more pages

|                          |   |   |   |                       |   |
|--------------------------|---|---|---|-----------------------|---|
| <b>11 tue<br/>Mar 12</b> | TP: concurrency                                   | <a href="#">CC1</a><br><a href="#">CC2</a>                        | Ex 26-32  |                       | 18 - 18.3, 18.4.1, 18.4.2, <remainder of 18.4>,                     |
| <b>11 thu<br/>Mar 14</b> | TP: recovery                                      | <a href="#">REC1</a><br><a href="#">REC2</a>                      | Ex 35-38<br><a href="#">Recovery</a>                          |                       | 19.2.1, 19.2.2; 17, 19.-19.1.5;                                     |
| <b>12 tue<br/>Mar 19</b> | 2PC;<br>Query processing<br>(algebraic rewriting) | <a href="#">2PC</a><br><a href="#">QP1</a>                        | Ex 39-40, 44  |                       | 20.5; 15.1, 15.1.3, 15.1.4, 15.3 - 15.3.4 15.4.6, <15.6.1 - 15.6.3> |
| <b>12 thu<br/>Mar 21</b> | Query processing<br>(algorithms)                  | <a href="#">QP2</a><br><a href="#">QP3</a><br><a href="#">QP4</a> | <a href="#">Session 6</a><br><a href="#">Query processing</a> | <b>Deadline HW 3</b>  | <16.1>, 16.2, 16.3 (with<16.3.2>)                                   |
| <b>13 tue<br/>Mar 26</b> | Assorted topics<br>MapReduce                      |   |   |                       | Slides will follow  |
| <b>13 thu<br/>Mar 28</b> | Discussion of<br>example<br>examination           |   |   |                       | See GitHub:<br>exam16.pdf   |
| <b>14 tue<br/>Apr 2</b>  | Guest lecture<br>Yannis Velegrakis                |   |   |                       | Slides will follow  |
| <b>14 thu<br/>Apr 4</b>  | Spare   |   |   | <b>Deadline lab 2</b> |   |

## **Assorted topics**

Information Integration: An Introduction

<https://medium.com/cracking-the-data-science-interview/an-introduction-to-big-data-data-integration-40715baa7961>

Data Cleaning:

<https://www.youtube.com/watch?v=GMxCL0PBHzA>

RDF (Adding Semantics to your data)

[https://www.europeandataportal.eu/sites/default/files/d2.1.2\\_training\\_module\\_1.3\\_introduction\\_to\\_rdf\\_sparql\\_en\\_edp.pdf](https://www.europeandataportal.eu/sites/default/files/d2.1.2_training_module_1.3_introduction_to_rdf_sparql_en_edp.pdf)

Big Data:

<https://www.youtube.com/watch?v=bAyrObl7TYE>

NoSQL Databases:

[https://www.youtube.com/watch?v=uD3p\\_rZPBUQ](https://www.youtube.com/watch?v=uD3p_rZPBUQ)

[https://www.youtube.com/watch?v=ql\\_g07C\\_Q5I&t=30s](https://www.youtube.com/watch?v=ql_g07C_Q5I&t=30s)