

# Databases

Jörg Endrullis

VU University Amsterdam

2015

# Agenda Items

- **Lecture:**
  - Monday 13:30–15:15
  - Wednesday 11:00 - 12:45

# Agenda Items

- **Lecture:**

- Monday 13:30–15:15
- Wednesday 11:00 - 12:45

- **Office hours:**

- Monday 15:30-16:30 in T-437 (if not there, check T-429)
- **Emails will be answered very slowly. Try office hours!**

# Agenda Items

- **Lecture:**

- Monday 13:30–15:15
- Wednesday 11:00 - 12:45

- **Office hours:**

- Monday 15:30-16:30 in T-437 (if not there, check T-429)
- **Emails will be answered very slowly. Try office hours!**

- **Lab work and questions/answers:**

- Tuesday 15:30-17:15 (first week only Thursday)
- Thursday 15:30-17:15

# Agenda Items

- **Lecture:**

- Monday 13:30–15:15
- Wednesday 11:00 - 12:45

- **Office hours:**

- Monday 15:30-16:30 in T-437 (if not there, check T-429)
- **Emails will be answered very slowly. Try office hours!**

- **Lab work and questions/answers:**

- Tuesday 15:30-17:15 (first week only Thursday)
- Thursday 15:30-17:15

- **Final exam** on Tuesday March 24, 12:00-14:45

# Agenda Items

- **Lecture:**

- Monday 13:30–15:15
- Wednesday 11:00 - 12:45

- **Office hours:**

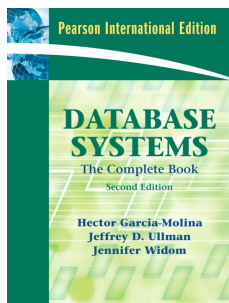
- Monday 15:30-16:30 in T-437 (if not there, check T-429)
- **Emails will be answered very slowly. Try office hours!**

- **Lab work and questions/answers:**

- Tuesday 15:30-17:15 (first week only Thursday)
- Thursday 15:30-17:15

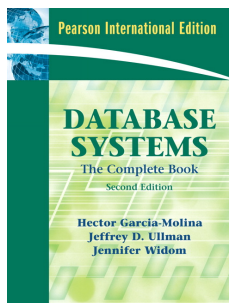
- **Final exam** on Tuesday March 24, 12:00-14:45

Check rooms on vurooster, they change from week to week.



## **Database Systems, The Complete Book**

by Hector Garcia-Molina, Jeffrey D. Ullman and Jennifer Widom  
2008 edition (second edition)



## **Database Systems, The Complete Book**

by Hector Garcia-Molina, Jeffrey D. Ullman and Jennifer Widom  
2008 edition (second edition)

**Prepare every lecture by reading the book chapters!**



## Overall Goal

Thorough understanding of database concepts

- from a user perspective  
(not how databases work internally)

## Overall Goal

Thorough understanding of database concepts

- from a user perspective  
(not how databases work internally)

## Learning Goals

## Overall Goal

Thorough understanding of database concepts

- from a user perspective  
(not how databases work internally)

## Learning Goals

- Developing data models

## Overall Goal

Thorough understanding of database concepts

- from a user perspective  
(not how databases work internally)

## Learning Goals

- Developing data models
- Reasoning about good/bad design  
(functional dependencies)

## Overall Goal

Thorough understanding of database concepts

- from a user perspective  
(not how databases work internally)

## Learning Goals

- Developing data models
- Reasoning about good/bad design  
(functional dependencies)
- Understanding and writing non-trivial SQL statements

## Overall Goal

Thorough understanding of database concepts

- from a user perspective  
(not how databases work internally)

## Learning Goals

- Developing data models
- Reasoning about good/bad design  
(functional dependencies)
- Understanding and writing non-trivial SQL statements
- Basic knowledge of database programming

# Course Ingredients

# Course Ingredients

## **Homework:**

- there will be 4 graded homework assignments
- individually



# Course Ingredients

## Homework:

- there will be 4 graded homework assignments
- individually

You need

**75% of the homework points to qualify for the exam!**

# Course Ingredients

## Homework:

- there will be 4 graded homework assignments
- individually

## You need

**75% of the homework points to qualify for the exam!**

**90% of the homework points  $\implies$  0.5 bonus points.**

# Course Ingredients

## Homework:

- there will be 4 graded homework assignments
- individually

## You need

**75% of the homework points to qualify for the exam!**

**90% of the homework points  $\implies$  0.5 bonus points.**

**Final exam on Tuesday March 24, 12:00-14:45**

The material covers **everything from the lecture and the book chapters** that you are expected to read.

# Course Ingredients

## Homework:

- there will be 4 graded homework assignments
- individually

## You need

**75% of the homework points to qualify for the exam!**

**90% of the homework points  $\implies$  0.5 bonus points.**

Final exam on Tuesday March 24, 12:00-14:45

The material covers **everything from the lecture and the book chapters** that you are expected to read.

## Final Grade

The **exam grade** plus a possible **0.5 bonus points**.

# Lecture Overview

- Lecture 1: Introduction and Relational Model
- Lecture 2 and 3: Data Modelling
  - modelling a scenario in E/R and UML (ability)
- Lecture 4, 5 and 6: Advanced SQL
  - write nested queries with joins (ability)
- Lecture 7 + 8: Functional Dependencies
  - normalizing a database schema (ability)
- Lecture 9: Exercise Midterm Exam (will not be graded)
- Lecture 10 and 11: Transactions
  - analyse transaction schedules (ability)
- Lecture 12: Database APIs and LinQ
- Lecture 13: Practise Exam

How to pass this course?

**How to pass this course?**

# How to pass this course?

## **How to pass this course?**

- You must acquire some abilities.

# How to pass this course?

## How to pass this course?

- You must acquire some abilities.
  - can only be learned by doing



# How to pass this course?

## How to pass this course?

- You must acquire some abilities.
  - can only be learned by doing
  - work actively on the homework assignments

# How to pass this course?

## How to pass this course?

- You must acquire some abilities.
  - can only be learned by doing
  - work actively on the homework assignments
- You must acquire basic knowledge and reason about it.

# How to pass this course?

## How to pass this course?

- You must acquire some abilities.
  - can only be learned by doing
  - work actively on the homework assignments
- You must acquire basic knowledge and reason about it.
  - Read the book **before** the lectures.

# How to pass this course?

## How to pass this course?

- You must acquire some abilities.
  - can only be learned by doing
  - work actively on the homework assignments
- You must acquire basic knowledge and reason about it.
  - Read the book **before** the lectures.
  - Ask questions in class, labs or office hours.

# How to pass this course?

## How to pass this course?

- You must acquire some abilities.
  - can only be learned by doing
  - work actively on the homework assignments
- You must acquire basic knowledge and reason about it.
  - Read the book **before** the lectures.
  - Ask questions in class, labs or office hours.

### Note that

You are expected to work **4 hours per day** on this course.

# How to pass this course?

## How to pass this course?

- You must acquire some abilities.
  - can only be learned by doing
  - work actively on the homework assignments
- You must acquire basic knowledge and reason about it.
  - Read the book **before** the lectures.
  - Ask questions in class, labs or office hours.

### Note that

You are expected to work **4 hours per day** on this course.

At least try!