



Data Intensive Systems (DIS)

KBH-SW7 E25

0. Introduction to the Course



AALBORG
UNIVERSITY

Course Information

- Teacher
 - Tung Kieu
 - Please mail to tungkvt@cs.aau.dk regarding this course.
- Moodle page: <https://www.moodle.aau.dk/course/view.php?id=56763>
 - All course materials
 - Also pay attention to News Forum
 - Lecture slides will be put on Moodle the day before.

Main Reference Books

- ▶ M. Kleppmann: Designing Data-Intensive Applications, O'Reilly, 2017.
- ▶ A. Silberschatz, H. F. Korth, S. Sudarshan: Database System Concepts (7th ed.), McGraw-Hill, 2019.
- ▶ J. Han, M. Kamber, J. Pei: Data Mining Concepts and Techniques (3rd ed.), Morgan Kaufmann, 2012.
- ▶ C. S. Jensen, T. B. Pedersen, C. Thomsen: Multidimensional Databases and Data Warehousing, Morgan & Claypool, 2010
- ▶ Other materials will be given during the course.

Course Outline and Topics

➤ Infrastructure and Paradigms

- Foundations of Data Systems
- Parallel Data Systems
- MapReduce
- Distributed Data Systems
- Data Warehouse

➤ Data Analytics and Mining

- Data Exploration
- Dimensionality Reduction
- Classification
- Clustering
- Association Rules

➤ Self-study

- Spatial, Temporal, Spatio-Temporal Data
- Skyline Queries

- 10 Lectures (with exercises)
- 2 Self studies (reading materials)

Learning Time Allocation

- The course itself is intensive. After each lecture, you're supposed to go through the slides and reading materials, and do the exercises. You need to spend sufficient time in addition to the 4 hours of lecture and exercise each week.
- AAU expects each student to spend 30 hours of study per ECTS credit, amounting to 150 hours for this course.
- A suggested rough allocation
 - Lectures and exercises: ~40 hours
 - Self study: ~8 hours
 - Home readings and further exercises: ~60 hours
 - Exam preparation: ~42 hours

Exam (NEED TO DISCUSS)

- ▶ Oral exam
 - ▶ 20 minutes for each students
 - ▶ Including everything (from start to grading and feedback)
- ▶ 10 topics for the exam
 - ▶ To be announced towards the end of the course
- ▶ You draw a number (1-10) that corresponds to one of the 10 topics
- ▶ Then you give a concise presentation, followed by questions from the examiner and the censor.
 - ▶ ~5 minutes presentation + ~10 minutes questions

Lectures Time

- ▶ Every Wednesday

- ▶ 8:15 – 10:00 Lecture x 2 with a break
- ▶ 10:15 – 12:00 Exercise (for the lecture on the same day)