



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Distribuerade system Distributed Systems

EDAP25, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED C/D

Date of Decision: 2023-04-18

General Information

Language of instruction: The course will be given in English

Aim

To give an introduction to the fundamental concepts of distributed systems, their properties and application in practice.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

display basic knowledge of:

- different types of distributed systems and their properties,
- failure and recovery in distributed systems,
- models and abstractions for distributed systems,
- distributed models of logical time,
- distributed algorithms and protocols,
- and distributed state and computing.

Competences and skills

For a passing grade the student must

- be able to reason about properties of distributed systems,
- be able to use concepts and abstractions to model distributed systems and to express their behaviour,
- be able to use fundamental distributed algorithms and protocols in managing resources,

- sharing state, maintaining distributed state, and coordinate distributed computation,
- be able to apply the conceptual knowledge to the implementation of distributed algorithms on a variety of platforms.

Judgement and approach

For a passing grade the student must

- be able to judge the suitability of models and platforms for distributed systems for a given problem,
- display a basic understanding of the trade-offs and limits of the concepts and techniques in distributed system design.

Contents

- Models for distributed systems, both synchronous and asynchronous,
- consensus, leader election,
- consistency, replication,
- logical clocks,
- fault tolerance.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Laboratory assignments (for a passing mark 3) and optional written exam (for grade 3-5).

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Admission requirements:

- EDAA01 Programming - Second Course or EDAA30 Programming in Java - Second Course

The number of participants is limited to: 30

Selection: Completed university credits within the program. Priority is given to students enrolled on programmes that include the course in their curriculum.

Contact and other information

Course coordinator: Jörn W. Janneck, jwj@cs.lth.se