



LTAT.06.007 Distributed Systems

Lecture 0 – Course overview

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Course overview

Basic (Lectures 1-5)

- Coordination of parallel processing, and mutual exclusion
- Distributed decision making
- Mutual communication protocols

Intermediate (Lectures 5-10)

- Fault tolerance
- Replica management
- Data consistency models and management

Advanced (Lectures 10-15)

- Distributed system deployments
- Dynamic scalability of systems

Course overview

Theory

Concepts and principles (in lectures)

Practical work

Exercises (in the lab) – **Mohan Liyanage**

Discussion on emerging topics

Opportunistic computing/communications

Social-aware technologies (5G, Internet of Things, etc)

Course schedule

- Lecture meetings
 - Monday 10:15-12:00 in Delta, Narva mnt 18 - 1008
- Weekly exercise sessions
 - Seminar (Group 1): Narva mnt 18 - 2048; Wednesday 10:15-12:00
 - Seminar (Group 2): Narva mnt 18 - 2047; Friday 12:15-14:00
- Exam (tentative)
 - TBA

Course grading

Students collect course points during the course. These points are then converted to a grade

- Tasks/exercises will be assigned on weekly basis
- Tasks are delivered online
- Exercises are done in the lab, but they are also uploaded to the system, so if you cannot attend, download the exercises and send them (one extra day after the lab is giving to send the exercises to the teaching assistant)

Course grading

Tasks/exercises will be assigned on weekly basis

Points of each exercise/task will be announced with the task

Grade	Points
5	90-100
4	80-89
3	70-79
2	60-69
1	50-59
0	49 and below

Course grading (summary)

- Exam 40pts
 - You need to score half points to pass (MANDATORY)
- Practical work 60pts
 - 3 tasks (45pts)
 - Within each task is described grading instructions based on implementations of functions and standard answers
 - Quiz/exercises (15pts)

Course book

Van Steen, Maarten , Tanenbaum, Andrew. Distributed Systems: Principles and Paradigms (Third edition). Published by Maarten van Steen, 2017.
[Previous versions published by Pearson]
Free download from <https://www.distributed-systems.net/>

Other usefull course books:

- **Ghosh, Sukumar.** Distributed systems: an algorithmic approach (second edition). Chapman&Hall/CRC, 2015. Author's own course material, Spring 2015: <http://homepage.divms.uiowa.edu/~ghosh/16615.html>
- **Coulouris, George, Dollimore, Jean, Kindberg, Tim:** Distributed Systems: Concepts and Design [5th Edition], Addison-Wesley 2012

Expected knowledge, background

Programming skills

Basics of Networking and Data Communication

Layers, protocols, ...

Basics of Operating systems

System calls, APIs, ...

Concurrency and mutual exclusion in single computer

Critical sections, shared memory, ...

Discussions

The lecture sessions will be based on discussions. Everybody participates

Step 1: Pair discussion for two minutes,

Step 2: Collect the points together



Questions?

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