

CS-206

Parallelism and concurrency

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Cursus	Sem.	Type
Communication systems	BA4	Obl.
Computer science	BA4	Obl.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	14
Hours	4 weekly
Lecture	1 weekly
Exercises	1 weekly
Practical work	2 weekly
Number of positions	

Remark

réservé aux étudiants de IC devant refaire la matière

Summary

Course no longer offered for new students; this edition is only a make-up course for those who repeated the year. Please log in with EPFL credentials and consult the mediaspace link below for course videos.

Content

(See <https://gitlab.epfl.ch/lamp/cs206> for more information.)

Threads and fork/join parallelism

Synchronization

Java Memory Model

Parallel programming

Data-level parallelism

Task-level parallelism

Futures

Keywords

Parallelism, threads, synchronization, locks, memory models.

Learning Prerequisites**Required courses**

- Functional programming (CS-210)
- Algorithms (CS-250)
- Computer Architecture (CS-208)

Recommended courses

System oriented programming (CS-207)

Important concepts to start the course

Algorithms and data structures

Assessment methods

- Graded labs
- Midterm
- Final exam

Resources

Bibliography

Maurice Herlihy and Nir Shavit. 2012. The Art of Multiprocessor Programming, Revised Reprint (1st. ed.). Morgan Kaufmann Publishers Inc., San Francisco, CA, USA.
(available from EPFL library)

Ressources en bibliothèque

- [The Art of Multiprocessor Programming / Herlihy](#)

Moodle Link

- <https://go.epfl.ch/CS-206>

Videos

- <https://mediaspace.epfl.ch/channel/CS-206+Parallelism+and+concurrency/31866/subscribe>