



Itä-Suomen ICT-polku

COURSE DATA

BASIC INFO

Name	Distributed and Concurrent Systems		
Code	Savonia: ETX7300 Karelia: LTD7010 UEF: 3621415		
Name in Finnish	Hajautetut ja samanaikaiset järjestelmät		
Credits (ECTS)	5	Grading	0 - 5
Teaching period	2K		
Language	Finnish		
Type	Savonia: mandatory course Karelia: elective course UEF/TKT: mandatory course		



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DESCRIPTION

Objectives	Student understands the difference in functionality, design, and implementation of centralized and distributed systems. Student understands principles of service oriented architecture and microservice architecture. Student knows most important models that are used as base of design for distributed systems (structural, interaction, fault, and security models). Student understands the layered model of communication and the role of different layers. Student is able to apply REST principles in API design and implementation. Student can design and implement a simple distributed system including protocols and security procedures. Student understands the challenges introduced by concurrency in system design and implementation. Student is able to coordinate the communication of concurrent threads and access to shared resources using chosen programming platform. Student understands the need for transaction management and elementary principles in distributed systems.
Content	Elementary concepts and challenges of distributed systems. Models of distributed systems (structural, interaction, fault, and security models). Communication and communication protocols in distributed systems. Security of distributed systems. Concept and challenges of concurrency. Coordination of threads and inter-thread communication.
Modes of study	Lectures/materials, exercises, exam.
Study materials	Lecture notes. Coulouris, Dollimore, Kindberg, Blair: Distributed Systems, Concepts and Design
Teaching methods	Lectures 32h, exercises 16h
Prerequisites	Programming III, or similar skills. Web-programming, or similar skills.
Other issues	