Complex networks and big data
Komplexa nätverk och stora datamängder
6 credits

Programme course
TSKS33

Valid from: 2023 Spring semester

<table>
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<tr>
<th>Determined by</th>
<th>Main field of study</th>
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<td>Board of Studies for Electrical Engineering, Physics and Mathematics</td>
<td>Information Technology, Computer Science and Engineering, Computer Science, Electrical Engineering</td>
</tr>
<tr>
<td>Date determined</td>
<td>Course level</td>
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<tr>
<td>2022-08-31</td>
<td>Second cycle</td>
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<tr>
<td>Revised by</td>
<td>Disciplinary domain</td>
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<td></td>
<td>Technology</td>
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<tr>
<td>Revision date</td>
<td>Subject group</td>
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<td></td>
<td>Electrical Engineering</td>
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<td>Offered first time</td>
<td>Offered for the last time</td>
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<tr>
<td>Autumn semester 2020</td>
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<tr>
<td>Department</td>
<td>Replaced by</td>
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<tr>
<td>Institutionen för systemteknik</td>
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Specific information

Replaces TSKS11.

Course offered for

- Master of Science in Computer Science and Engineering
- Master of Science in Industrial Engineering and Management
- Master of Science in Information Technology
- Master of Science in Computer Science and Software Engineering
- Master of Science in Applied Physics and Electrical Engineering
- Master of Science in Industrial Engineering and Management - International
- Master of Science in Applied Physics and Electrical Engineering - International
- Bachelor's Programme in Mathematics
- Master's Programme in Communication Systems
- Master's Programme in Mathematics

Prerequisites


Intended learning outcomes

After completing the course the students should

- with adequate terminology, in a well-structured manner and logically coherent, be able to describe and conduct simpler calculations that relate to the specific concepts listed under "course contents”.
- be able to describe, apply, and implement in a conventional programming language, and show engineering understanding of the theory and models used in the course.
- be able to, in a structured manner, and using adequate language and terminology, orally report computer laboratory work.
Course content


Teaching and working methods

The course consists of 12 lectures, 7 tutorials and a series of computer laboratories. In-class examination of the computer laboratory work.

Examination

<table>
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<tr>
<th>Code</th>
<th>Description</th>
<th>Credits</th>
<th>Grade</th>
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<tr>
<td>TEN1</td>
<td>Written examination</td>
<td>4</td>
<td>U, 3, 4, 5</td>
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<tr>
<td>LAB1</td>
<td>Laboratory work</td>
<td>2</td>
<td>U, G</td>
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Grades

Four-grade scale, LiU, U, 3, 4, 5
Other information

Supplementary courses: Courses in computer, information and communication networks, Internet and web technology, social networks, graph theory, machine learning and network analysis.

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.

Other

The course is conducted in a manner where both men’s and women’s experience and knowledge are made visible and developed.

The planning and implementation of a course should correspond to the course syllabus. The course evaluation should therefore be conducted with the course syllabus as a starting point.

The course is campus-based at the location specified for the course, unless otherwise stated under “Teaching and working methods”. Please note, in a campus-based course occasional remote sessions could be included.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.