

2-year (120 ECTS) Master program in

Communication Systems



Coordinator:

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www.commsys.isy.liu.se

Main structure

- Solid theoretical nucleus in communication systems/theory
- Very competitive program (aimed at top students only)
- Admission requirements:
 - B.Sc. EE or equivalent, >30 ECTS math
 - linear algebra, Fourier methods, probability theory
- 120 ECTS (4 semesters) full time study
 - 90 ECTS (3 semesters) coursework
 - 30 ECTS (1 semester) thesis project
 - Most courses compulsory - coherent curriculum
 - Project course (CDIO) with leadership/project mgmt part
- To start 2nd year requires 45 of 60 ECTS passed

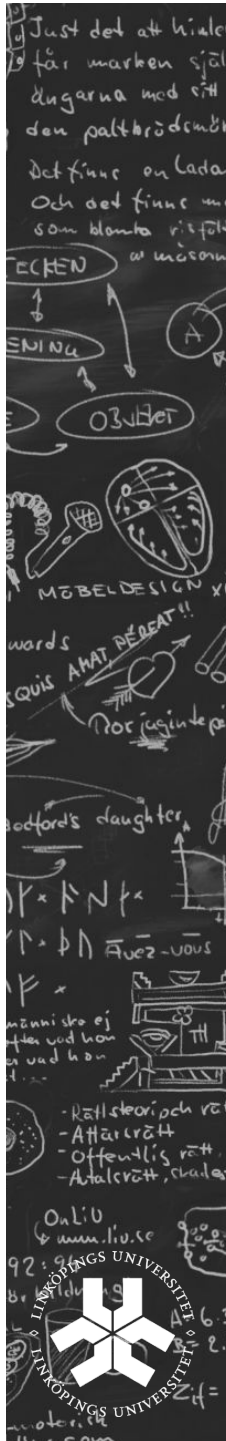
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Curriculum

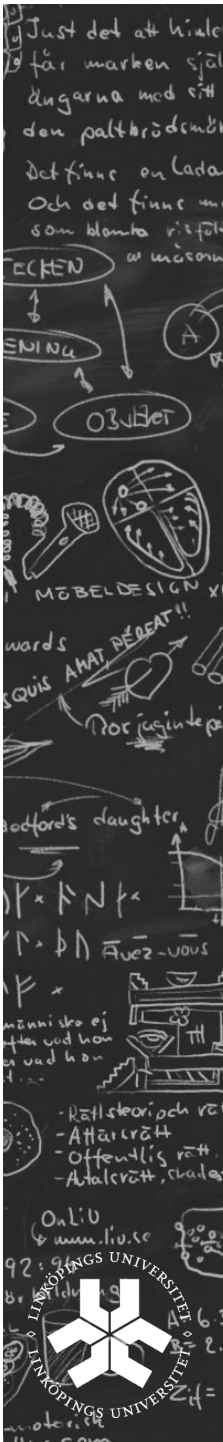
Autumn, Year 1		Spring, Year 1		Autumn, Year 2		Spr, Year 2	
HT1	HT2	VT1	VT2	HT1	HT2	V T 1	V T 2
Signal Theory	Digital Signal Processing	Digital Comm., Cont. Course	Radio Communi- cation	Communication Systems, CDIO project course (12 hp)		M.Sc. Thesis	
Information Networks	Internet- working	Data Compression	Image and Audio Coding	Elective: (3x6 hp=18 hp) Cryptography (ISY) Error Correcting Codes (ISY) Computer Security (ISY) ----- Antennas (ITN) Intro. radio electr. (ISY) Programming (IDA) Wave propagation (IFM) Optimization (MAI) Numerical methods (MAI)			
Digital Communication		Wireless Systems					
		(Additional electives)					

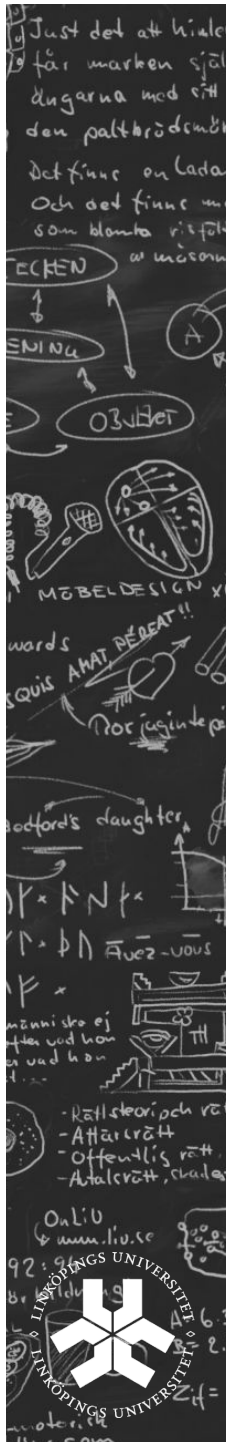
- Year 1 compulsory
- Synergy with Communications profile on Y/D



Supporting Infrastructure

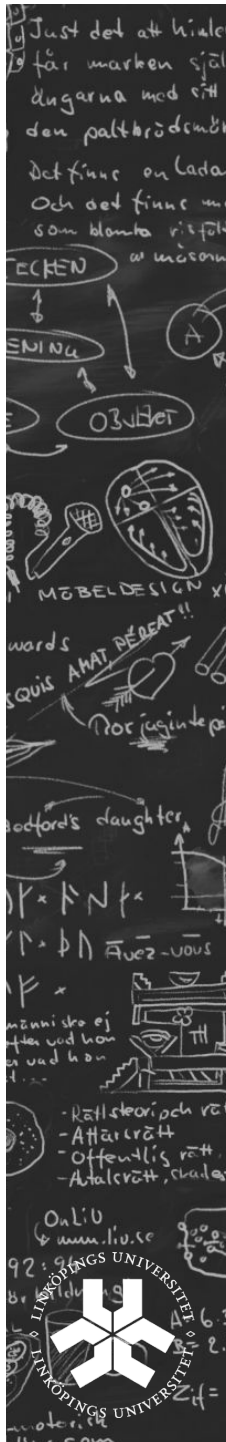
- Coordination by Communication Systems division
- Proximity to top notch research infrastructure
- Compulsory courses from 3 divisions:
 - Communication systems
 - Information coding
 - Automatic control
- Student organizations & councillor
- Linköping also offers proximity to telecom industry R&D





Organization of teaching

- Not mandatory, but **strongly recommended**: Lectures, tutorials, help sessions
- Mandatory: Exams, labs, projects, homework
- Exams:
 - Usually written. ECTS grades: A (5), B (4), C (3), Fx (fail)
 - Students who fail must retake the exam.
 - Typically exams 3 times per year in each course
- Master thesis (1 semester)
 - Perhaps the most rewarding part of the program
 - Within the general topic of communication systems

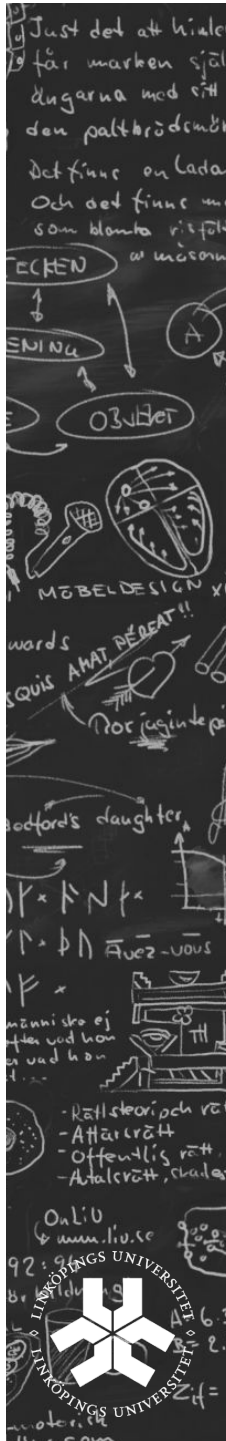


Availability of Instructors

- Questions about course contents should be discussed with the teaching assistants during the tutorial sessions.
- Students are always welcome to talk with our faculty.

Outside scheduled class hours:

- Come visit **during office hours**
- Use phone or email to make appointment



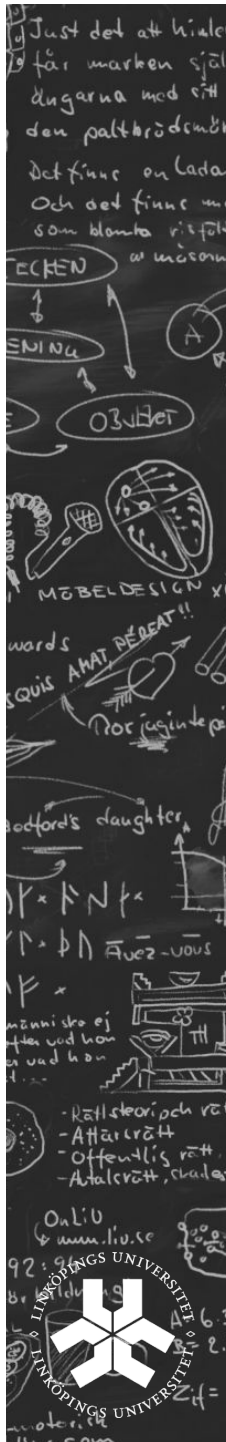
Thesis project, requirements

- Same requirements as for Swedish engineering degree program (“civilingenjör”)
- Must have passed >60 ECTS of relevant courses to start
- Generally, during last (4th) semester of program
- Thesis work requires:
 - Written report, approved by LiU examiner
 - Oral presentation at LiU, approved by examiner
 - Attend two other thesis presentations at LiU
 - Act as opponent on another student’s presentation
- Internal (at LiU) or External (abroad or in industry)
 - Same requirements (report + presentation, opposition at LiU)



External and internal thesis projects

- External project
 - Apply for directly at a company, in competition
 - Contact coordinator at LiU to find examiner
 - Meeting with industry supervisor + LiU examiner
 - Student reports both to company & LiU examiner
 - LiU examiner must approve before project starts
 - Project must have a clearly defined goal
 - Many companies offer financial support
- Internal project
 - Most departments host several student projects every year
 - Apply to the contact person for respective project
 - On occasion there are scholarships to apply for



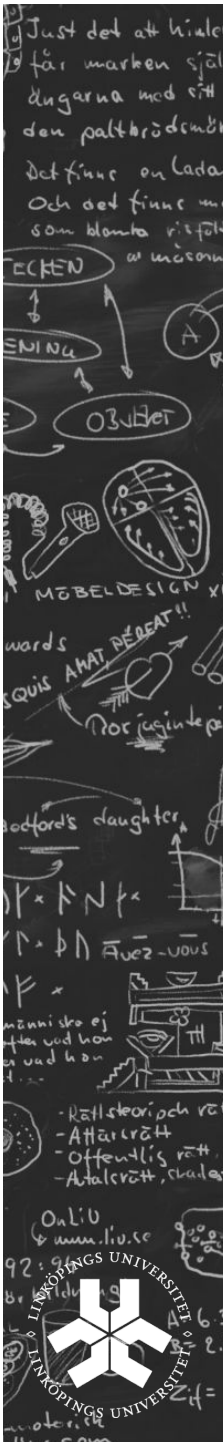
Student's own responsibility to find a thesis project!

How to find project?

- Web page
- Talk to companies
- Look for ads
- Contact faculty in relevant departments
- Talk to other students

Examples of recent thesis projects

- *Forward Error Correction for Packet Switched Networks, (work performed at Axis Communications, Lund)*
- *Radio Network test configuration for maximum test Coverage (work performed at Ericsson, Linköping)*
- *Object detection in SAR and IR images (work performed at SAAB, Linköping)*
- *Performance of Cooperative Relay Protocols over an Audio Channel (work performed at division of communication systems)*



Honor code

- Academic honesty taken very seriously at LiU
- Exams at LiU are individual efforts
 - Any form of cheating results in a failing grade and disciplinary actions
- Homework
 - Are individual efforts unless otherwise stated explicitly
 - Non-permitted collaboration or copying from other students results in a failing grade and disciplinary actions
- Master thesis
 - Must consist of original text authored by the student (unless it is a quotation)
 - Plagiarism in any form, for example copy-and-paste from other documents or from the Internet is not permitted and generally results in a failing grade for the thesis



Where to look for answers to questions

- General questions & information:

- Program webpage www.commsys.isy.liu.se/master (includes FAQ)
- Study handbook: www.lith.liu.se/sh/en

- Matters related to accommodation, course registrations etc

<http://www.liu.se/utbildning/pabyggnad>

- Matters related to admissions, visa/residence permit, grade transcripts etc:

- Origo/Studentcentrum

- Matters related to specific courses

- Course director (see webpage for each course)

- Matters specific to the master program curriculum

- Klas Nordberg, ISY/CVL (director of studies) or Erik G. Larsson, ISY/CS (program director)



Other important things

- Students must register for all courses (including mandatory courses)
 - Register at the beginning of each quarter
 - Use link from the study handbook
 - Registration is necessary to follow the course.





Contact



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