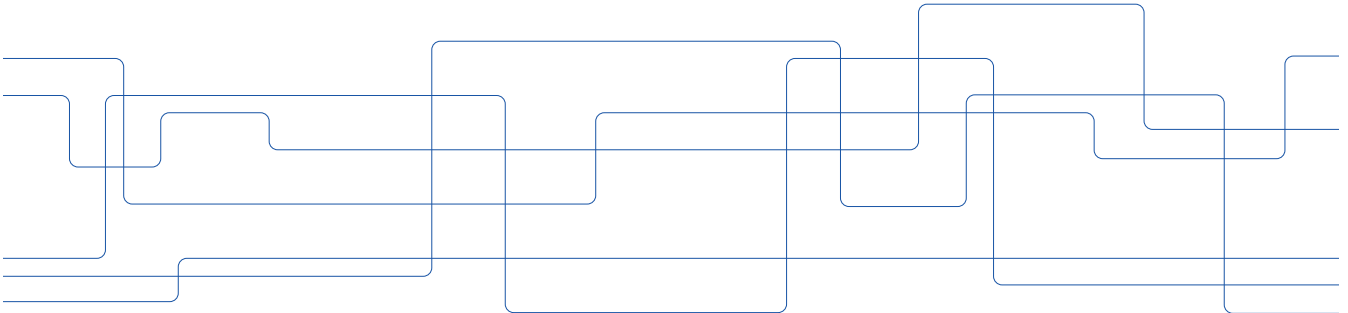




Welcome to the 2-year Master Program on Information and Network Engineering

Mats Bengtsson, Prof., Program director, mats.bengtsson@ee.kth.se

NN, program coordinator, ee-master@kth.se





Welcome to KTH!

- **KTH**, the Royal Institute of Technology
Excellence in Education, Research and Entrepreneurship





Welcome to Stockholm!



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Welcome to Sweden!





KTH—Five Schools, Countless Opportunities

- School of Architecture and the Built Environment
- School of Chemistry, Biotechnology and Health
- **School of Electrical Engineering and Computer Science**
- School of Engineering Science
- School of Industrial Engineering and Management



School of EECS - Research areas

- Decision and Control Systems
 - **Information science and engineering**
 - Micro and nanosystems
 - Robotics, perception, and learning
 - Speech, music and hearing
 - Communication systems
 - Computational science and technology
 - **Network and systems engineering**
 - Software and computer system
 - Theoretical computer science
 - Electric power and energy systems
 - Media technology and interaction design
 - Electromagnetic engineering
 - Electronics
 - Fusion plasma physics
 - Space and plasma physics
-



Faculty at Information Science and Engineering Division

Professors

- Mikael Skoglund (head)
- Mats Bengtsson
- James Gross
- Joakim Jaldén
- Magnus Jansson
- Tobias Oechtering

Associate Professors

- Saikat Chatterjee
- Markus Flierl
- Ragnar Thobaben
- Ming Xiao





Research at Information Science and Engineering (ISE) Division



Wireless Networks



Information & coding



Processing & learning



Multimedia comms.



Privacy and security



Intelligent transport.



Positioning & navigation

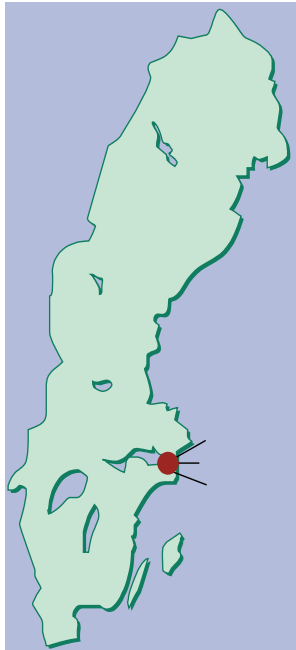


Research at Network and Systems Engineering Department

- Communication Networks
 - Cyber Physical Systems Security
 - Distributed Systems
 - Game Theory
 - Internet of Things
 - Management of Technology
 - Mobile Communications
 - Mobile Edge Computing
 - Network Analytics
 - Networking
 - Network Systems Management
 - Opportunistic Networks
 - Optimization Theory
 - Privacy
 - Product Development
 - Project Management
 - Quality Management
 - Security
 - Stochastic Modeling
 - Wireless Communications
-



KTH Campuses in Stockholm



KTH Campus Valhallavägen



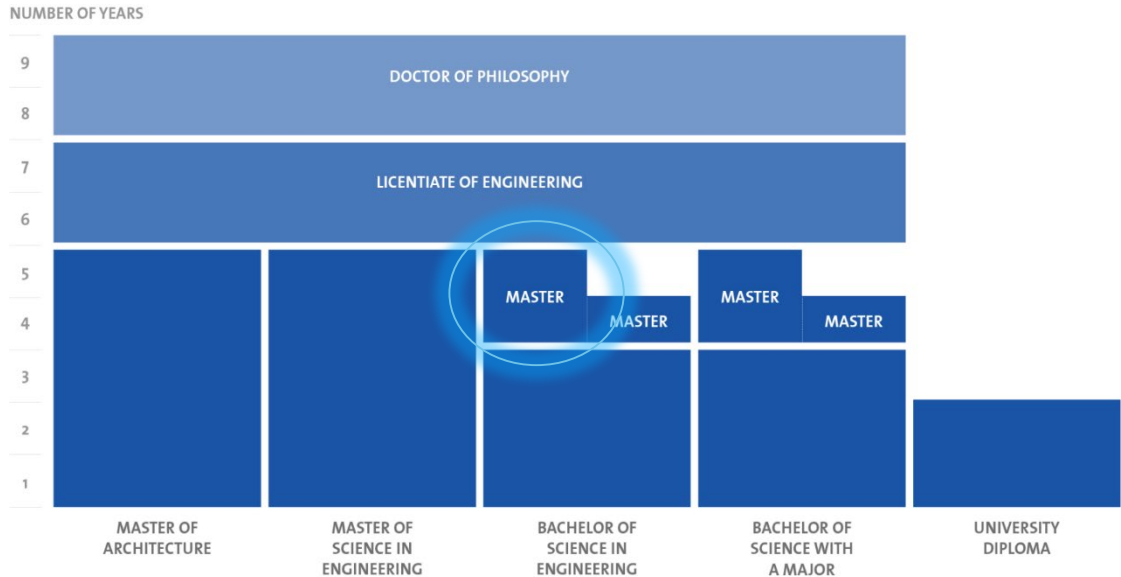
KTH Syd, Campus Telge



KTH IT University, Kista



Structure of Education at KTH





Degrees at KTH

- *Master of Science with a major in ...*(teknologie magister i ...)
 - The Information&Network Engineering Master program degree:
 - **Master of Science with a major in Electrical Engineering. Specialization in Information and Network Engineering.**
 - ...
 - The Swedish Engineering degree (civilingenjör)
 - 5 years (300 cu's) of full-time studies
 - Degree translates into ``M.Sc. in Engineering''
 - BSc+MSc! Explicit Bachelor's degree is optional
-



The Information & Network Engineering Master Program (TINNM)

- 2 years (3 semesters coursework, 1 sem. thesis)
 - Four study tracks:
 - Communications Engineering
 - Information Engineering
 - Multimedia Processing and Analysis
 - Networked Systems
-



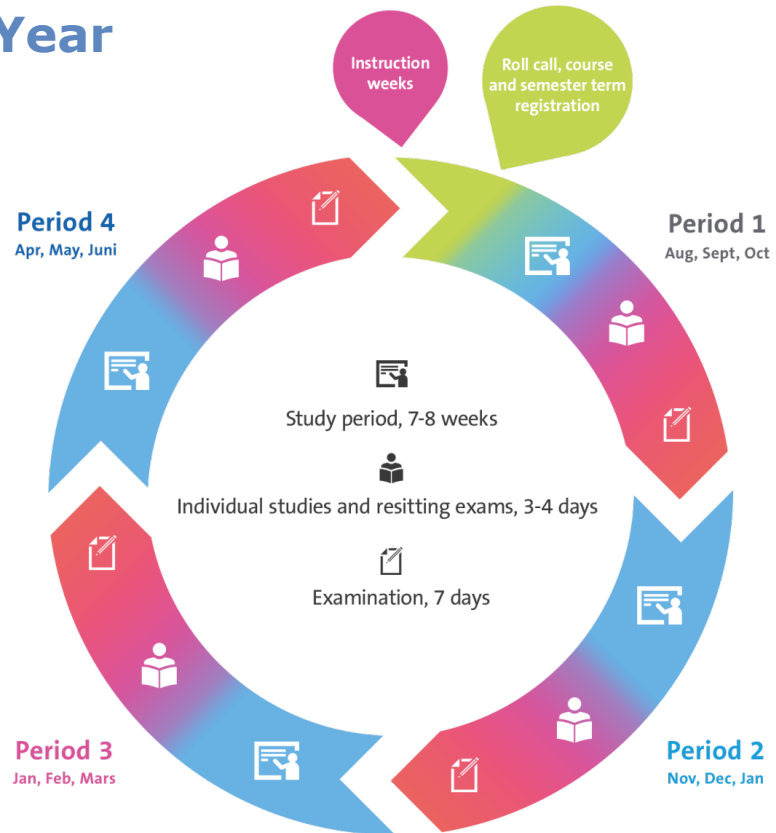
Curriculum, Degree Requirements

- 90 cr.u. courses + 30 cr.u. degree project
 - 5 compulsory courses (4 for students from KTH "CELTE" BSc program)
 - Fulfil requirements of **at least one** of the 4 study tracks
 - Strongly recommended: 6-15 cr.u. non-technical courses
 - Detailed information on Internet:
www.kth.se/social/program/tinnm/
easiest accessible through your KTH menu.
-



The Academic Year

- **Academic year divided into 4 quarters/periods ("perioder")**
- **Credit units ("poäng"):**
1 week = 1.5 cr.
1 quarter = 15 cr.
1 semester = 30 cr.





Organization of Teaching

- **Voluntary:** Lectures, Tutorials, Help Sessions, (Homework), ...
 - **Mandatory:** Exams, Labs, Projects, (Homework),...
 - **Exams:** Usually written. The ECTS grading system is used.
Passing grades: **A** (highest grade), **B**, **C**, **D**, **E**.
Failing grades: **FX** (possibility to get passing grade if you do some extra assignment), **F**.
 - Students who fail an exam must take re-examination. Typically, exams for a course are given twice per year.
 - **Honor code:** Academic dishonesty taken very seriously at KTH, especially at EECS. See also <https://www.kth.se/en/eecs/utbildning/hederskodex/inledning-1.17237>
-



Course Selection

- First quarter course selection already done, EQ1220+EP2120+EQ2222
 - For period 2 (and possibly elective courses period 1), use form at the program web. Deadline Aug. 25!
 - Following semesters: course selection on-line.
 - Study plan template with course lists+links to detailed course information, available at program web page.
 - Tuition fee only covers 60 credits/academic year.
 - Courses in one study track are obviously elective also in other profiles.
 - Elective courses with course code ID***/IK***=Kista Campus, consider travel time between campuses (unless they are given on-line).
-



More on the Course Selection

- Elective courses marked in red are very demanding, offered jointly for PhD students and you. Think twice before selecting!
 - Some of these are only offered every second year: “odd” = 2021/22, “even” = 2020/21.
 - Swedish courses (optional!!!):
 - On-line “SWELL”
 - Class-room (limited space in this fall semester)
 - Consider [AK1213 Swedish Society, Culture and Industry in Historical Perspective](#) as an alternative
-



Thesis Project

- Perhaps the most rewarding part of the program
 - Within the general topic of your study track
 - 30 credits (20 weeks)
 - Carried out in industry or at university (same requirements!).
 - Within Sweden or anywhere in the world!
 - Student's own responsibility to find a project!
 - Grade: Pass/Fail
-



Thesis Project, Requirements

- Must have taken >60 credits **finished** courses from the program, to start
 - Preferably done during the spring semester, 2nd year
 - Must have taken relevant courses
 - Must be approved by examiner and program director before start.
 - Course requirements:
 - Written report, approved by your supervisor and the examiner
 - Oral presentation at KTH, approved by KTH examiner
 - Attend two other presentations at KTH
 - Act as opponent on another student's presentation
-



Practicalities

- Course material:
 - *Buy yourself!*
 - *Main text book – at book store*
 - *Often extra compendiums, ... sold on campus*
 - Time tables:
 - *8-10 means 8:15-9:00 + 9:15-10:00*
 - Separate access cards at Kista campus!
 - Mailing list: tinnm20@eecs.kth.se Free to use for education related issues (Mats is on the list).
 - Programme web page, especially “Students admitted 2020...”
 - Read your KTH email!
-



COVID-19 — Consequences

- Mix of digital and on-site teaching
- At least 50% of scheduled time on-site for you (less for 2nd & 3rd year students)
- At most 50 people in any room.
- Keep distance! Only use marked seats.
- Never come to campus if you feel ill!
- Examination: Mixed forms! Fewer on-site written exams than usual.
- Much more information on the KTH web!



EQ1220 Signal Theory (brief info)

- Format
 - Pre-recorded lectures on-line
 - Reflection lectures at campus
 - Tutorials at campus
- All activities at campus split into two groups.
- You should only attend activities for "Group A"!
- Your first lecture is Monday Aug. 24, 15-17 in L51
- More information in Canvas:
<https://kth.instructure.com/courses/20527>



Meeting Tomorrow at Campus

- Where: Malvinas väg 10
- When: 10AM
- What: Meet each other. Short walk around campus
Be prepared to present yourself (about 1 minute).
- Hope to see you all!



EQ2222 (EQ2223)

Sustainable Information & Network Engineer course

- Course objective and topics
- Organization and grading





Objectives

- To cover some important topics of life as a student and as an engineer
 - Study Information&Network Engineering – Why and How
 - Ethical aspects
 - Sustainability – the engineers' role
 - Career planning
 - ...
 - Regularly discuss program related issues
 - Meet with other students of the program – across years
-



Course setup

- 4 seminars per year, 2 hours per seminar – 3credits (EQ2222)
 - > *1.5credit version for Erasmus, DD, etc. students (EQ2223)*
 - First and second year students mixed, groups of 8-10 students
 - > *Groups are defined by the teachers and are fixed*
 - Reading-reflection-discussion
-



Course setup

- Read some material to prepare
 - Write one page reflection
 - Read reflections from all the others in your group
 - Discuss at the meeting
 - If you miss a meeting, submit a written reflection on reflections
-
- Detailed instructions with reading material and questions for reflection are posted on the course web
-



Grading

- Based on points collected for reflections and seminar participation
 - Both reflections and participation are compulsory
 - Reflection:
 - 2 points: The reflection is submitted in time, is well-written in terms of structure, language, reference handling and argumentation, and shows good ability to discuss the given topic based on own analysis as well as other literature.
 - 1 point: The reflection is submitted in time and discusses the given topic. The document structure and language is at an acceptable level,
or
The reflection fulfils the criteria for 2 points, but is submitted late.
 - 0 points: The reflection is submitted very late (more than one week after the seminar), fails to cover the given topic, or is written in very poor English.
 - Active participation at seminar: 1 point
 - “Reflection on reflections” for missed seminar
 - Agreed in advance and submitted on time: 1 point
 - Not agreed in advance and/or not submitted on time: 0 point
-



Grading

- Based on points collected for reflections and seminar participation
 - Both reflections and participation are compulsory
 - 1.5 credits reported after 1st year, full course credits after 2nd year.
 - Max $8 \cdot 3 = 24$ points
 - Grades:
 - A:22-24
 - B:19-21
 - C:16-18
 - D:13-15
 - E:11-12
 - Fx: If you miss the E with n points (e.g, if you have 4 points, then $n=7$) write an n page long document to pass the course. Topic: On the contribution of wireless system engineers to the sustainable society
-



First meeting and preparation

- First seminar on week 38 (exact date and time depending on group)
 - Reading material and questions available on week 36 the latest
 - Deadline to submit reflections: one week before the seminar

 - Remember all these, since there will not be any additional information meeting before first seminar!
-