



Utbildningsplan

[En tillgänglighetsanpassad version av utbildningsplanen finns i Kurs- och programkatalogen.](#)

Masterprogram, säker och mobil kommunikation 120 hp

Master's Programme, Security and Mobile Computing

Gäller för antagna till utbildningen fr o m HT16.

Utbildningens mål

The program is organized by a consortium of five European universities in five different countries, where KTH is one of the partners in the consortium. The students spend the first year in one country and the second year in one of the other four countries. After completing the two years, the students are awarded double degrees from the two universities they attended. The name of the program used by the consortium is NordSecMob - Master's Programme in Security and Mobile Computing. The conditions for the education and the requirements for a double degree are determined in a consortium agreement between the rectors of the universities in the consortium. The KTH part of this program is closely related to the Master's programme in Communication Systems at KTH, and most of the courses are common among the programmes. Ethics and sustainable development are integrated parts of the education, and a set of mandatory courses are carrying a well-defined ethics and sustainability track throughout the education. The programme will give a solid basis for graduate (PhD) education within the area.

Kunskap och förståelse

For a Master's degree in Security and Mobile Computing the student shall:

- Show knowledge and understanding in the area of Security and Mobile Computing, comprising a wide knowledge of the area as well as more profound knowledge of some parts of the area, and insight into current research and development work.
- Show in-depth knowledge about methodology in Security and Mobile Computing.
- Identify and describe examples of sustainability aspects related to Security and Mobile Computing.
- Give examples of and explain social, ethical and environmental aspects of sustainable development in the area of Security and Mobile Computing.

Färdigheter och förmågor

For a Master's degree in Security and Mobile Computing the student shall:

- Show ability to critically and systematically integrate knowledge and to analyze, evaluate and handle complex occurrences, issues and situations even with limited information.
- Show ability to critically, independently and creatively identify and formulate issues, to plan and with adequate methods perform qualified tasks within given time limits and thereby contribute to the evolution of knowledge as well as assess the work.
- Show ability, in domestic and international venues, to orally and in writing present and discuss conclusions and the knowledge and the arguments on which these are based, in dialogue with different groups.
- Show such skills which are required for participation in research and development work or in other independent work of a qualified nature.
- Based on various definitions of sustainable development illustrate and point out perspectives where progress within Security and Mobile computing can be relevant for sustainable development in society.

Värderingsförmåga och förhållningssätt

For a Master's degree in Security and Mobile Computing the student shall:

- Show ability to make assessments taking into account relevant scientific, societal and ethical aspects as well as show awareness of ethical aspects of research and development work.
- Show ability to compare and evaluate possibilities and limitations of communication technology in the society and how communication technology is used from a sustainability perspective.

- Show insight into the possibilities and limitations of science, its role in society and the responsibility of humans for its use.
- Show ability to identify her/his need for additional knowledge and take responsibility for the development of his/her own knowledge.

See local degree policy of the Royal Institute of Technology in KTH Regulations.

Utbildningens omfattning och innehåll

The educational program comprises two years, and a Master's degree is awarded after completion of the course requirements of 120 hp.

The education is on the advanced level (second cycle).

All students follow the same line of study.

The language of the entire education is English.

Behörighet och urval

The basic requirement for admission to a Master's program at advanced level is a national university degree at basic level (first cycle) of at least 180hp or an equivalent international degree.

A good knowledge of written and spoken English is required.

The admission criteria to the programme is a high quality Bachelor's degree encompassing a minimum of 180 ECTS credits in Engineering (Computer Science or Information technology) or equivalent studies, i.e., must be a degree of at least three years of full-time studies. The applicants should have solid knowledge of mathematics (discrete mathematics), programming skills, data structures and algorithms, computer architecture and basics of computer networks. In addition, a basic knowledge of following subject areas will be an advantage: databases and database management, principles of theoretical computer science, logic in computer science, software engineering, operating systems, and concurrent programming.

The selection process is based on the following selection criteria: University, previous studies (for instance GPA, grades in specific subjects and English), motivation for the studies (for instance letter of motivation, references, thesis proposal and relevant work experience). The evaluation scale is 1-75.

See local admission policy of KTH Royal Institute of Technology.

Utbildningens genomförande

Utbildningens upplägg

The programme consists of two academic years, each comprising about 9 months and divided into two terms with two study periods per term. Each study period ends in an examination period.

The programme has 45 credits compulsory courses, a 30 credit Master's thesis and 45 credits conditionally elective courses. Compulsory courses cover Internetworking, Network Security, Communication systems and Research Methodology. During their study year at KTH, the students will follow the specialization track Internetworking, which is part of the closely related Master's programme in Communication Systems. The specialization track includes some mandatory courses within the track and a wide range of elective courses, allowing the student to specialize within the programme subject areas. Three blocks of elective courses are: in Internetworking, in Wireless systems, in Communication Systems Security and in Entrepreneurship. It is mandatory to choose one project oriented course in the elective part. The Master's thesis project is typically carried out in the last term.

Kurser

Utbildningen sker i kursform. Kurslistor finns i bilaga 1.

The courses are either compulsory or conditionally elective. After application, students may be allowed to take extra courses in addition to the compulsory or conditionally elective courses.

Betygssystem

För kurser på KTH används en sjugradig målrelaterad betygsskala A-F som slutbetyg för kurser på grundnivå och avancerad nivå. A-E är godkända betyg med A som högsta betyg. Betygen godkänd (P) och underkänd (F) används som slutbetyg då särskilda skäl föreligger.

Villkor för deltagande i utbildningen

Each student who has been admitted to the Master's program in Security and Mobile Computing is admitted to the compulsory courses belonging to a specific program term after registration on this term.

Conditionally elective courses are chosen by the student prior to the second term of the first year and prior to each of the two terms of the second year. The choice is limited to the courses stated as conditionally elective in the course list.

Students who are term-registered are considered as expected students in all compulsory courses and in chosen elective courses. Students announce their participation in an individual course to the teacher responsible for the course in the beginning of the course. Students announce possible interruptions in their studies to the teacher responsible for the course.

The condition for promotion to the second year is completion of 45 hp in the first year.

The condition for starting the Master's thesis project is 60 hp.

Tillgodoräknanden

See policy of the Royal Institute of Technology.

Utlandsstudier

All students study in two different countries during the programme, following the directions for mobility in Erasmus Mundus from the European commission.

Examensarbete

To be awarded a Master's degree in Security and Mobile Computing the student must, within the course requirements, have fulfilled an independent work (the master's thesis project) of at least 30hp in Security and Mobile Computing.

The subject for the thesis project may be chosen by the student to be performed at KTH, at other universities, or in industry. A student who has been promoted to the second year may apply to start a thesis project.

Specific directives and criteria for grading is available in the official course syllabus.

See policy of KTH Royal Institute of Technology.

Examen

The Master's degree is obtained after completion of the courses and the thesis with a total of at least 120hp. The degree is "Teknologie masterexamen", translated into English as "Degree of Master of Science (two years)". The degree is awarded after application from the student.

See policy of KTH Royal Institute of Technology.

Bilaga 1 - Kurslista

Bilaga 2 - Inriktningsbeskrivningar



Bilaga 1: Kurslista

Masterprogram, säker och mobil kommunikation
(TSMKM)

Gemensamma kurser

Årskurs 1

Obligatoriska kurser (30,0 Högskolepoäng)

Kurskod	Namn	Omfattning	Utbildningsnivå
ID2212	Nätverksprogrammering med Java	7,5 hp	Avancerad nivå
II2202	Forskningsmetodik och vetenskapligt skrivande	7,5 hp	Avancerad nivå
IK2206	Säkerhet och datasekretess på internet	7,5 hp	Avancerad nivå
IK2215	Avancerad internetteknik	7,5 hp	Avancerad nivå

Villkorligt valfria kurser

Kurskod	Namn	Omfattning	Utbildningsnivå
ID2216	Utveckling av mobila tillämpningar	7,5 hp	Avancerad nivå
ID2218	Design of Fault-tolerant Systems	7,5 hp	Avancerad nivå
IK1611	Dimensionering av kommunikationssystem	7,5 hp	Grundnivå
IK2200	Kommunikationssystem	15,0 hp	Avancerad nivå
IK2213	Nätverkstjänster och internetbaserade tillämpningar	7,5 hp	Avancerad nivå
IK2217	Avancerad Internetteknik II	7,5 hp	Avancerad nivå
IK2220	Mjukvarubaserad nätverksteknik (SDN) och virtualisering av nätverksfunktioner (NFV)	7,5 hp	Avancerad nivå
IK2555	Trådlösa och mobila nätverksarkitekturer	7,5 hp	Avancerad nivå
IO2654	Optiska nätverk	7,5 hp	Avancerad nivå
ME2062	Technology-based Entrepreneurship	7,5 hp	Avancerad nivå

Årskurs 2

Obligatoriska kurser (15,0 Högskolepoäng)

Kurskod	Namn	Omfattning	Utbildningsnivå
IK2200	Kommunikationssystem	15,0 hp	Avancerad nivå

Villkorligt valfria kurser

Kurskod	Namn	Omfattning	Utbildningsnivå
EP2300	Nätverkshantering	7,5 hp	Avancerad nivå
ID1212	Nätverksprogrammering	7,5 hp	Grundnivå
IK2510	Radionät	7,5 hp	Avancerad nivå
IK2511	Projekt i trådlösa nät	7,5 hp	Avancerad nivå
IK2514	Dimensionering och ekonomi för trådlösa bredbandsnät	7,5 hp	Avancerad nivå
IK2554	Röst över IP (VoIP) i praktiken	7,5 hp	Avancerad nivå
IS2500	RFID System	7,5 hp	Avancerad nivå



Bilaga 2: Inriktningar

Masterprogram, säker och mobil kommunikation (TSMKM)

Programmet har inga inriktningar.