

KTH Royal Institute of Technology



Master's and PhD studies

Presented by:

Urban Westergren, professor
Department of Applied Physics
School of Engineering Sciences

Regional Director
International Relations Office



KTH web site



Facts about KTH



Study at KTH



KTH Royal Institute of Technology

One of the top technical universities in Europe





Short facts about KTH

- Established 1827 in Stockholm, Sweden
 - People from more than one hundred nations
 - Some numbers:
 - 13,500 full time students
 - 1,600 PhD students (with at least 50% activity)
 - 2,200 new students in master programs each year
 - 300 new PhD students each year
 - 600 members of faculty
 - QS ranking in 2024 is 74, Times Higher Education 97
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Engineering and Science rankings

Comparison of QS rankings by subject 2024		
	KTH	SEU
General rankings for 2024	74	428
Mechanical Engineering	20	351-400
Electrical & Electronic Engineering	23	201-250
Materials Science	25	251-300
Architecture & Built Environment	30	51-100
Mathematics	45	301-350
Physics and Astronomy	48	401-450
Civil and Structural Engineering	49	51-100
Chemical Engineering	57	301-350
Computer Science and Information Systems	60	301-350
Chemistry	87	351-400
KTH ranking in Times Higher Education 2024: 97		

The Kingdom of Sweden

- About 10 million inhabitants, ~2 million of whom live in the capital of Stockholm
- Has a pleasant climate thanks to the warm Gulf stream in the north Atlantic sea
- Combines a beautiful natural setting with modern technology and vibrant cities
- Home of the Nobel Prize, and many famous export companies, such as the examples on the next slide:



Sweden makes a lasting impression

Swedish entrepreneurship and ingenuity has helped shape the worlds of communication, furniture, fashion, music and much more. And no matter what the industry, there always seems to be that engineering approach.





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Stockholm – a city of islands



Stockholm: a dynamic environment, modern, historic, clean air and water





Stockholm: an international city

- A multi-cultural European capital, communities from China, India and other countries
 - A city with very clean air and water
 - Quick access to city, campus and nature with excellent transportation: public, by bicycle or even by boat
 - **Swedes speak good English**, very limited need to learn Swedish while studying in Stockholm
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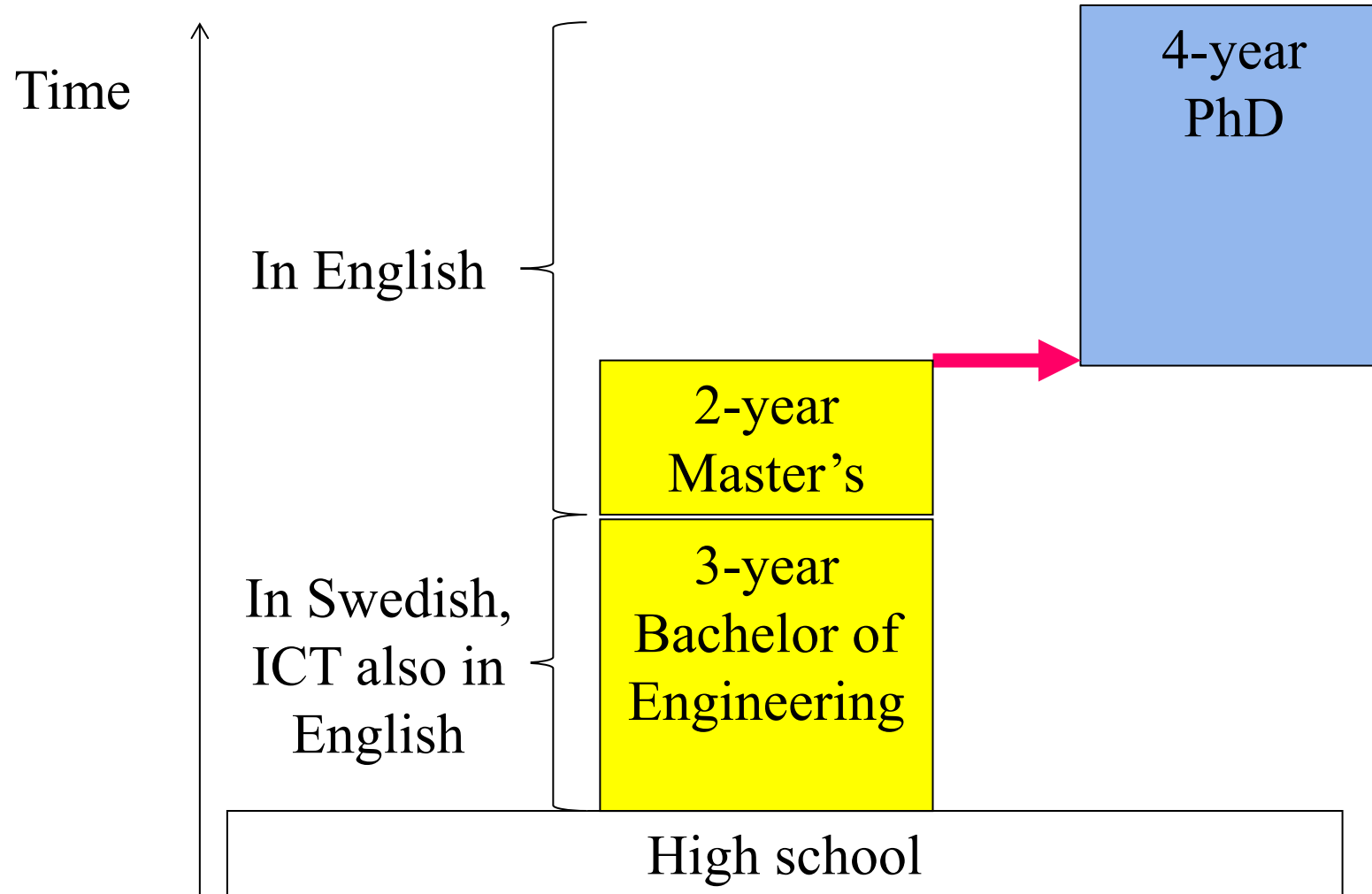


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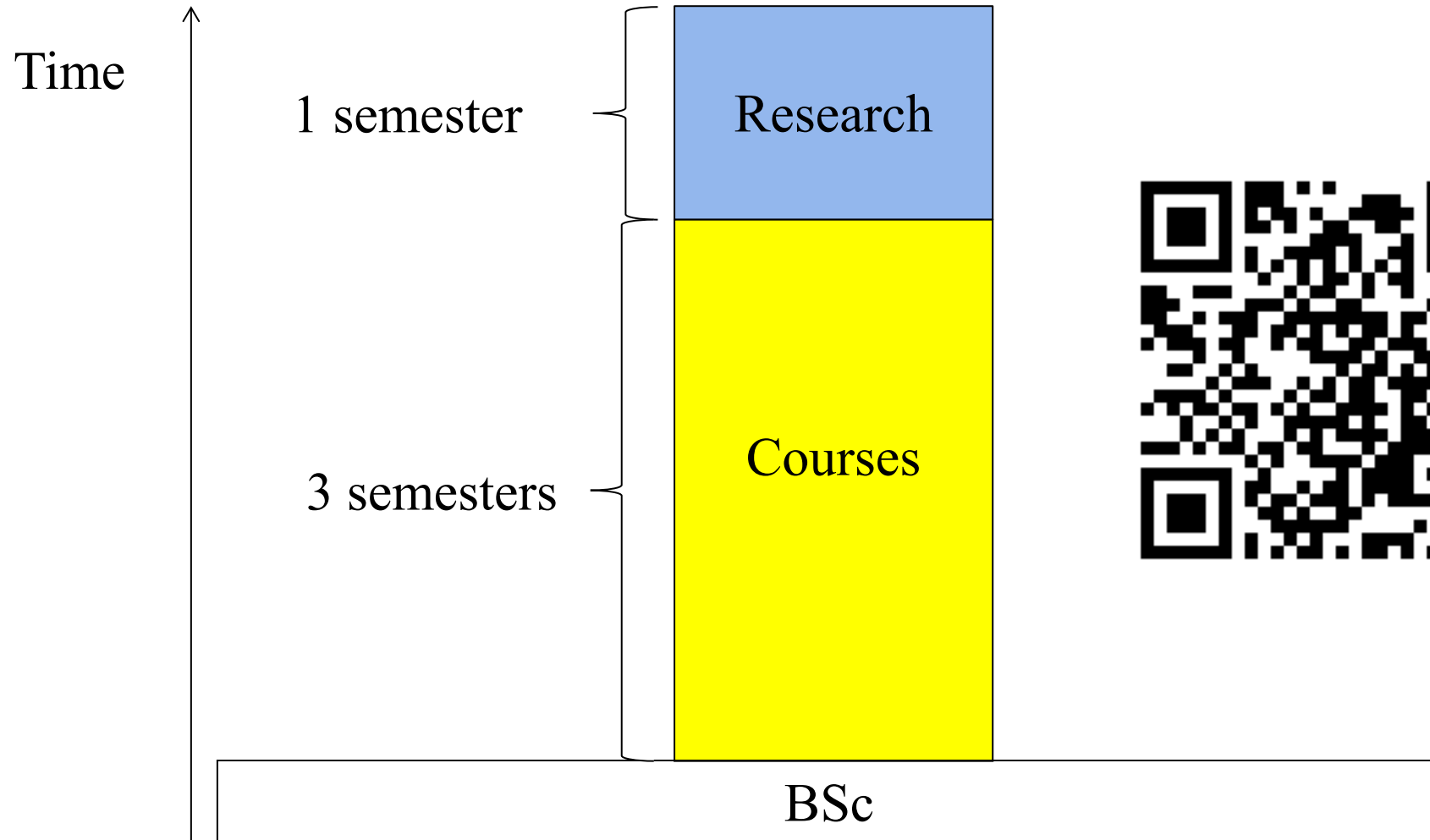
KTH main campus



Structure of education at KTH



Structure of MSc education at KTH





MSc programmes for entry in 2025

More than 60 programmes in several subject areas:

- Architecture and the Built Environment
- Computer Science
- Electrical Engineering
- Engineering Physics and Mathematics
- Energy and Sustainable Development
- Industrial Management and Innovation
- Information and Communication Technology
- Life Science Technology, Chemistry and Chemical Engineering
- Materials Science and Engineering
- Mechanical Engineering



Fees and Scholarships

There are application and tuition fees for non-EU/EEA/Swiss citizens for 1st and 2nd cycle studies (bachelor and master)

The tuition fee is SEK180k (about RMB120k*) for one year of full-time master's study, architecture 70% higher and bachelor 20% lower

Scholarships are available, for example:

- KTH Scholarship (covering the tuition fee), very competitive: 10% of applicants got offers in 2024
- Joint programs: Erasmus Mundus and EIT (European Institute of Innovation and Technology)

* Assuming exchange rate RMB 1.0 = SEK 1.5

Living in Sweden

When applying for a residence permit, you must prove to the Swedish Migration Board that you will have a guaranteed sum of money at your disposal throughout the entire period of your studies. The amount is SEK 10314*, about RMB 6880**, per month for ten months of the year.

Breakdown of budget per month, approximately:

- Food: RMB 1800
- Accommodation: RMB 3300 (for about 19 m²)
- Local travel: RMB 550
- Phone/internet: RMB 380
- Other: RMB 850

* This sum was valid on 1 January 2024, subject to changes

** Assuming exchange rate RMB 1.0 = SEK 1.5



Joint MSc programs: two degrees from European universities

European Institute of Innovation and Technology (EIT)

- Combines education, research and business
- Master programs in ICT, energy and electrical systems
- Studies in two European countries
- Scholarships available

Erasmus+

- EU program at master and PhD levels
- Studies in (at least) two European countries
- Scholarships available

Nordic Five Tech

- Studies in two Nordic countries
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Application requirements and process

- Completed Bachelor's degree is required except for 3+2 applicants, see following slides for terms
 - English proficiency has to be shown (TOEFL 90 with writing 20, IELTS 6.5 with no subscore below 5.5 etc)
 - There are programme-specific requirements (see www.kth.se/en/studies/master)
 - Apply at www.universityadmissions.se
 - Online application period: October 15 to January 15
 - Results of admission distributed March 27
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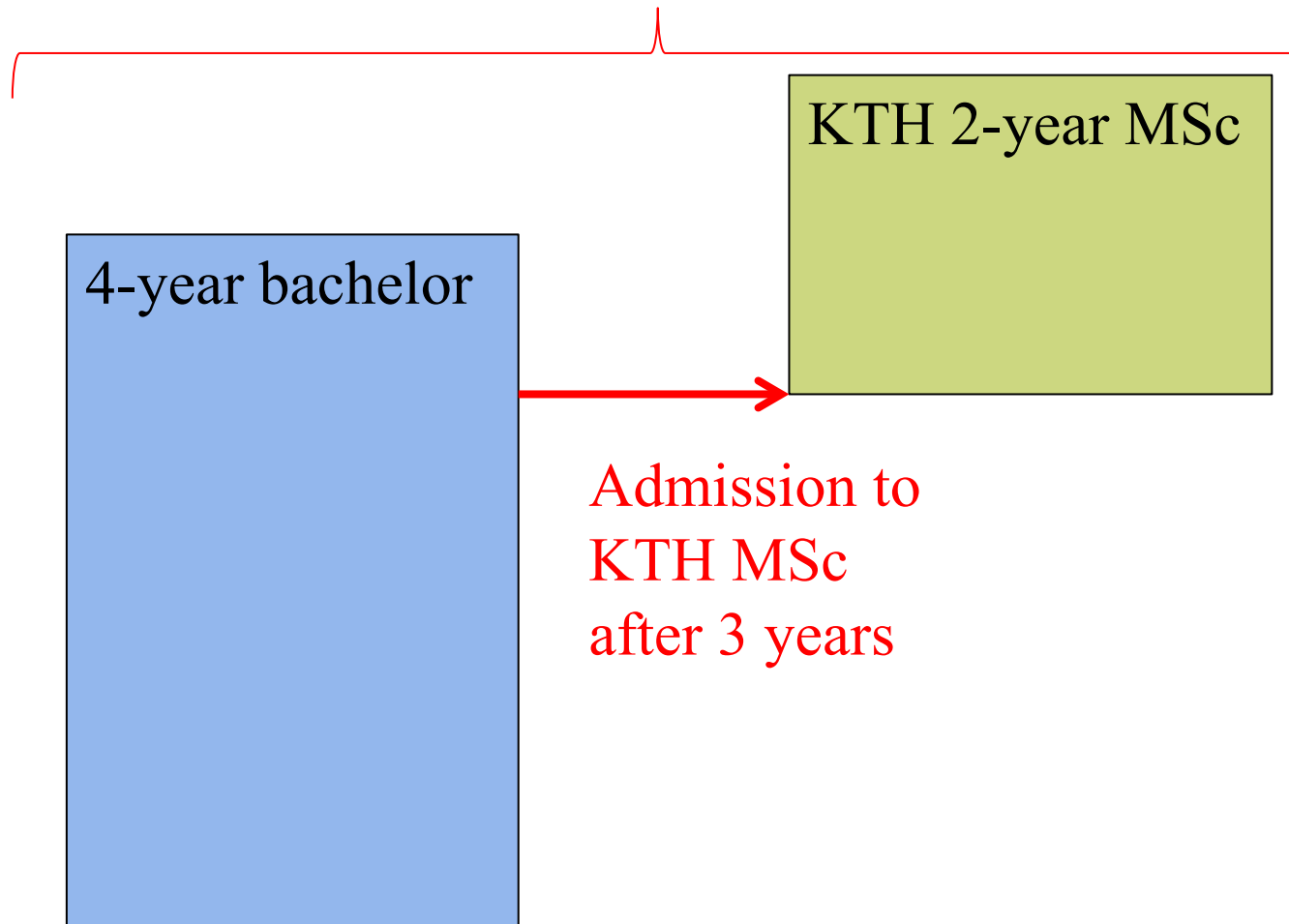
Application for KTH scholarship

- Applications for KTH scholarships are open from beginning of December 2024, to mid-January 2025
- Applications are entered via the KTH web page:
 - Go to master studies: www.kth.se/en/studies/master/
 - Select "Scholarships" in the left menu and then "KTH scholarship"
- Scholarship opportunities: KTH Scholarship:



3+2 program

KTH MSc in 5 years from start of bachelor studies





3+2 program

KTH and SEU have a very successful 3+2 agreement since 2017

Students can apply during the 3rd year of 4-year bachelor studies. These applicants **must contact their home university administration**

Applications **are recommended to follow the mapping** agreed between bachelor majors and master programs. **Joint programs and programs at other Swedish universities are **NOT** included in 3+2.**

Applications are made at universityadmissions.se ,
deadline January 15, 2025

Compliance with entry requirements

Include a table of this type in your application, including what courses you will take during the 6th semester, example for KTH master program in Engineering Physics:

KTH master program prerequisites, see "Entry requirements"	Corresponding bachelor level courses at your home university
Physics (including classical mechanics, thermodynamics, electromagnetism, waves, geometrical optics and quantum mechanics) equivalent to at least 45 ECTS	List courses and briefly describe contents
Mathematics (including differential and integral calculus, linear algebra, differential equations and transforms, and statistics) equivalent to at least 35 ECTS	List courses and briefly describe contents

60 ECTS credits is one full academic year of studies. At bachelor level, the credits from a Chinese university can usually be multiplied by 1,5 to get the corresponding number of ECTS credits, i.e. 1 credit at a Chinese university corresponds to approximately 1,5 ECTS credits

ECTS= European Credit Transfer System

Compliance with entry requirements

Example of a table to be included when applying for KTH Computer Science:

KTH master program prerequisites, see "Entry requirements"	Corresponding bachelor level courses at your home university
Mathematics equivalent to at least 28,5 ECTS, there must be: <ol style="list-style-type: none"> 1. a course in one-variable calculus, 2. a course in linear algebra and 3. a course in probability theory and statistics 4. a course in discrete structures 	List courses and briefly describe contents: <ol style="list-style-type: none"> 1. ... 2. ... 3. ... 4. ...
Computer Science/Information Technology equivalent to at least 22,5 ECTS, there must be <ol style="list-style-type: none"> 1. a course in object oriented programming, 2. a course in algorithms and data structures 3. a course in computational complexity 	List courses and briefly describe contents: <ol style="list-style-type: none"> 1. ... 2. ... 3. ...
A course in calculus in several variable is required for some of the tracks	Course and brief description

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SEU – KTH 3+2 mapping

Recommended transitions

SEU-Automation	KTH Information and Network Engineering
SEU-Biomedical Engineering	KTH Medical Engineering
SEU-Civil Engineering	KTH Civil and Architectural Engineering KTH Sustainable Technology KTH Transport and Geoinformation Technology
SEU-Mechanical Engineering	KTH Engineering Mechanics
SEU-Electrical Engineering	KTH Electrical Power Engineering KTH Communication Systems KTH Electromagnetics, Fusion and Space Engineering KTH Embedded Systems
SEU-Electronic Science and Engineering	KTH Embedded Systems
SEU-Materials Science and Engineering	KTH Engineering Materials Science
SEU-Information Engineering	KTH Communication Systems KTH Information and Network Engineering KTH Embedded Systems KTH Electromagnetics, Fusion and Space Engineering
SEU-Power and Energy Engineering	KTH Sustainable Technology KTH Sustainable Energy Engineering

SEU – KTH 3+2 mapping

Recommended transitions

<p>SEU-Measuring Control Technology&Instrumentation New from 2021</p>	<p>KTH Embedded Systems, if elective courses have been chosen so that the following conditions are fulfilled:</p> <ul style="list-style-type: none">•At least 30 ECTS credits in mathematics, including calculus in one variable, calculus in several variables, linear algebra, mathematical statistics, and Laplace and Fourier Transforms.•Digital Design basics (equivalent to IE1204 or IE1205), Computer hardware organization basics (IS200 or IS1500), Electric Circuits Theory (equivalent to EI1202 or IE1206), and a basic course in programming (preferably C/C++).
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Comments on the 3+2 applications

General comments

Most 3+2 applicants will see the status “unqualified” in universityadmissions.se during the admissions process: **Ignore this!** It usually only means that your transcripts indicate that you will not have a bachelor degree before entering KTH. If your name is on the list KTH has received, KTH will mark your 3+2 application so that it is processed anyway.

Instead **check carefully** that you have uploaded all documents that are compulsory for each master program for which you are applying **before February 3.**

Do not wait until the last day to start uploading documents! Something may go wrong and then your application is considered **LATE** and is only evaluated if there is time left at the end of the evaluations. That is unusual since each master program may receive more than 1000 applications.



Acceptance rates

All numbers are available on the KTH website

Average acceptance rate for all master programs in 2024: 35%

Most popular master programs 2024 ($\leq 10\%$):

- ICT Innovation: $\leq 10\%$ for 3 of 6 tracks
- Computer Science: 10%
- Machine Learning: 9%

Easier programs to be admitted to ($\geq 50\%$):

- Sports Technology: 79%
- Chemical Engineering for Energy and Environment: 75%
- Medical Biotechnology: 74%
- Industrial and Environmental Biotechnology: 63%
- Technology, Work and Health: 61%
- Electromagnetics, Fusion and Space Engineering: 57%
- Macromolecular Materials: 56%
- Molecular Science and Engineering: 54%
- Engineering Physics: 52%
- Sustainable Energy Engineering: 51%
- Nanotechnology: 50%

Languages: English or Swedish?

- **Good knowledge of English is fundamental** for successful education at KTH
 - Sweden has a local language but there is **very limited need to learn Swedish** when studying since people in Sweden speak good English
 - All KTH students who do not have Swedish as their first language are invited to an introductory course in Swedish language and culture. The course is free of charge for all students
 - **Good advice: focus on English in the beginning!**
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Career prospects after a KTH degree

- Statistics for master's programmes:
 - 50% had a job even before graduation
 - >90% had a job within 6 months of graduation
 - >30% became PhD students

PhD studies



- Three years of full-time research, one year of courses
- Engages around 2,000 people
- A large proportion international PhD students
- A candidate has to apply for a position
- All PhD student positions are announced on the KTH web site:
<https://www.kth.se/en/studies/phd>
- Employment with a salary if admitted, but competition for positions

Things you can do after finishing education at KTH...



- Employed at IT company in Sweden
 - KTH master program in Communication Systems, KTH-HUST 3+2 Program, KTH Scholarship holder, 2018-2020
 - Bachelor: HUST, Telecommunications Engineering, ranked #1 of 200 students
-

Things you can do after finishing education at KTH...



- PhD in Electronic and Computer Engineering, Hong Kong University of Science and Technology
- Master of Science in Systems, Control and Robotics, KTH, 2019 (KTH-UM-SJTU-JI 3+2)
- Exchange Student, ETH Zurich, 2019
- Bachelor of Science in Electrical and Computer Engineering, University of Michigan-Shanghai Jiao Tong University Joint Institute, 2018

Things you can do after finishing education at KTH...



- PhD in Dam foundation grouting, KTH
- Master in Civil & Architectural Engineering KTH, 2017-2019
- Bachelor in Civil Engineering Southeast University, 2013-2017

Things you can do after finishing education at KTH... **go into space!**



Professor Christer Fuglesang Professor in Space Physics, KTH

- Mission crew STS-116 & STS-128 Shuttle Discovery, NASA-ESA 2006 & 2009
- Astronaut at European Space Agency 1992-present
- PhD in Experimental Particle Physics Stockholm University, 1986
- Master in Engineering Physics KTH, 1981

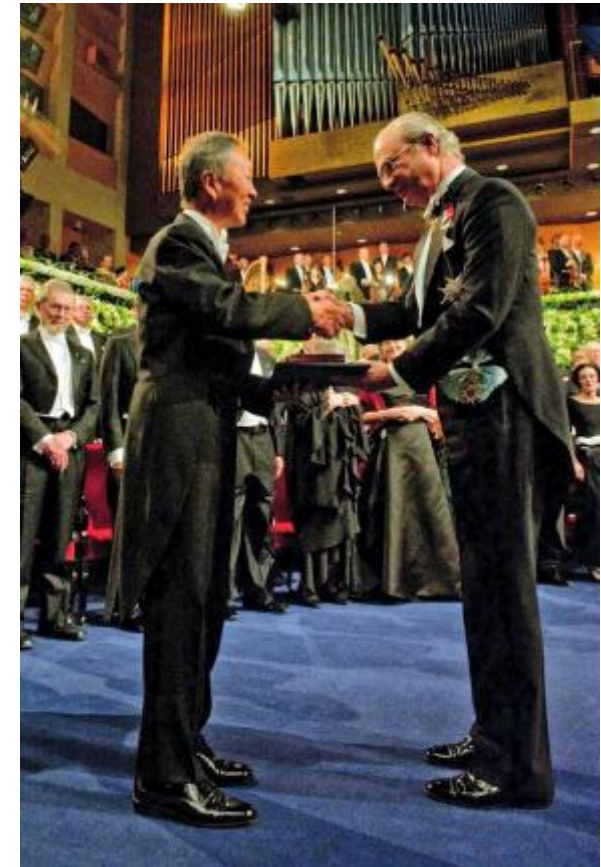
Things you can do after research at KTH... **collect the Nobel prize!**

Professor Hannes Alfvén

- Nobel Prize in Physics, 1970 for Magnetohydrodynamics
- Professor in Electrical Engineering University of California, 1967-1991
- Professor in Electromagnetic Theory and Electrical Measurements KTH, 1940-1991
- PhD in Electromagnetic Waves Uppsala University, 1934



Nobel Prize ceremony in Stockholm on December 10 every year



... may take a few years after graduation...

The Nobel Banquett



International students from KTH attended the Nobel Banquett in, the Stockholm City Hall, dressed in traditional costumes.



Welcome to KTH: launch your career!





Videos about KTH

<https://space.bilibili.com/12838896/video>

https://www.bilibili.com/video/BV1C5411j78Y?spm_id_from=333.999.0.0

