

KTH Royal Institute of Technology

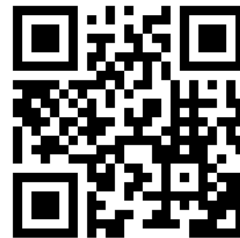


Master's and PhD studies

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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:
 - 13,000 full time students
 - 1,800 PhD students
 - 2,500 new students in master programs
 - 300 new PhD students each year
 - 600 members of faculty
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Short facts about KTH

- QS ranking: Global World ranking 89 (2023) but many engineering areas are much stronger:
 - Electrical and Electronic Engineering: 23
 - Architecture / Built Environment: 22
 - Mechanical Engineering: 26
 - Materials Science: 27
 - Civil & Structural Engineering: 44
 - Computer Science & Info Systems: 54
 - Mathematics: 59
 - Chemical Engineering: 85
 - Physics & Astronomy: 99
 - Chemistry: 104
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Is KTH a good choice for SEU students? Yes!

Comparison of QS rankings by subject 2023		
	KTH	SEU
General ranking	89	461
Electrical and Electronic Engineering	23	201-250
Architecture	22	51-100
Mechanical Engineering	26	301-350
Materials Science	27	201-250
Civil and Structural Engineering	44	101-150
Computer Science and Information Systems	54	351-400
Mathematics	59	251-300
Chemical Engineering	85	301-350
Physics and Astronomy	99	451-500
Chemistry	104	301-350
Red shading: lower rank than KTH		

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 clean and safe city
 - 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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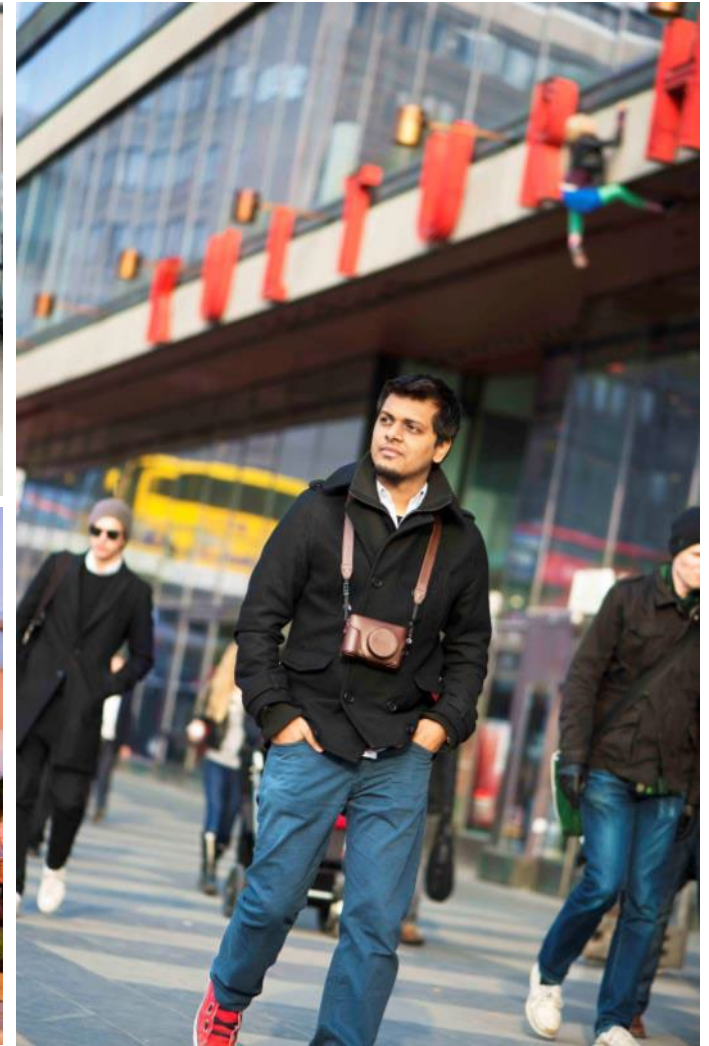








Stockholm student life, part of the city





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KTH main campus



Five campuses close to industry



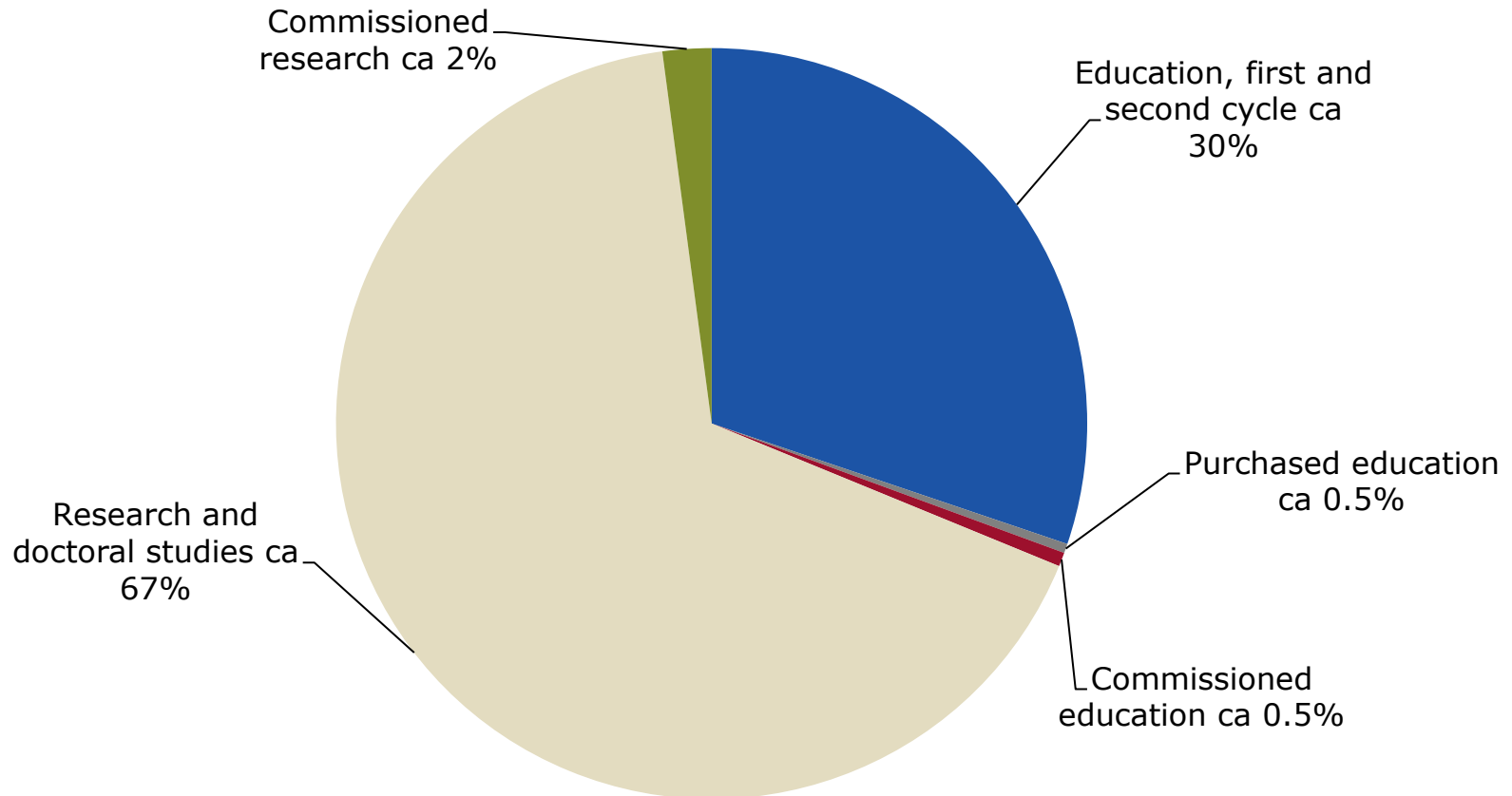


Education in close collaboration with industry

- KTH has five campuses in and around Stockholm city
 - Each campus closely integrated with local industry
 - Example: the campus in Kista is surrounded by the world's largest collection of ICT businesses, more than 1000 companies, such as Ericsson, IBM, Intel, Sun, Compaq, Huawei, ZTE, and many more
 - Master thesis can be written at a company, often leading to the first job after graduation
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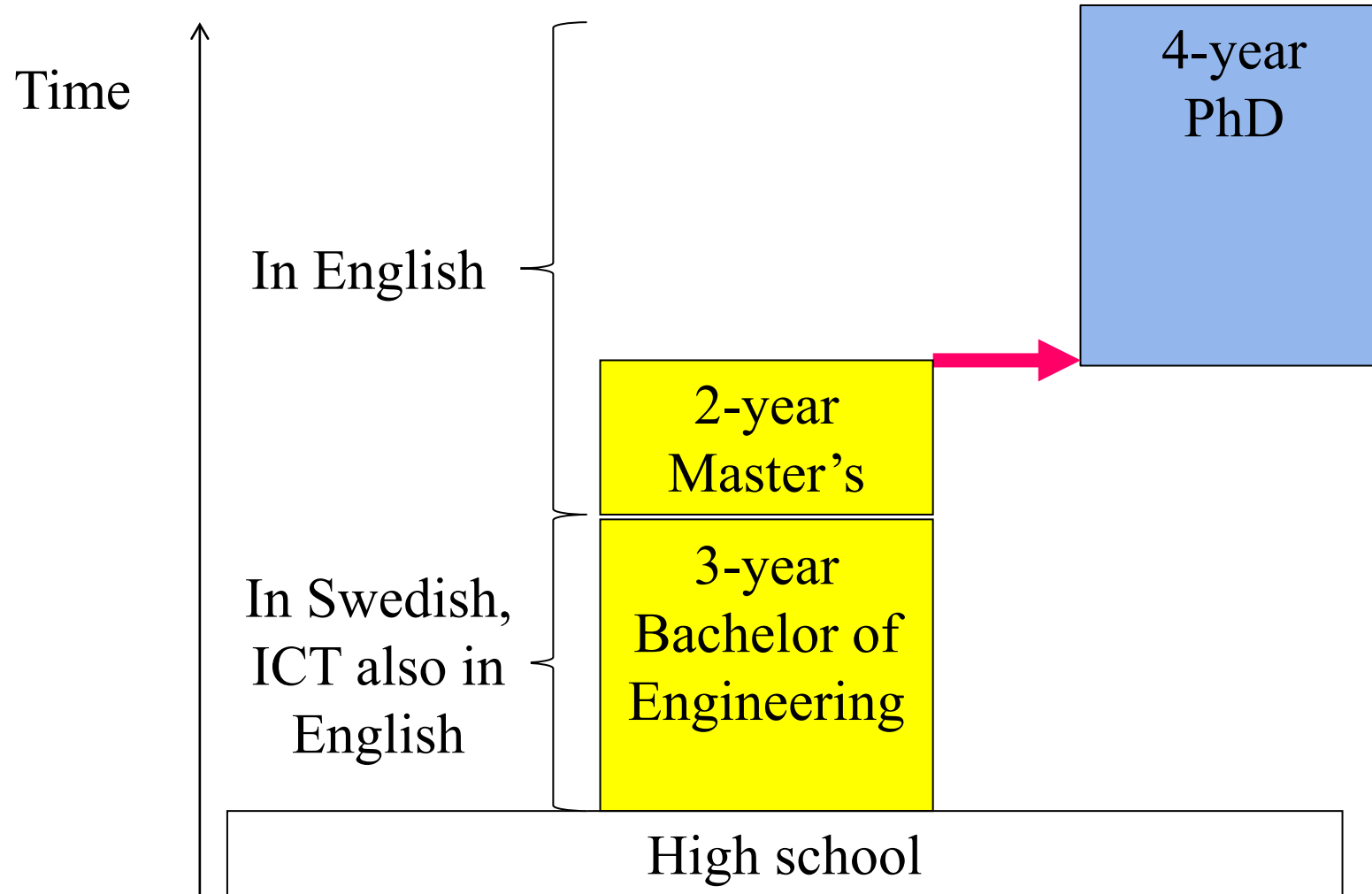
KTH - Research-based operations

- Total Revenue SEK 4,9 billion (ca RMB 3,8 billion)*

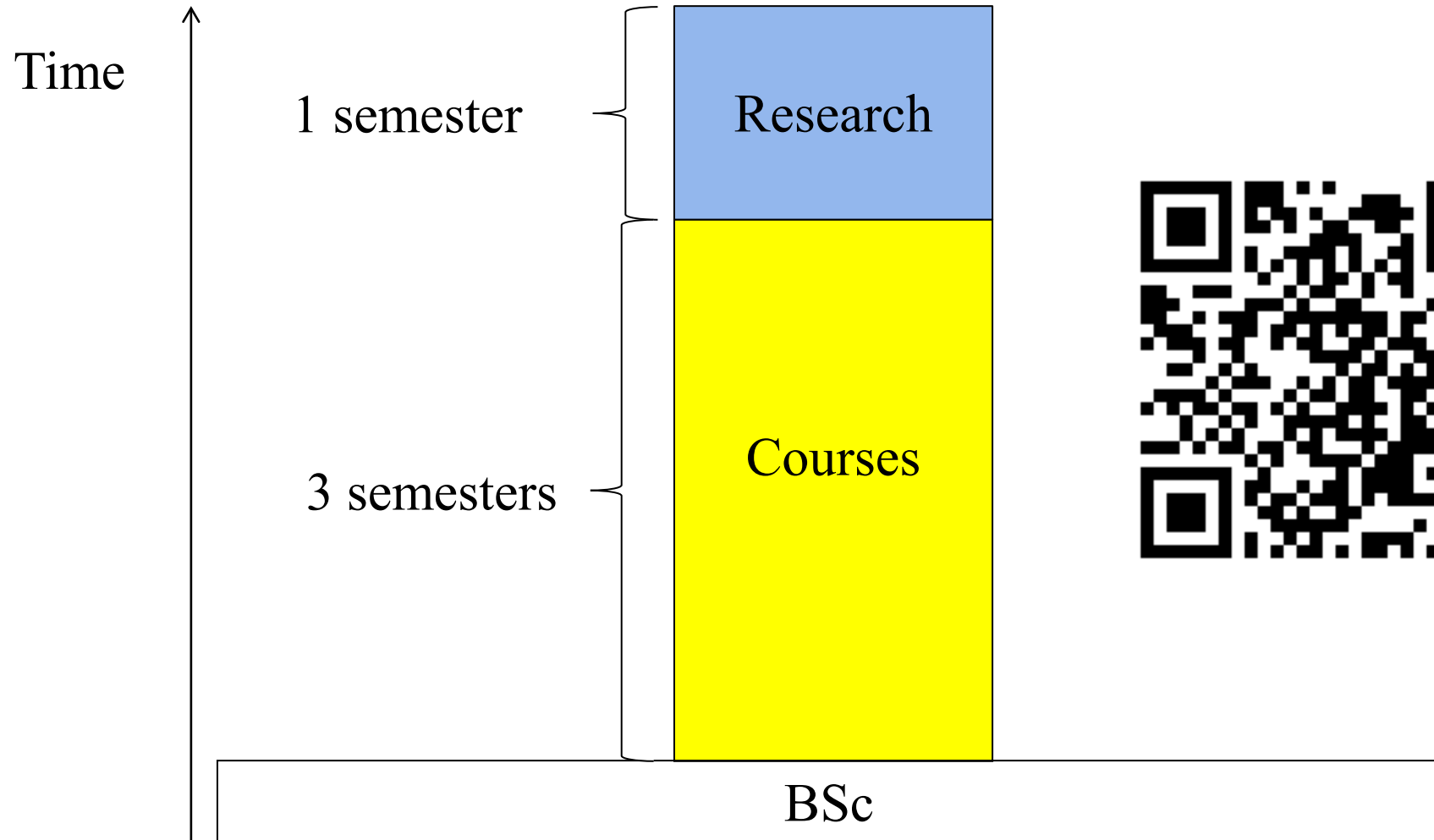


- Figure for 2016, exchange rate 1RMB = 1.3 SEK

Structure of education at KTH



Structure of MSc education at KTH





MSc programmes for entry in 2023

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 SEK155k (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)
- SI: the Swedish Institute
- Joint programs: Erasmus Mundus and EIT (European Institute of Innovation and Technology)

* Assuming exchange rate RMB 1.0 = SEK 1.3

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 8694, about RMB 6700*, per month for ten months of the year.

Breakdown of budget per month, approximately:

- Food: RMB 1750
- Accommodation: RMB 3100
- Local travel: RMB 500
- Phone/internet: RMB 350
- Other: RMB 1000

* Assuming exchange rate RMB 1.0 = SEK 1.3



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 17 to January 16
 - Results of admission distributed on March 30
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Application for KTH scholarship

- Applications for KTH scholarships are open from December 1 to January 15 (preliminary dates)
- 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:





Application for KTH scholarship

An assessment of applicants for the scholarship is made based on the following criteria:

- The applicant's grades (GPA or equivalent)
 - The ranking of the university where the applicant studied at bachelor level
 - An overall assessment of the application by the professor in charge of the master program based on aspects relevant for the program. See "entry requirements; specific documents" for each master program.
 - The applicant's motivation how a future master degree from KTH will contribute to the sustainable development goals
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Application for KTH scholarship

- Sustainable development goals



Application for KTH scholarship

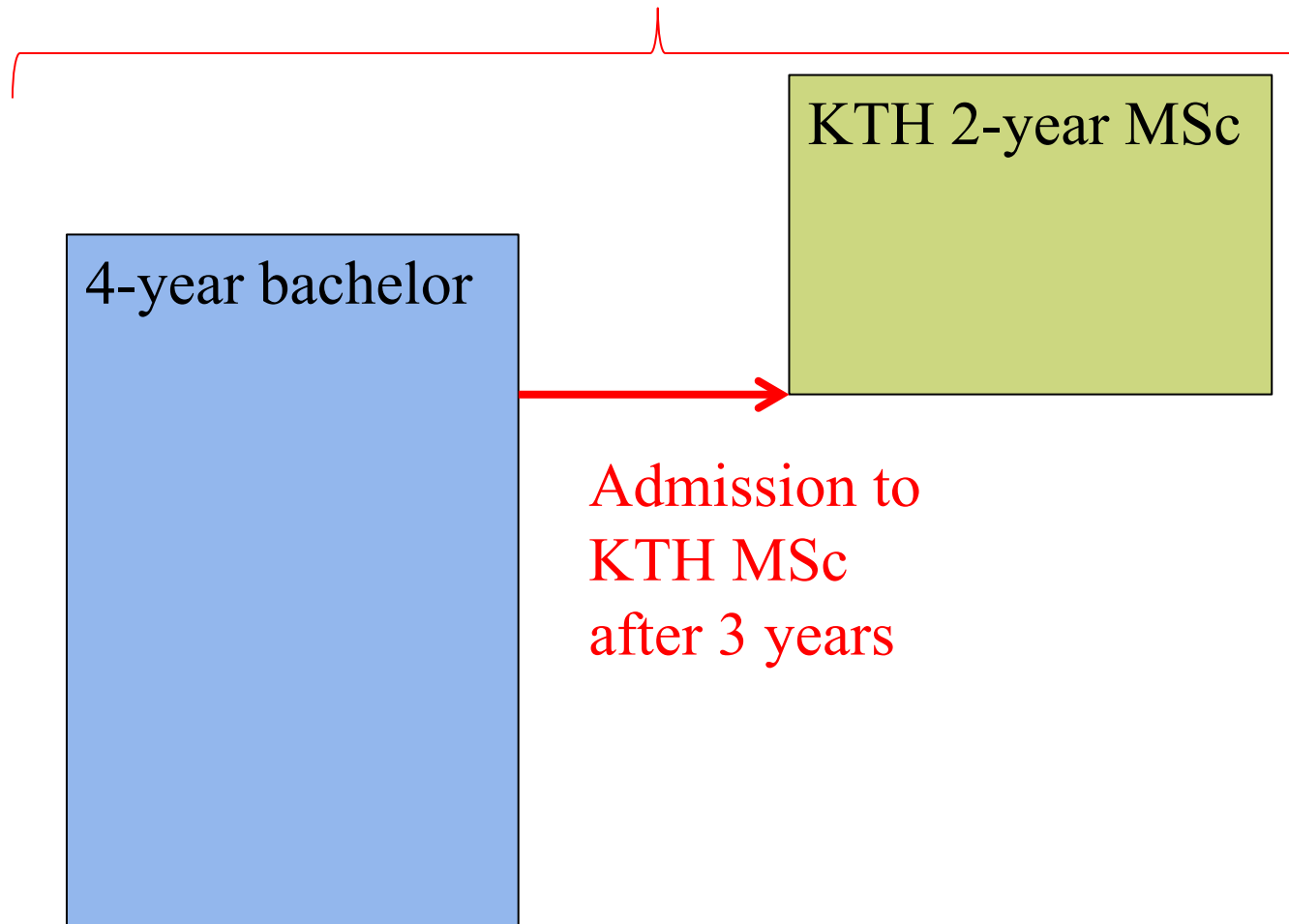
- The motivation on sustainable development should at least show that the applicant has read the information on sustainability found in each master program description on the KTH web site. Example from a program: (scroll down to “Sustainable development”):



- Do NOT copy&paste from anything on the web! The motivation will be checked for plagiarism.
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3+2 program

KTH MSc in 5 years from start of bachelor studies





3+2 program

KTH and SEU has 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 **should follow the mapping** agreed between bachelor majors and master programs. Applications outside of the mapping have a low likelihood of admission.

Applications are made at universityadmissions.se , deadline January 16, 2023

3+2 applications

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

3+2 applications

Example for KTH master program in Computer Science:

KTH master program prerequisites, see "Entry requirements"	Corresponding bachelor level courses at your home university
Mathematics equivalent to at least 22,5 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 discrete structures 	List courses and briefly describe contents: <ol style="list-style-type: none"> 1. ... 2. ... 3. ...
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 and 3. a course in computational complexity 	List courses and briefly describe contents: <ol style="list-style-type: none"> 1. ... 2. ... 3. ...

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SEU – KTH 3+2 mapping

Possible 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-Engineering Mechanics	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

Possible 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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KTH exchange program

Partner university students can apply for exchange studies at KTH. Deadlines: April 15 and October 15, see: **KTH** (www.kth.se/en/) / **Study at KTH** / **Exchange studies**

Students can study for up to 1 year and do not have to pay tuition fees for exchange studies which do not result in a degree

During or after exchange studies, it is possible to apply, in competition, for admission to a KTH master program which results in a degree

Contact your study administration for details

After graduation with master degree

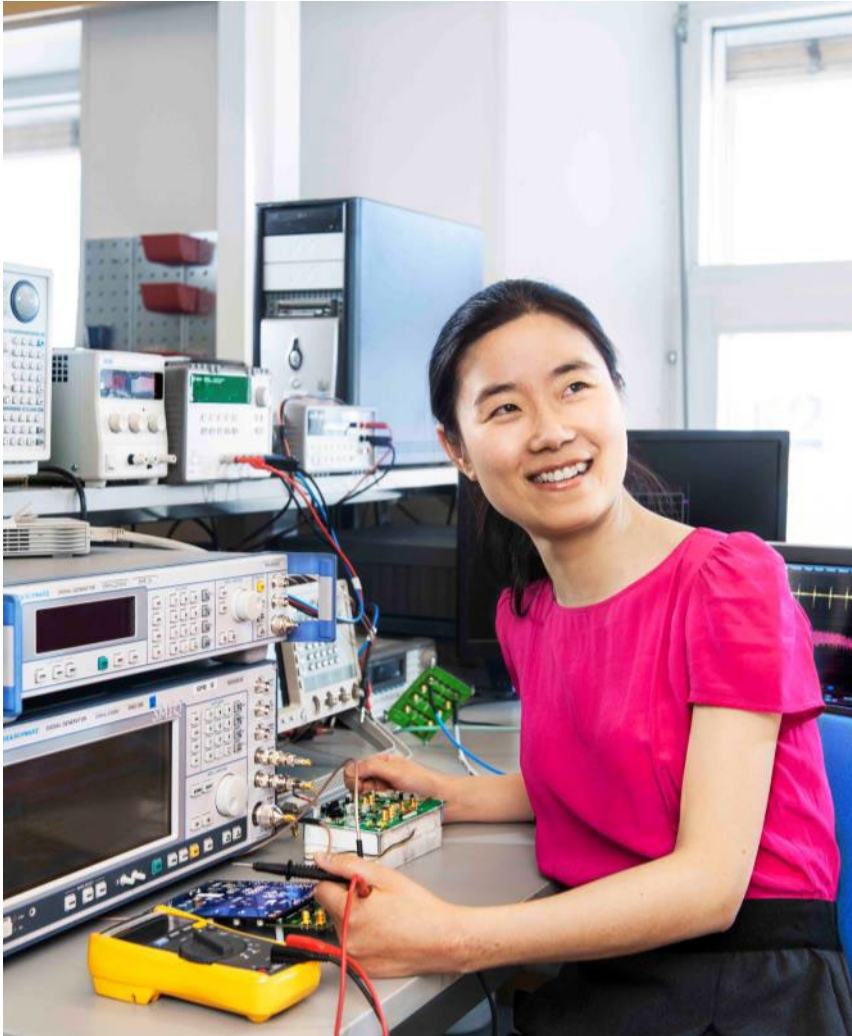
- After a KTH master degree: 1 year residence permit to look for a job or a PhD student position
 - KTH PhD student positions are publically announced at the web site, KTH MSc students may have an advantage
 - Many former KTH MSc students from enrol as KTH PhD students
 - After a KTH PhD degree: permanent residence permit in Sweden
 - KTH graduates find positions all over the world
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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...



Thermal design engineer at Zhejiang Dahua Technology Co. Ltd, China, 2018

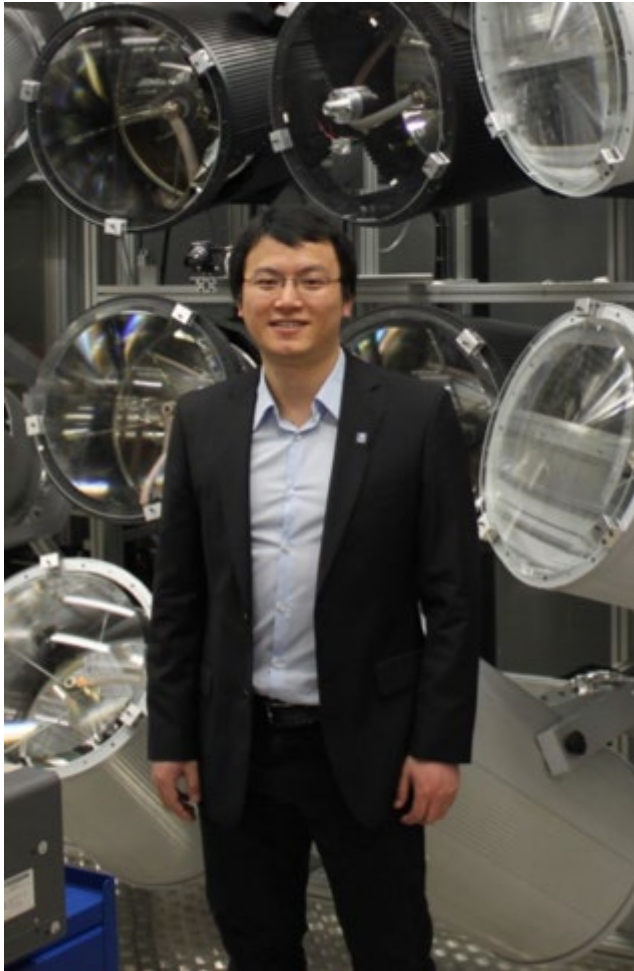
- Master in Sustainable Energy Engineering KTH, Sweden, 2017
- Bachelor in Energy and Environment System Engineering (KTH-ZJU 3+2) Zhejiang University, 2016

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



- PhD Candidate 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...



Permanent researcher, KTH.
Consultant at the company EPS AB.

- Researcher at Energy Technology Department. KTH, Sweden, 2018-2020.
- Postdoctor at Energy Technology Department. KTH, Sweden, 2016-2018.
- PhD in Concentrating Solar Power. KTH, Sweden, 2015.
- MSc in Engineering Thermophysics. Zhejiang University, China, 2010

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

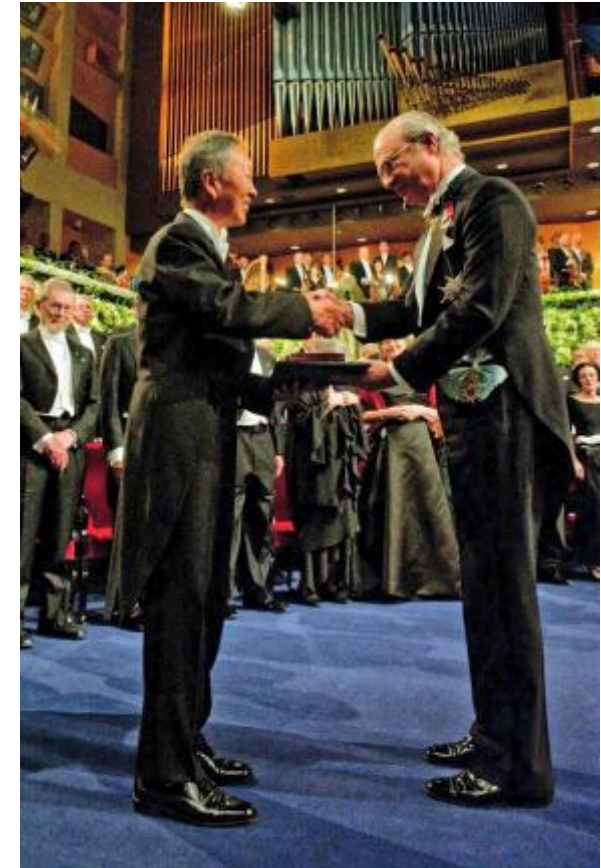
Things you can do after research at KTH... **collect the Nobel prize!**

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!

