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:
  - 13,500 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

Engineering and Science rankings

Comparison of QS rankings by subject 2024			
	KTH	SJTU	UM
General ranking	**74**	**45**	**21**
Electrical and Electronic Engineering	23	27	24
Architecture & Built Environment	30	44	32
Mechanical Engineering	20	21	15
Materials Science	25	25	39
Civil and Structural Engineering	49	32	31
Computer Science and Information Systems	60	27	41
Mathematics	49	37	25
Chemical Engineering	57	69	35
Physics and Astronomy	48	56	34
Chemistry	87	36	38
Yellow shading: higher rank than KTH			
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:

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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

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

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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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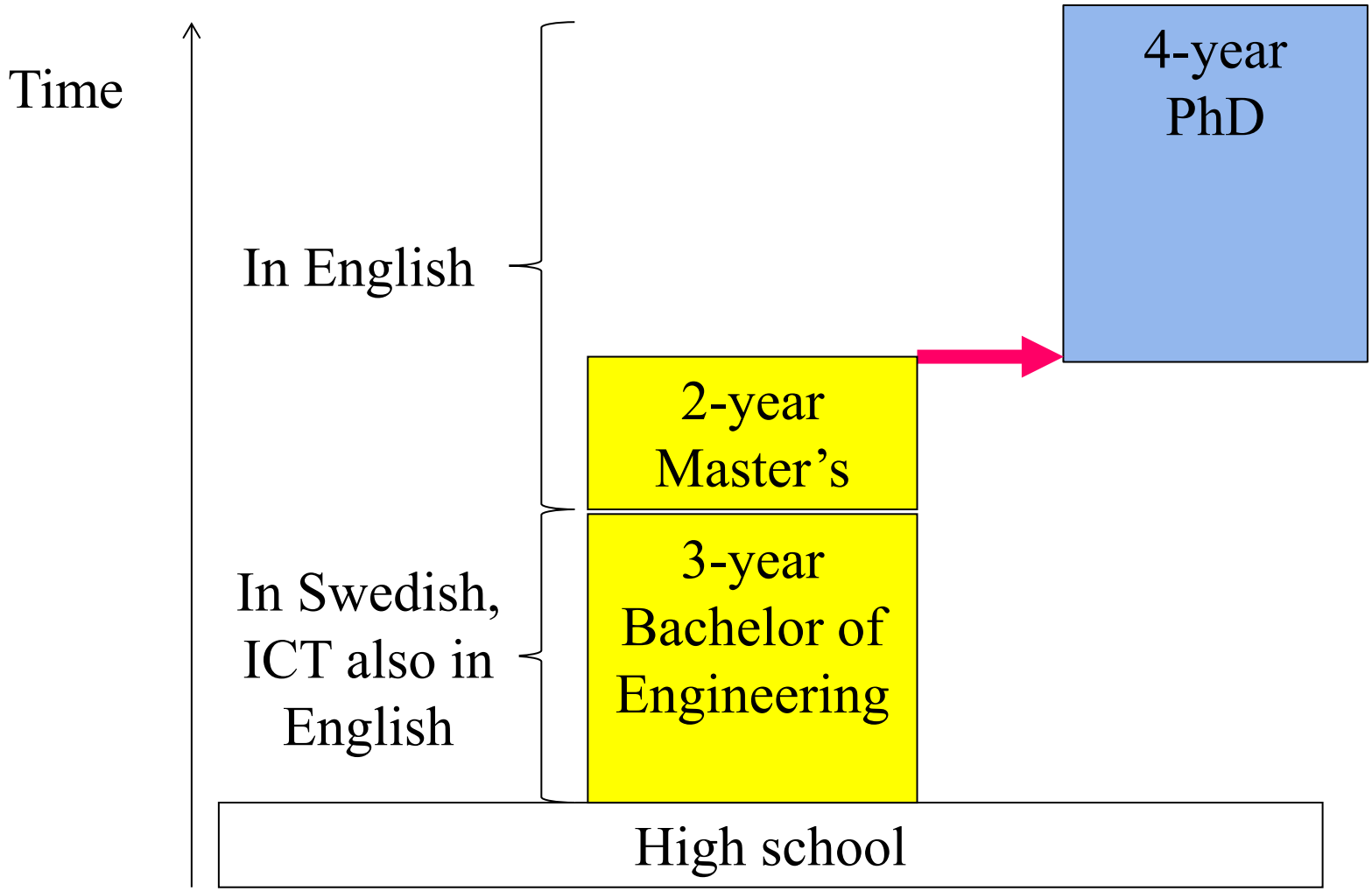
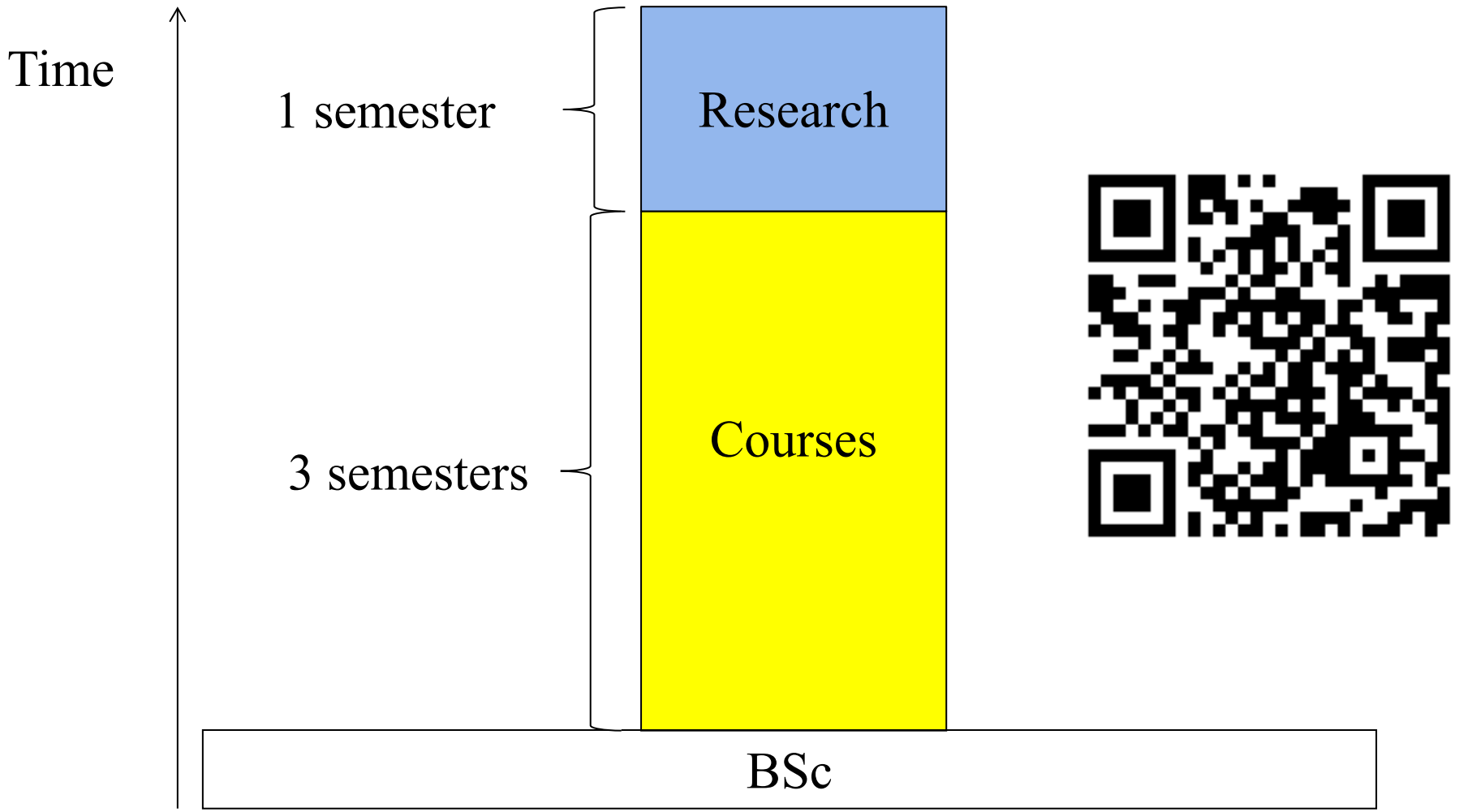
KTH main campus

Structure of education at KTH



Structure of MSc education at KTH



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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 m^2)
- 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

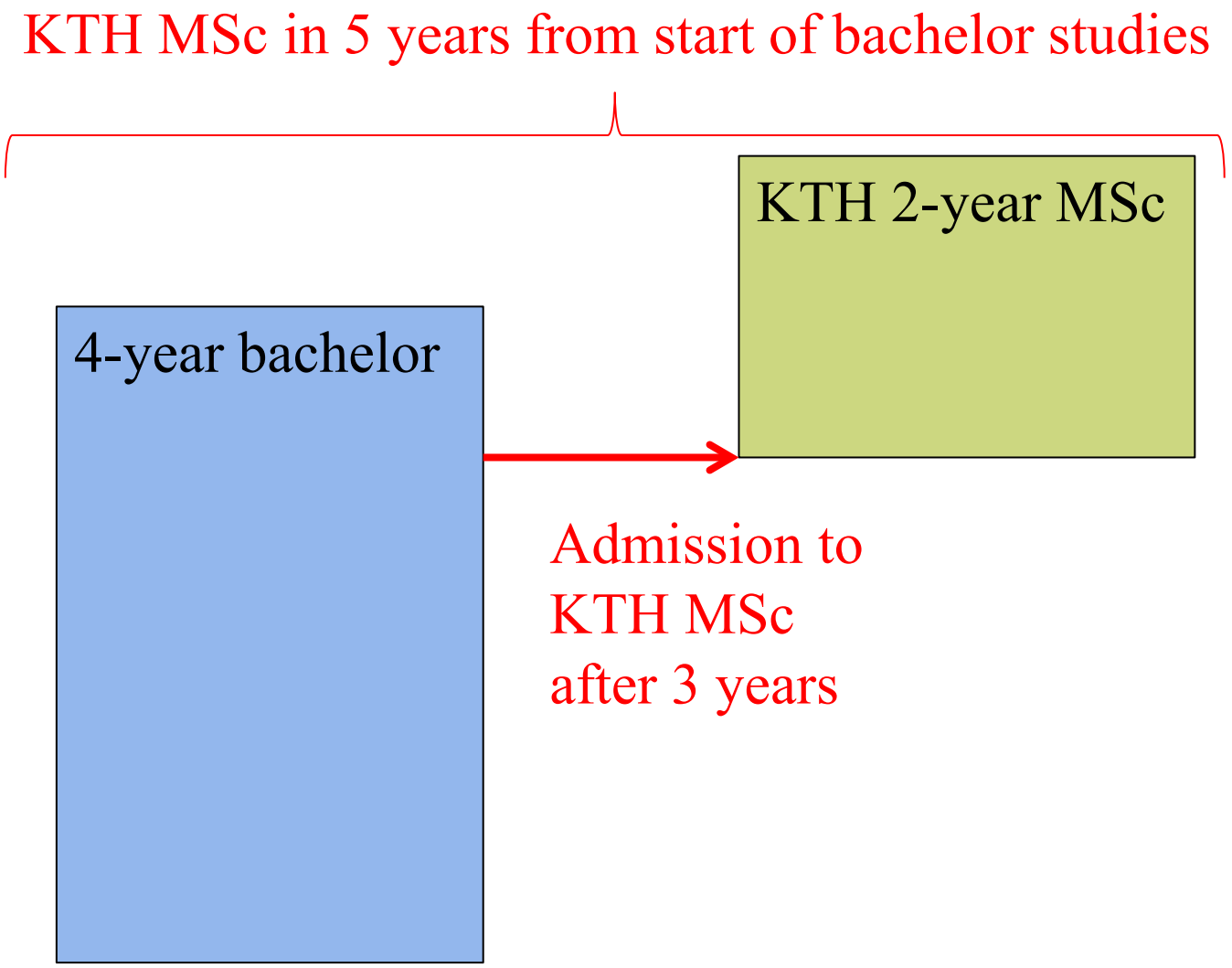
- Completed Bachelor's degree is required except for 3+2 applicants, see following slides for terms
- English proficiency has to be shown (TOEFL 90 with writing 20, IELTS 6.5 with no subscore below 5.5 etc)
- There are programme-specific requirements (see www.kth.se/en/studies/master)
- Apply at www.universityadmissions.se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

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
KTH 2-year MSc
4-year bachelor
Admission to
KTH MSc
after 3 years

3+2 program

KTH and SJTU + UM-SJTU-JI have a very successful 3+2 agreement since 2016

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: 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: 1. ... 2. ... 3. ... 4. ...
Computer Science/Information Technology equivalent to at least 22,5 ECTS, there must be 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: 1. ... 2. ... 3. ...
A course in calculus in several variable is required for some of the tracks	Course and brief description

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

SJTU – KTH 3+2 mapping
Recommended transitions

SJTU Applied Chemistry	KTH Industrial and Environmental Biotechnology (Courses BB1030 and BB1300 are mandatory during the first year of studies at KTH) KTH Medical Biotechnology (Courses BB1030 and BB1160 are mandatory during the first year of studies at KTH) KTH Chemical Engineering for Energy and Environment KTH Macromolecular Materials KTH Molecular Science and Engineering
SJTU Chemical Engineering	KTH Industrial and Environmental Biotechnology (Courses BB1030 and BB1300 are mandatory during the first year of studies at KTH) KTH Medical Biotechnology (Courses BB1030 and BB1160 are mandatory during the first year of studies at KTH) KTH Chemical Engineering for Energy and Environment KTH Macromolecular Materials KTH Molecular Science and Engineering
SJTU Polymer	KTH Industrial and Environmental Biotechnology (Courses BB1030 and BB1300 are mandatory during the first year of studies at KTH) KTH Medical Biotechnology (Courses BB1030 and BB1160 are mandatory during the first year of studies at KTH) KTH Chemical Engineering for Energy and Environment KTH Macromolecular Materials KTH Molecular Science and Engineering

UM-SJTU-JI – KTH 3+2 mapping Recommended transitions

UM-SJTU-JI Electrical and Computer Engineering	KTH Interactive Media Technology KTH Machine Learning ~~*KTH Media Management*~~ *Program cancelled* KTH Electromagnetics, Fusion and Space Engineering (It is strongly recommended that students have completed Ve215+Ve230+Ve216 and, in addition, Ve330+Ve334) KTH Electric Power Engineering KTH Information and Network Engineering KTH Systems, Control and Robotics (For eligibility students must have completed a course in Automatic Control) KTH Embedded Systems KTH Communication Systems (For eligibility students must have completed Ve489 Computer Connection Networks or equivalent) KTH Medical Engineering (Students are recommended to have pre-requisities in Atomic Physics and/or Radiation Physics)
UM-SJTU-JI Mechanical Engineering	KTH Engineering Design KTH Engineering Mechanics KTH Integrated Product Design (students only eligible to track: Innovation Management and Product Development-IPDE) KTH Naval Architecture KTH Vehicle Engineering

UM-SJTU-JI – KTH 3+2 mapping
Recommended transitions

UM-SJTU-JI Materials Science and Engineering	KTH Engineering Materials Science

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 (≤10%):

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

Easier programs to be admitted to (≥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!**

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

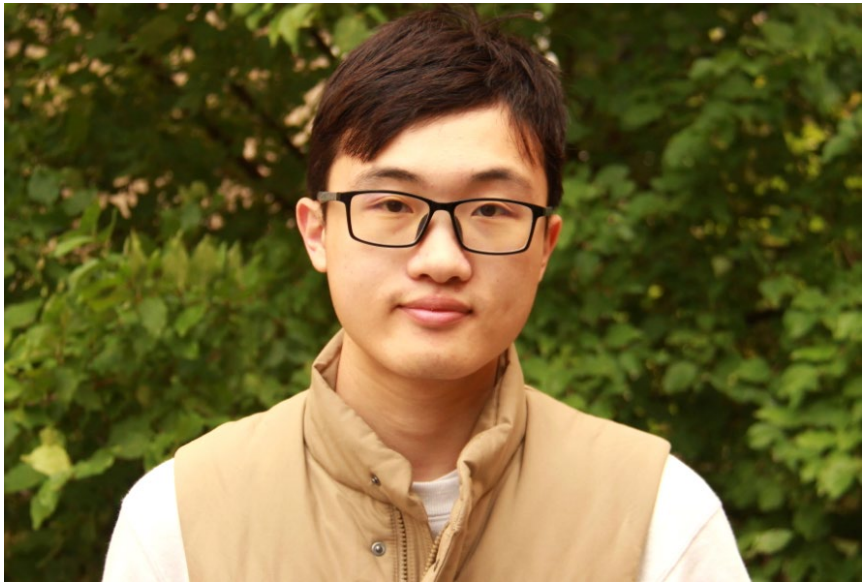
- Employment with a salary if admitted, but competition for positions

Things you can do after finishing education at KTH…

RF System Engineer at Imagination Technology, Sweden

- Intern at Synective Labs, Sweden
- Master in Embedded Systems, KTH, 2019
- Bachelor in Microelectronics, Shanghai Jiao Tong University, 2017

Things you can do after finishing education at KTH…

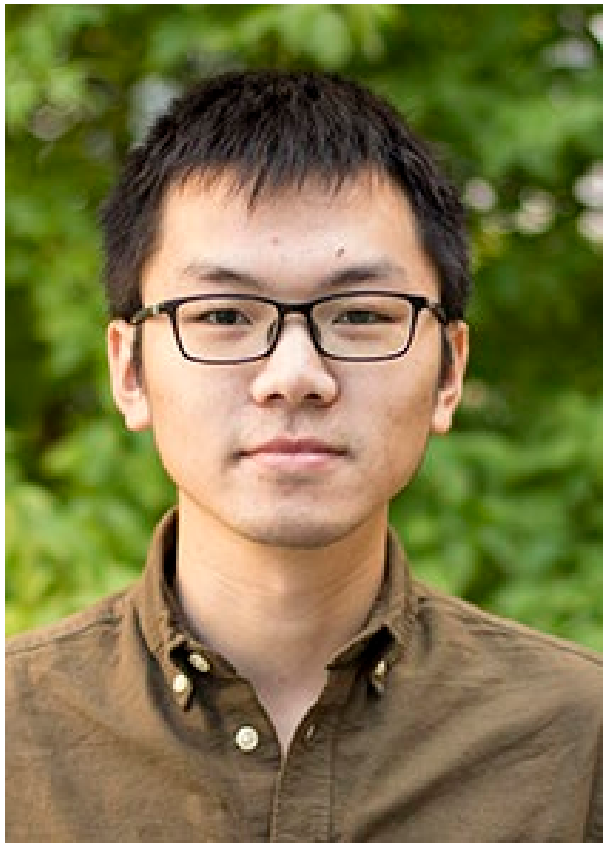


- Employed at IT company in Sweden
- KTH master program in Communication Systems, KTH-HUST 3+2 Program, KTH Scholarship holder, 2018-2020
- Bachelor: HUST, Telecommunications Engineering, ranked #1 of 200 students

Things you can do after finishing education at KTH…

- PhD student in Data Science, at KTH, 2021
- Master in Communication Systems, at KTH, 2020 (KTH-HUST 3+2)
- Bachelor in Information Technology, at Huazhong University of Science and Technology

Things you can do after finishing education at KTH…



- PhD candidate in systems and networking at University of Pennsylvania, USA
- Wireless Systems (Now Information and Network Engineering), Master of Science, KTH, 2016-2018
- Automatic Control, Bachelor of Engineering, Zhejiang University, 2013-2017 (KTH-ZJU 3+2)

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... 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

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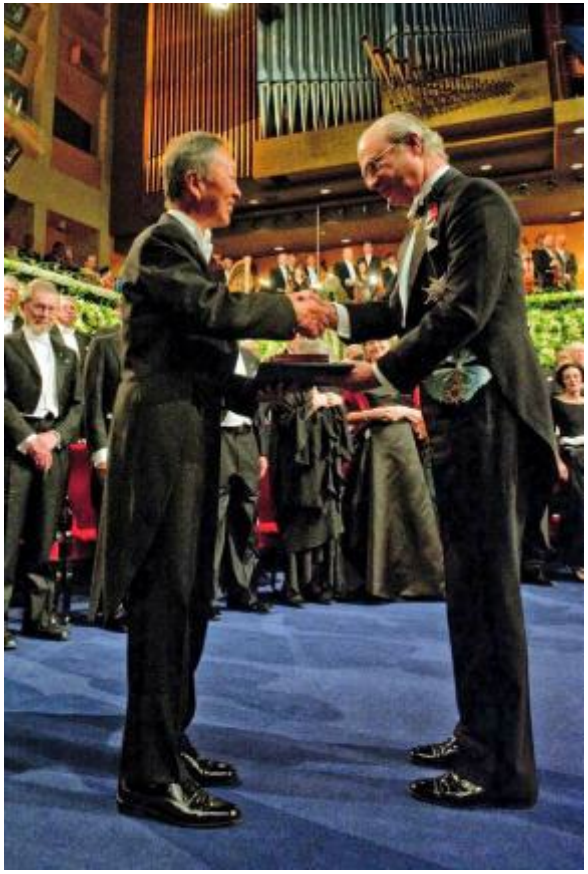
Nobel Prize ceremony in Stockholm on December 10 every year



... 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.

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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