



# 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
-



# Engineering and Science rankings

QS rankings by subject 2024	
	KTH
<b>General rankings for 2024</b>	<b>73</b>
Electrical & Electronic Engineering	23
Architecture & Built Environment	26
Mechanical Engineering	23
Materials Science	23
Civil and Structural Engineering	44
Computer Science and Information Systems	62
Mathematics	48
Chemical Engineering	58
Physics and Astronomy	64
Chemistry	87
KTH ranking in Times Higher Education 2023: 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.



# 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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# KTH main campus



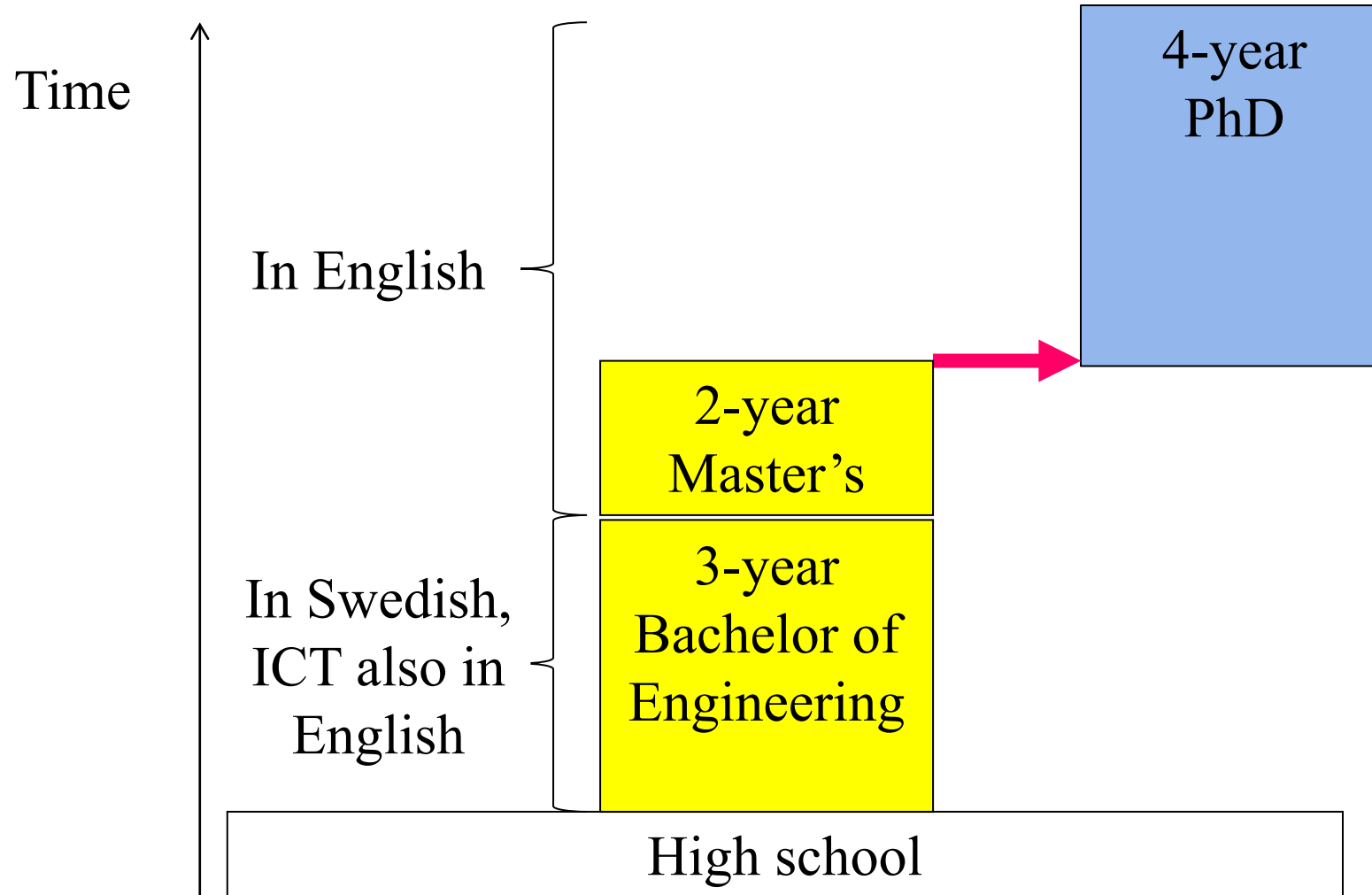


# Five campuses close to industry





# Structure of education at KTH





# MSc programmes for entry in 2024

## **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 SEK171k (about USD16k\*) 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: 8% of applicants got offers in 2023
- Joint programs: Erasmus Mundus and EIT (European Institute of Innovation and Technology)

\* Assuming exchange rate USD 1.0 = SEK 11

# 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 9450\*, about USD 860\*\*, per month for ten months of the year.

Breakdown of budget per month, approximately:

- Food: USD 210
- Accommodation: USD 410 (for about 19 m<sup>2</sup>)
- Local travel: USD 60
- Phone/internet: USD 40
- Other: USD 140

\* This sum was valid on 1 January 2023, subject to changes

\*\* Assuming exchange rate USD 1.0 = SEK 11



# 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](http://www.kth.se/en/studies/master))
  - Apply at [www.universityadmissions.se](http://www.universityadmissions.se)
  - Online application period: October 16 to January 15
  - Results of admission distributed March 27
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# Application for KTH scholarship

- Applications for KTH scholarships are open from December 1, 2023, to January 15, 2024
- Applications are entered via the KTH web page:
  - Go to master studies: [www.kth.se/en/studies/master/](http://www.kth.se/en/studies/master/)
  - Select "Scholarships" in the left menu and then "KTH scholarship"
- Scholarship opportunities: KTH Scholarship:





The diagram illustrates a two-stage educational path. On the left, a blue rectangular box is labeled "4-year bachelor". A red arrow points from the right side of this box to a green rectangular box on the right, which is labeled "KTH 2-year MSc". Below the arrow, the text "Admission to KTH MSc after 3 years" is written in red. A red line with a small hook at its end is positioned at the top of the diagram.





## 3+2 program

**KTH and NCKU signed a 3+2 agreement in 2023**

**Students can apply during the 3<sup>rd</sup> 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. **Joint programs and programs at other Swedish universities are NOT included in 3+2.**

Applications are made at [universityadmissions.se](https://universityadmissions.se) ,  
deadline January 15, 2024

## 3+2 applications

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

<b>KTH master program prerequisites, see "Entry requirements"</b>	<b>Corresponding bachelor level courses at your home university</b>
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



# NCKU – KTH 3+2 mapping

## Possible transitions

NCKU Mechanical Engineering	KTH Sustainable Production Development KTH Sustainable Technology KTH Production Engineering and Management KTH Engineering Mechanics if the following electives have been selected: - E121520 Mechanics of Materials (2) - E126400 Mechanical Vibration - E130800 Basic Finite Element Method - E145200 Engineering Statistics and Applied Probability
NCKU Computer Science and Information Engineering	KTH Communication Systems KTH Sustainable Technology
NCKU Photonics	KTH Engineering Physics KTH Electromagnetism, Fusion and Space Engineering KTH Nanotechnology KTH Sustainable Technology
NCKU Physics	KTH Engineering Physics KTH Electromagnetism, Fusion and Space Engineering KTH Nanotechnology KTH Sustainable Technology
NCKU Chemistry	KTH Molecular Science and Engineering KTH Macromolecular Materials KTH Sustainable Technology
NCKU Biotechnology and Bioindustry Sciences	KTH Sustainable Technology

# Comments on the 3+2 applications

## **Acceptance rates, numbers available on the KTH website**

Most popular master programs 2023 ( $\leq 10\%$ ):

- ICT Innovation:  $< 8\%$  for 4 of 6 tracks
- Cybersecurity:  $8\%$
- Computer Science:  $8\%$
- Systems, Control and Robotics:  $9\%$
- Machine Learning:  $10\%$

Average acceptance rate for all master programs:  $32\%$

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

- Sports Technology:  $73\%$
- Technology, Work and Health:  $71\%$
- Chemical Engineering for Energy and Environment:  $59\%$
- Medical Biotechnology:  $57\%$
- Macromolecular Materials:  $52\%$



# Languages: English or Swedish?

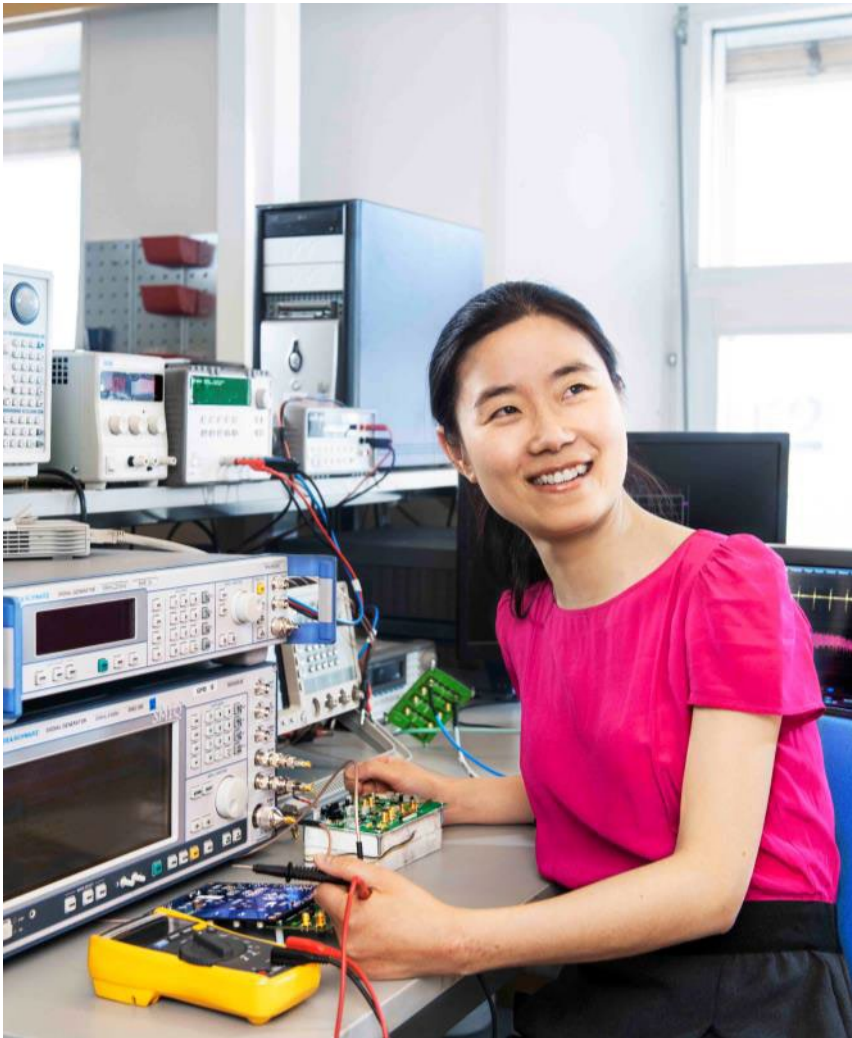
- **Good knowledge of English is fundamental** for successful education at KTH
  - Sweden has a local language but there is **very limited need to learn Swedish** when studying since people in Sweden speak good English
  - All KTH students who do not have Swedish as their first language are invited to 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...



ChihCheng (Ted) Yang  
Traffic planner, SJ AB, 2016-now  
Subway driver, TRTC, 2013-2015

- MSc in Transport and Geoinformation Technology, 2018 KTH, Stockholm
- B.B.A in Transportation Technology and Management, 2013 National Chiao Tung University, Hsinchu



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



Justin Chiu, Dr.  
Consultant at the company EPS AB  
Manager, KIC Innoenergy  
Associate Professor, KTH

- Postdoctoral researcher at Graduate Institute of Environmental Engineering  
National Taiwan University, Taiwan, 2014
- PhD in Energy Storage  
KTH, Sweden, 2013
- MSc in Engineering/ Dipl. Ing.  
National Institute of Applied Sciences, France, 2007

# KTH faculty member from Taiwan



Yves Hsieh, PhD  
Associate Professor, KTH  
Division of Glycoscience, School of Biotechnology  
Wallenberg Wood Science Center, School of Chemical  
Science and Engineering  
+ Faculty member of Taipei Medical University

- ARC Postdoctoral Research Fellow  
University of Adelaide, Australia, 2014-2015
  - PhD, School of Chemistry, University of Sydney,  
Australia, 2009-2013
  - Research Assistant, Genomic Research Center,  
Academia Sinica, Taiwan, 2006-2009
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# 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

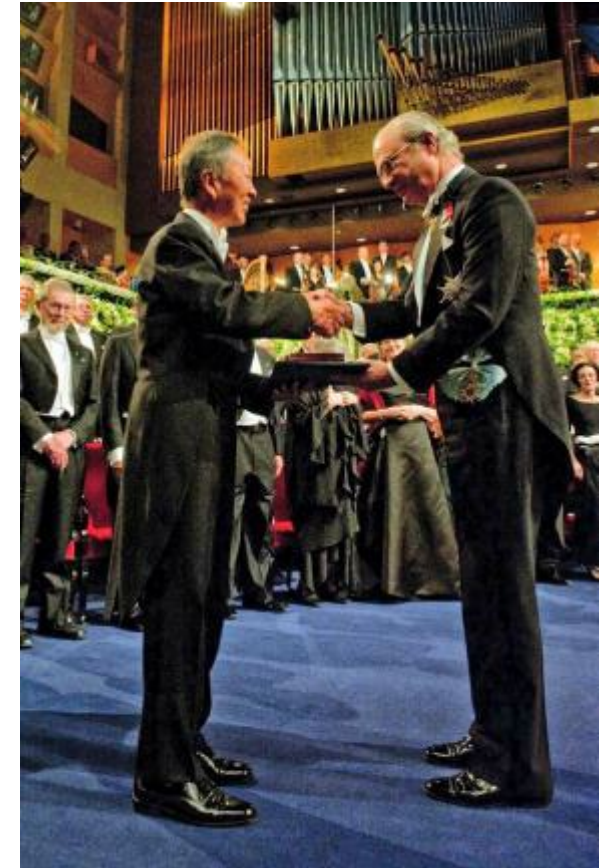
# Things you can do after research at KTH... collect the Nobel prize!

## 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 Banquet in the Stockholm City Hall, dressed in traditional costumes.





ROYAL INSTITUTE  
OF TECHNOLOGY

# Welcome to KTH: launch your career!

