KTH Royal Institute of Technology

Master's and PhD studies

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KTH Royal Institute of Technology

One of the top technical universities in Europe

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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

Short facts about KTH

- QS ranking: Global World ranking 89 (2021) but many engineering areas are much stronger:

  - Electrical and Electronic Engineering: 18
  - Architecture / Built Environment: 19
  - Mechanical Engineering: 25
  - Materials Science: 38
  - Civil & Structural Engineering: 38
  - Computer Science & Info Systems: 42
  - Mathematics: 49
  - Chemical Engineering: 78
  - Physics & Astronomy: 90
  - Chemistry: 109

Is KTH a good choice for SEU students? Yes!

Comparison of QS rankings by subject 2021		
	KTH	SEU
Electrical and Electronic Engineering	18	201-250
Architecture	19	51-100
Mechanical Engineering	25	401-450
Materials Science	38	151-200
Civil and Structural Engineering	38	151-200
Computer Science and Information Systems	42	401-450
Mathematics	49	251-300
Chemical Engineering	78	351-400
Physics and Astronomy	90	301-350
Chemistry	109	351-400
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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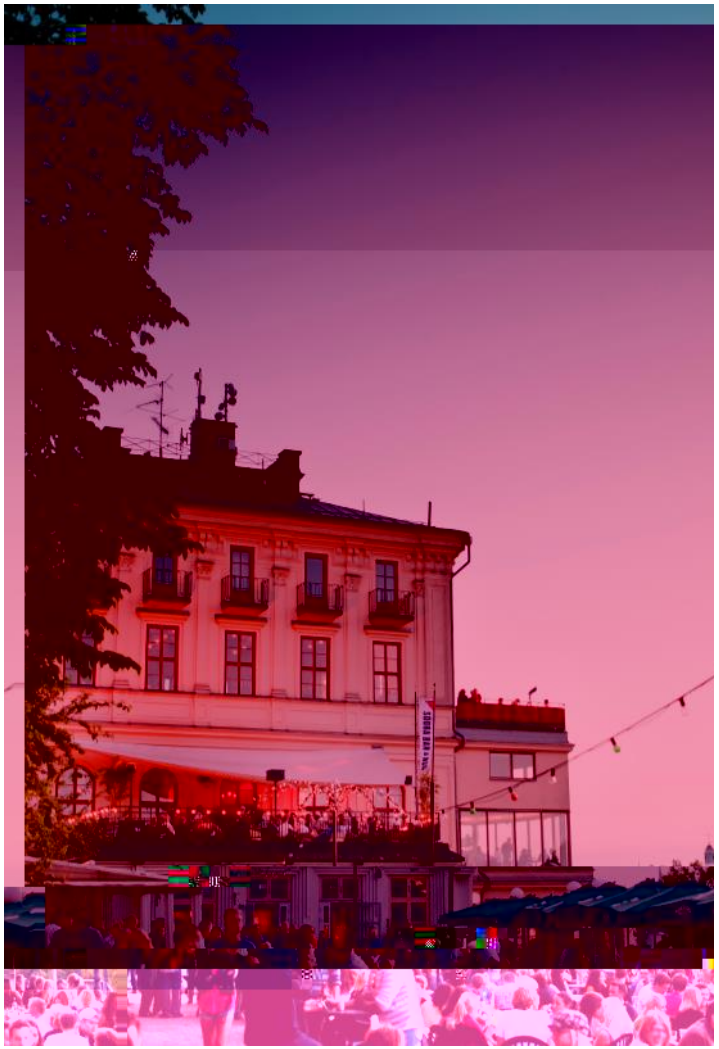
Stockholm: a dynamic environment, modern, historic, clean air and water



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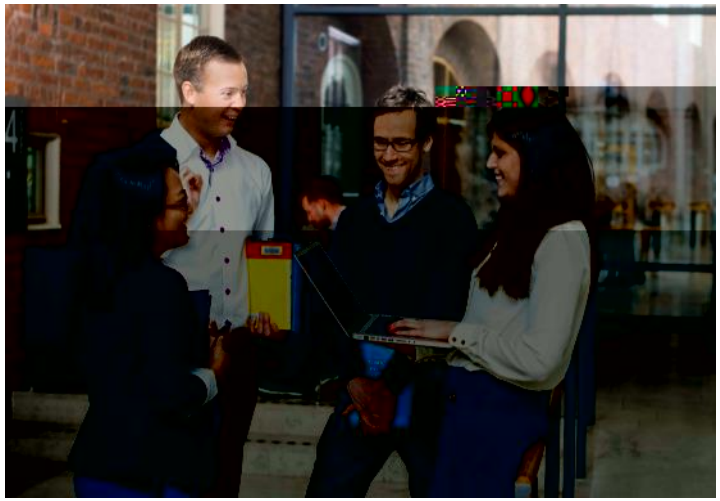
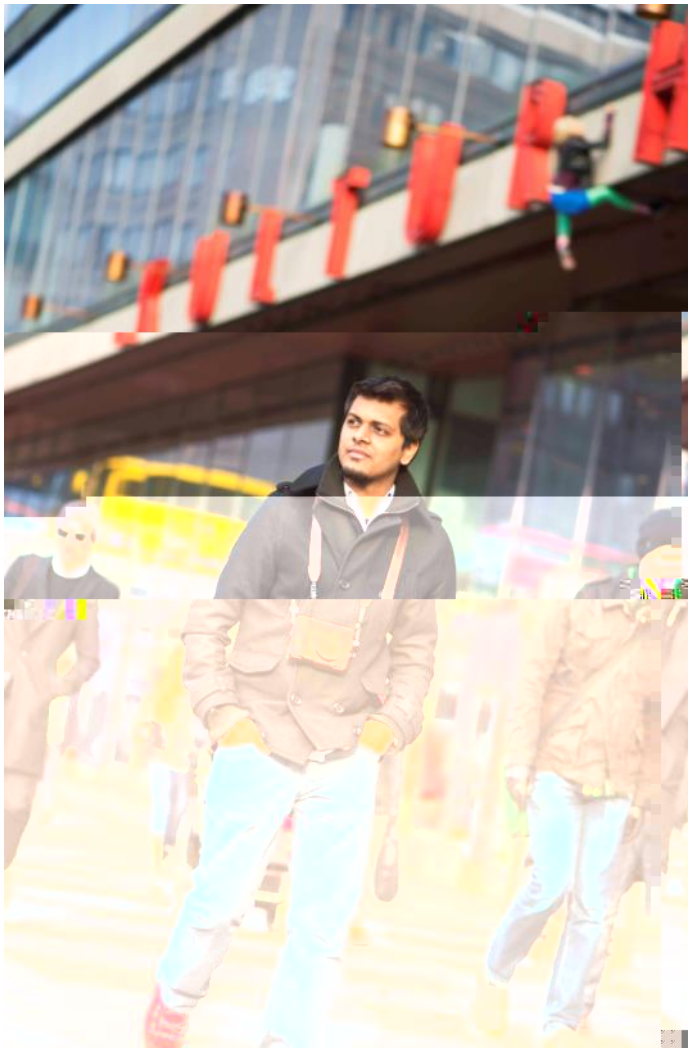
Stockholm student life, part of the city





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KTH main campus

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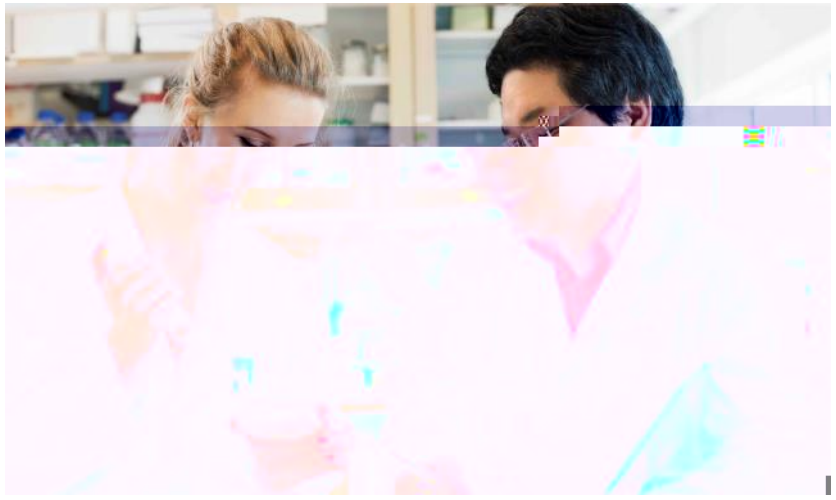
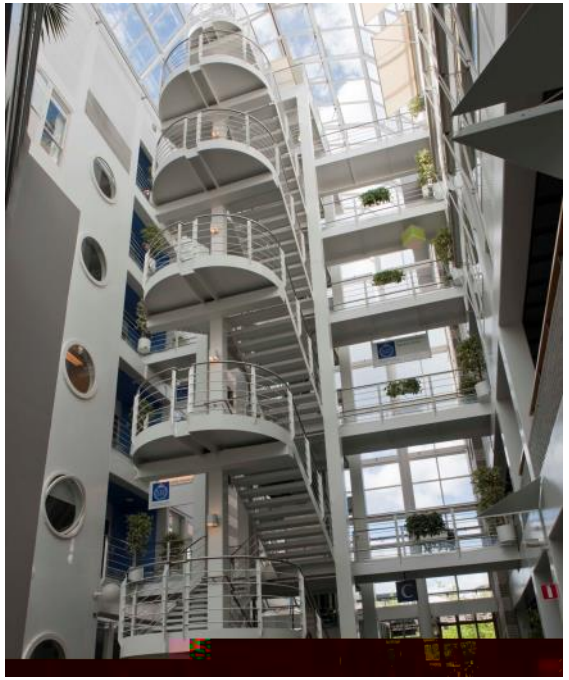
Five campuses close to industry





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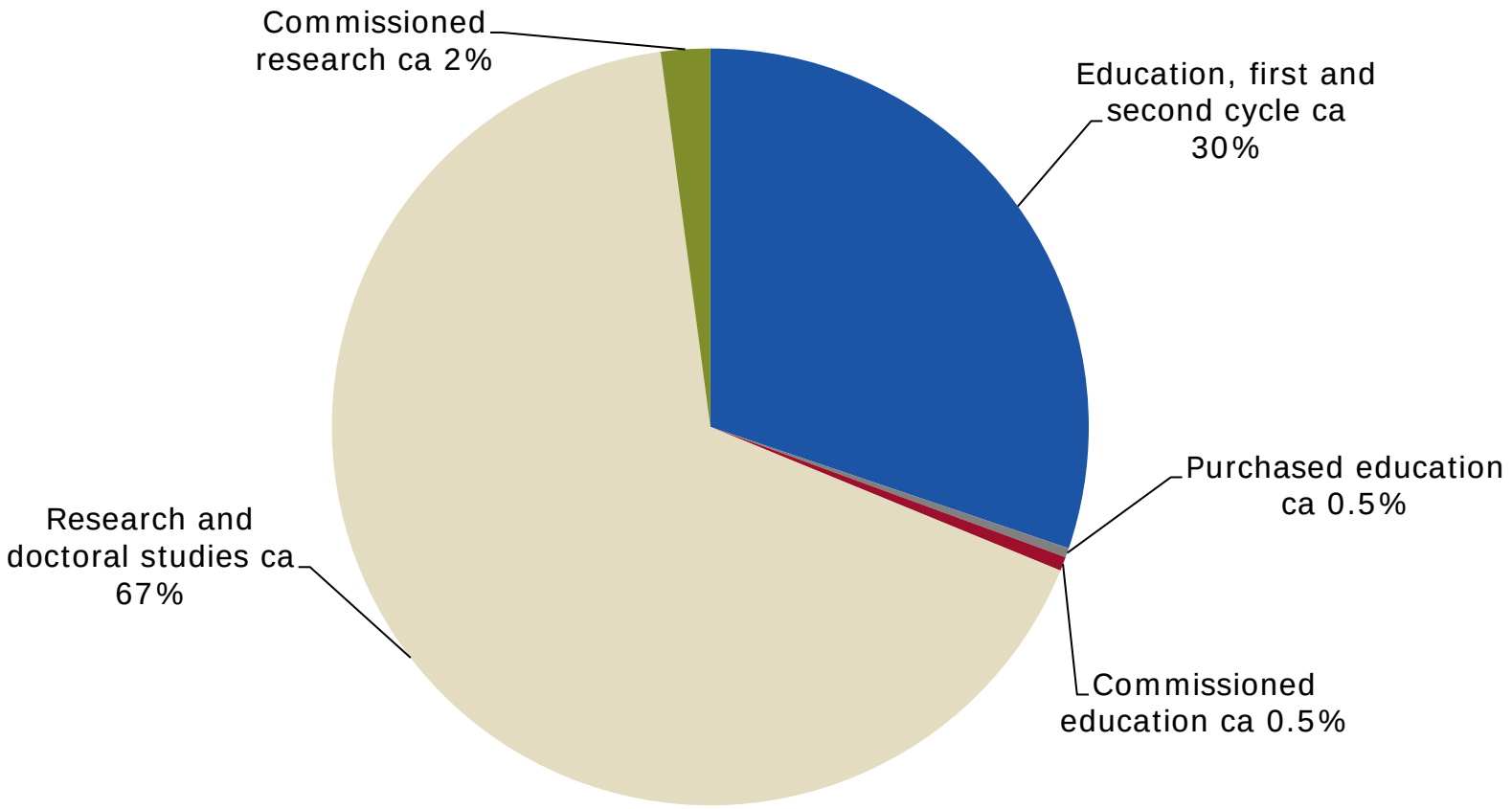
Education in close collaboration with industry

- 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

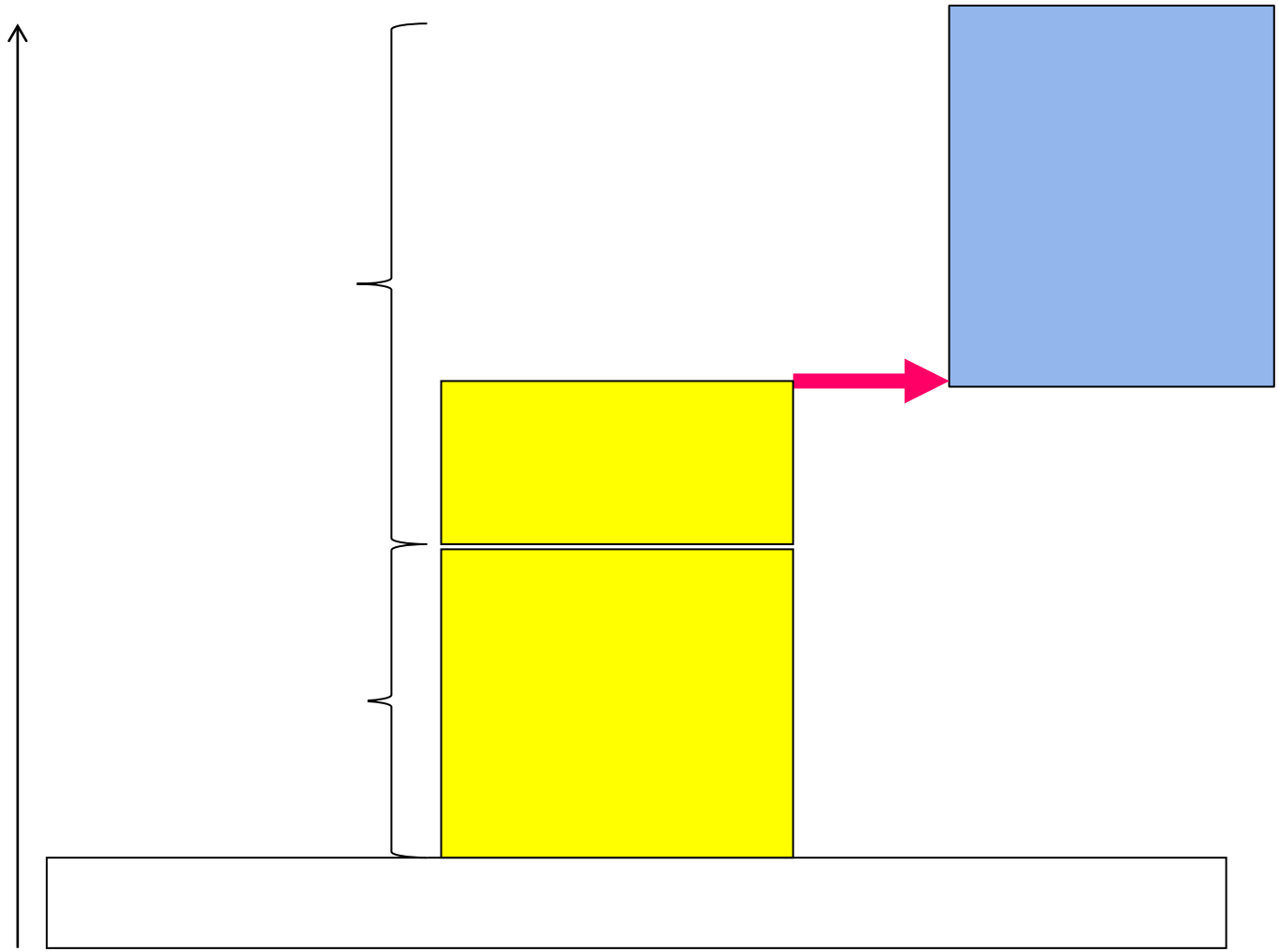
KTH - Research-based operations

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

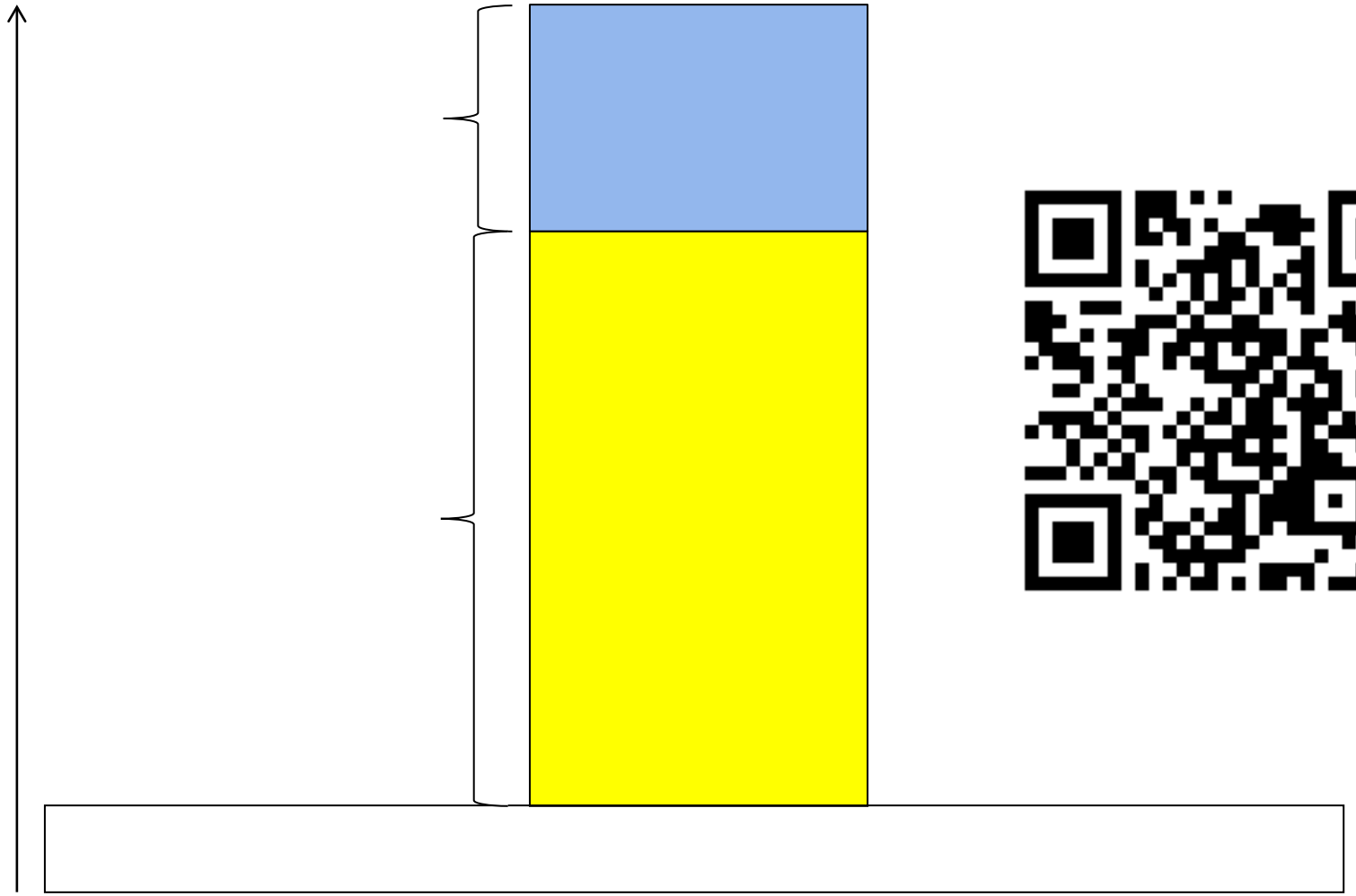


- Figure for 2016, exchange rate 1RMB = 1.3 SEK

Structure of education at KTH



Structure of MSc education at KTH



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MSc programmes for entry in 2022

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)

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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 8568, about RMB 6550*, per month for ten months of the year.

Breakdown of budget per month, approximately:

- Food: RMB 1700
- Accommodation: RMB 3000
- Local travel: RMB 500
- Phone/internet: RMB 350
- Other: RMB 1000

* Assuming exchange rate RMB 1.0 = SEK 1.3

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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

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.

3+2 program

of

4-year bachelor studies. These applicants

Applications 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 17, 2021

3+2 applications

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

Mathematics equivalent to at least 22,5 ECTS, there must be: 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: 1. … 2. … 3. …
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 and 3. a course in computational complexity	List courses and briefly describe contents: 1. … 2. … 3. …

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

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

SEU-Measuring Control Technology&Instrumentation New from 2021	KTH Embedded Systems, if elective courses have been chosen so that the following conditions are fulfilled: •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++).

KTH exchange program

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

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

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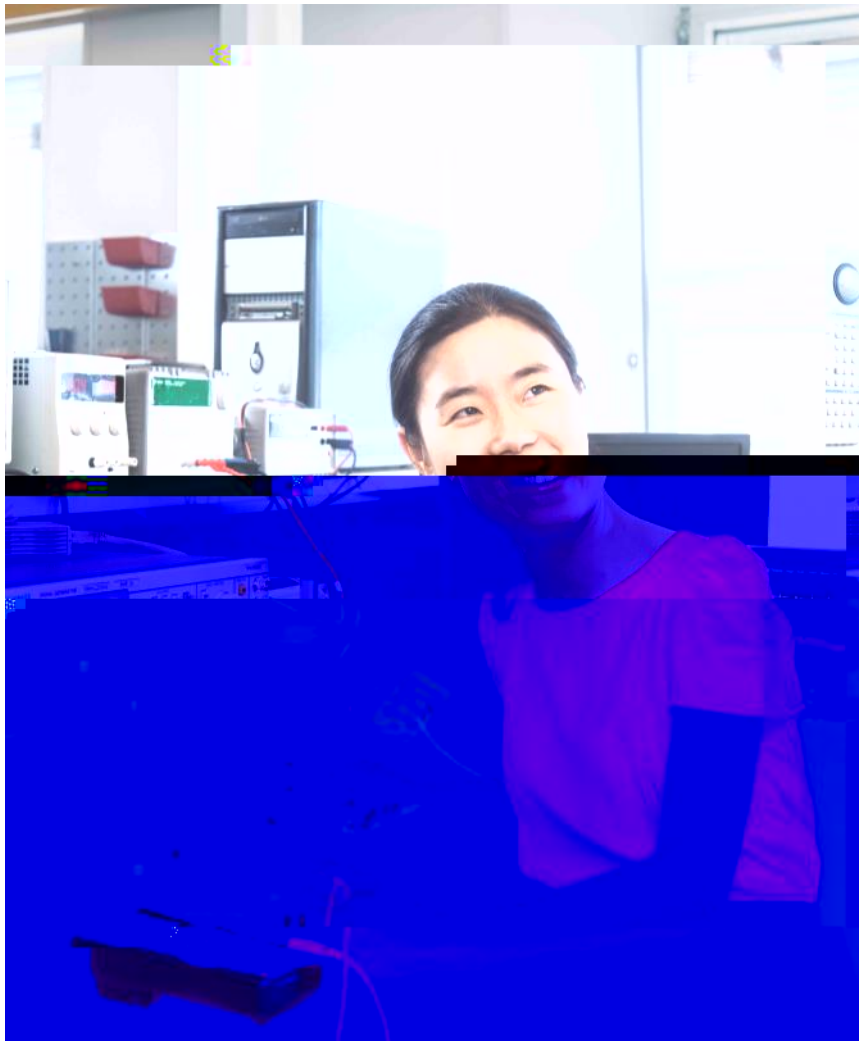
After graduation with master degree

- 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

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

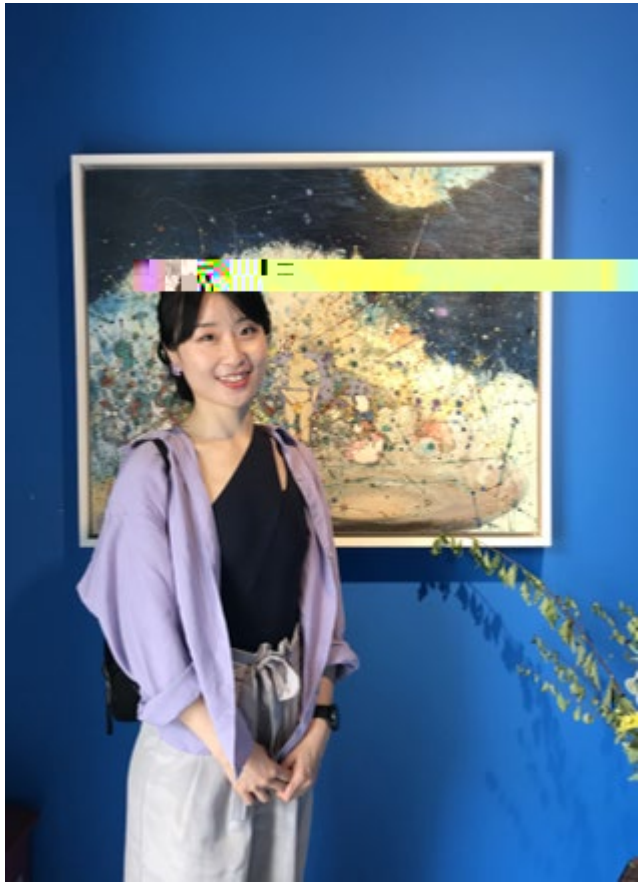


- Three years of full-time research, one year of courses
- Engages around 2,000 people
- A large proportion international PhD students
- A candidate has to apply for a position
- All PhD student positions are announced on the KTH web site:

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...



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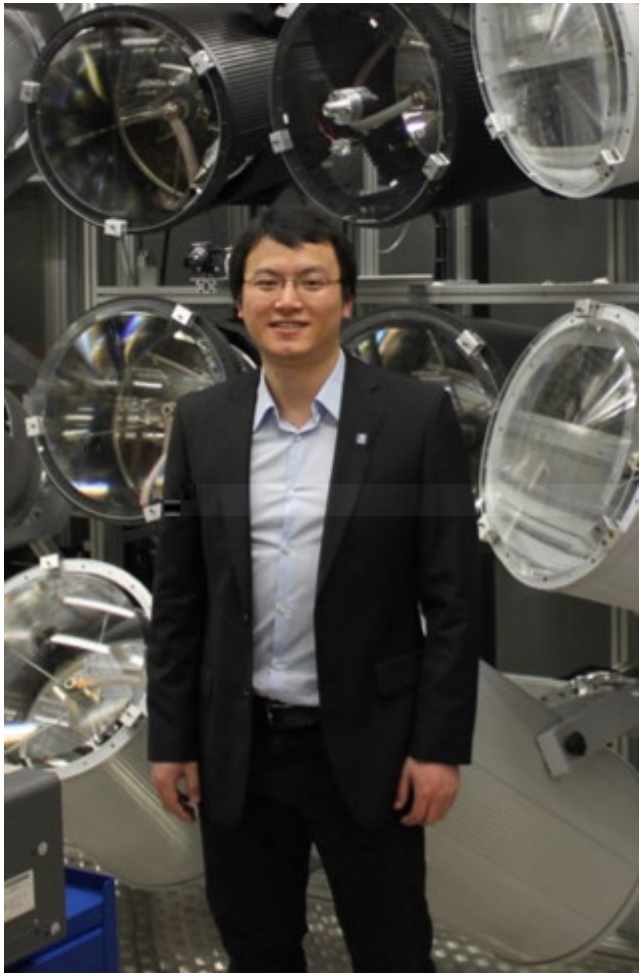

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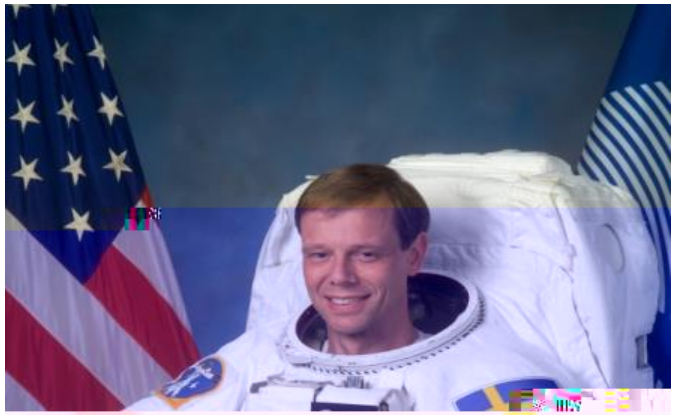
Things you can do after finishing education at KTH... go into space!



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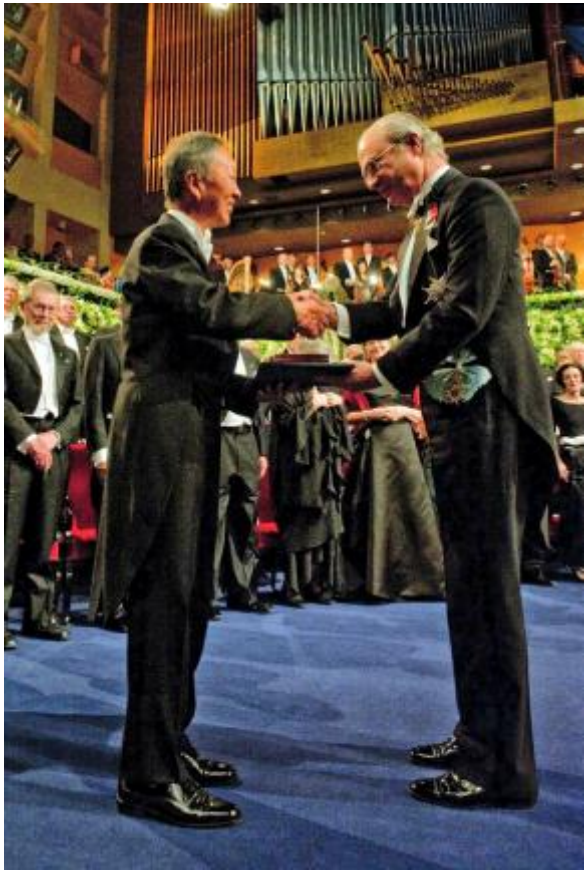
Nobel Prize ceremony in Stockholm on December 10 every year



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

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The Nobel Banquett

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

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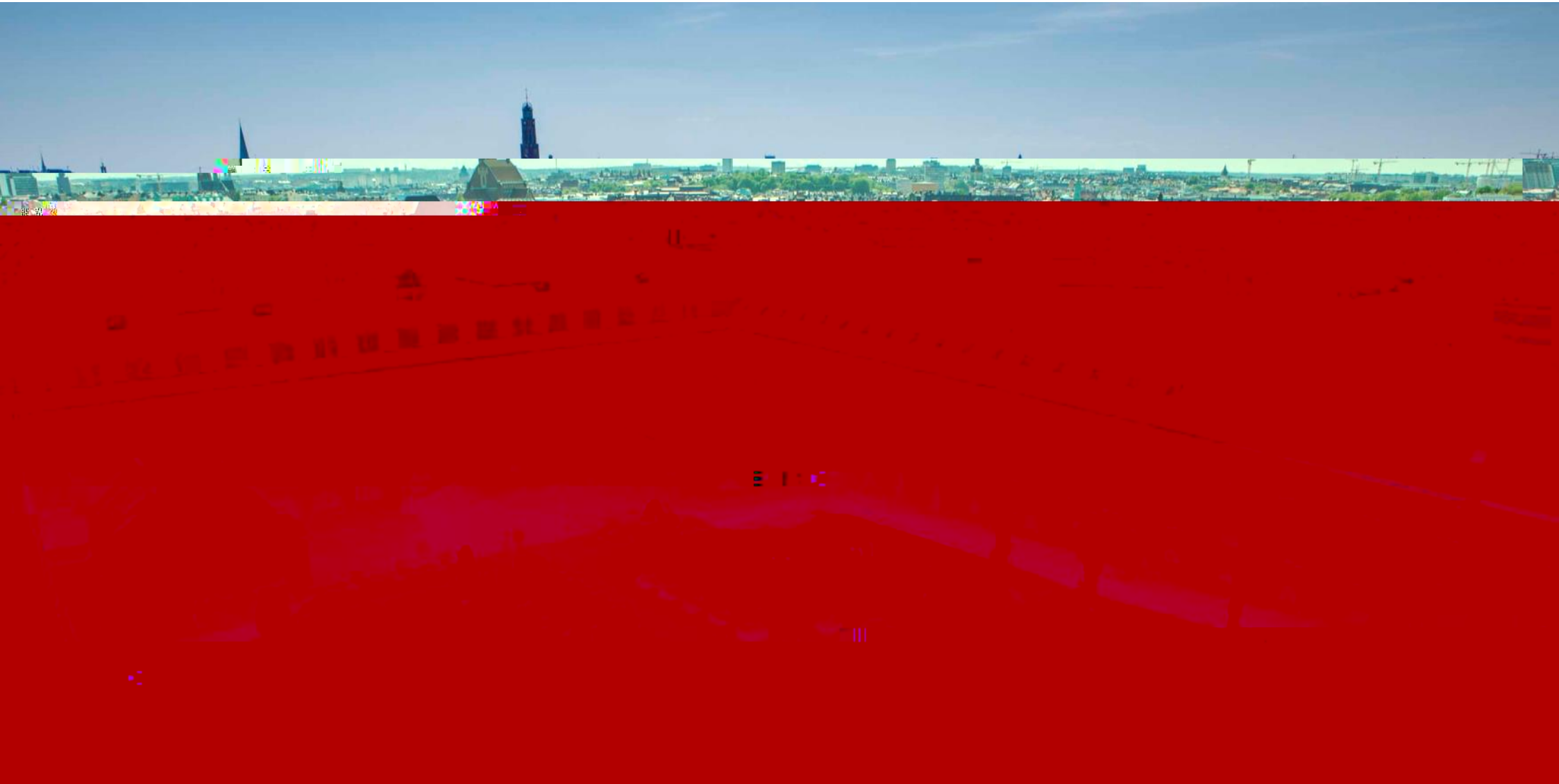
Welcome to KTH: launch your career!