



BLEKINGE INSTITUTE OF TECHNOLOGY

BTH

EDUCATION AT BTH 2018





WELCOME TO BLEKINGE INSTITUTE OF TECHNOLOGY, BTH

Blekinge Institute of Technology, BTH, is one of the most distinctly profiled universities in Sweden, where applied IT and innovation for sustainable growth are in focus.

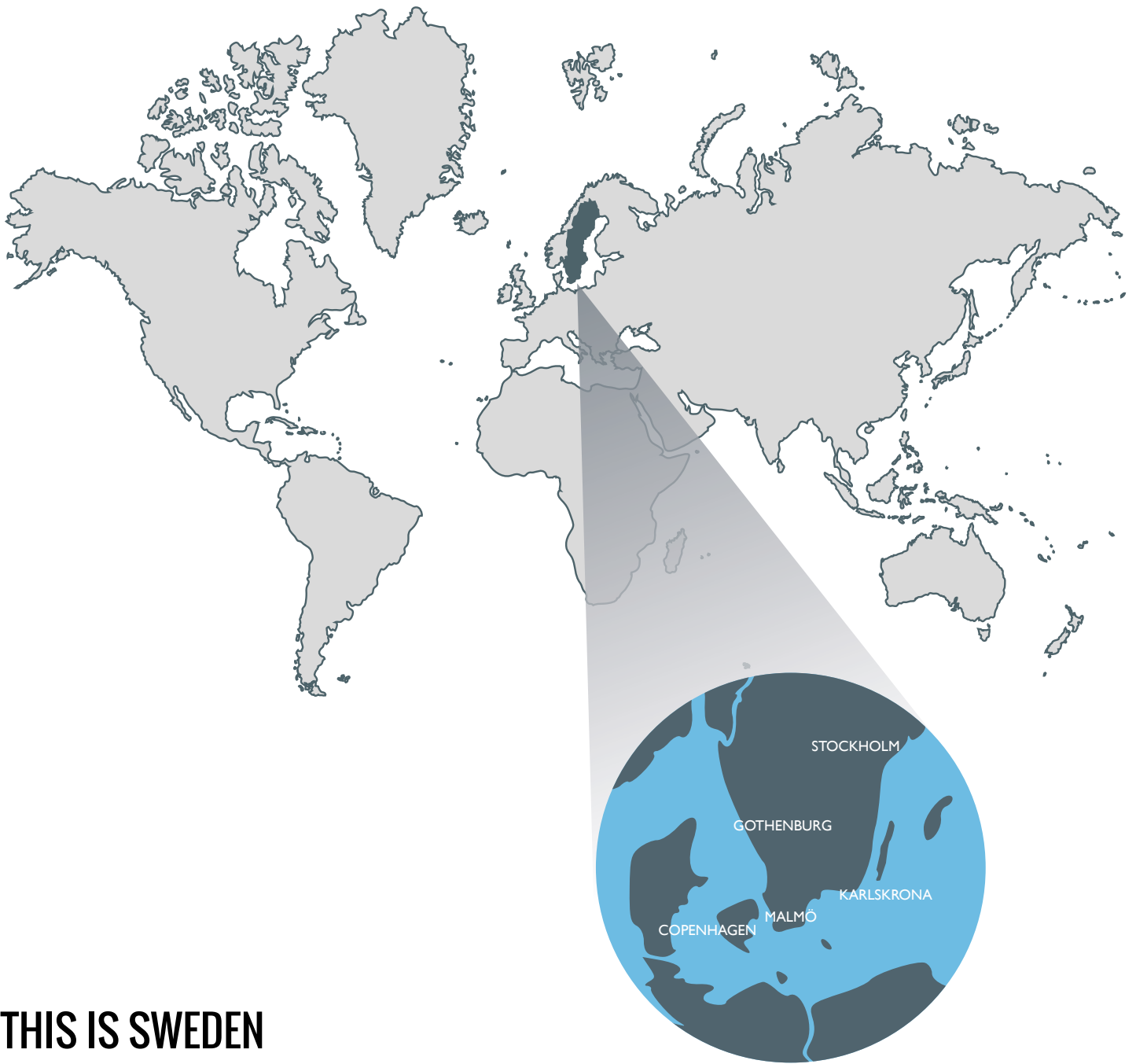
BTH has the vision to conduct education and research in which engineering and IT can be integrated with disciplines such as spatial planning, industrial economics, design and health sciences to contribute to solving societal challenges.

Everything we do at BTH has three distinct perspectives: innovation, sustainability and in real life, which means collaboration and exchange with both business and industry as well as society.

The city of Karlskrona, where our main campus is located, was founded in 1680. Today, 300 years later, the naval tradition lives side by side with the city's strong IT sector and innovation activities. The city is listed as a World Heritage Site by UNESCO. Karlshamn, where our other campus is situated, has one of the largest ports in Sweden. It is also a town with many cultural gems and well-preserved buildings that reflect its colourful past.

You will find it easy to adapt to your new surroundings since everyone communicates easily in English. Let me welcome you to BTH and a lifelong experience.

Anders Hederstierna
Vice-Chancellor



THIS IS SWEDEN

For a sparsely populated country in the far north of Europe, Sweden has done remarkably well in establishing and maintaining an outstanding reputation abroad.

Sweden is a part of Scandinavia and the third largest country in Western Europe – almost the same size as Spain or France, and bigger than California, USA. Sweden is, however, a small country in terms of population, with only 10 million inhabitants – which is about 0.1% of the world population.

Today Sweden is one of the strongest economies in the world offering a high quality of life in a modern welfare society. It is a rich and well-educated country with large annual investments in education and

research. Sweden has become a multicultural country over the past fifty years. The official language is Swedish, but almost all Swedes are able to communicate in English.

A focus in the development of Swedish society has been on the environment. One reason for this is the emotional affinity with nature of the Swedish population.

HIGHER EDUCATION IN SWEDEN

All higher education in Sweden is provided by state-run higher education institutions or by self-governing, independent institutions that have an agreement with the state.

There are 35 higher education institutions in Sweden. Their three principal missions are teaching, research and external engagement. The state is responsible for providing higher education in Sweden. The Swedish Parliament and the Government decide on regulations and the allocation of basic funding.

The Swedish higher Education Act stipulates that higher education must have an academic or artistic basis and must be founded on tried and tested experience. All higher education must be of high quality. Universities are responsible for continually developing the quality of their programmes and for providing quality assurance. Standards are maintained via regular audits by the Swedish Higher Education Authority.

The Government stipulates which qualifications may be awarded by whom as well as the specific requirements for those qualifications.

Higher education institutions have a Board of Governors and a Vice-Chancellor. The Vice-Chancellor is appointed by the Government.

Sweden has a system of credits in which a full-time academic year of 40 weeks corresponds to 60 credits. The system is compatible with the European Credit Transfer System (ECTS). The academic year is divided into two semesters – autumn semester and spring semester.

All courses and study programmes are placed within one of three cycles: Bachelor, Master or PhD. After completion of their studies, students can apply for a degree certificate. A diploma supplement in English describing the qualification, cycle and learning outcomes is issued automatically together with the degree certificate.



Qualifications

BACHELOR'S STUDIES

The general entry requirements are the same for all higher education. In short, they are met either by completing an upper-secondary school programme or by having the potential to benefit from the education, by virtue of other education, practical experience or other circumstances.

- Higher Education Diploma is a qualification awarded after two years of full-time study.
- Bachelor of... is a qualification awarded after three years of full-time study.

MASTER'S STUDIES

The general entry requirements are: a qualification within the first cycle of at least 180 credits or a corresponding international qualification.

- Master of... (60 credits) is a qualification awarded after one year of full-time study.
- Master of... (120 credits) is a qualification awarded after two years of full-time study.

PHD STUDIES

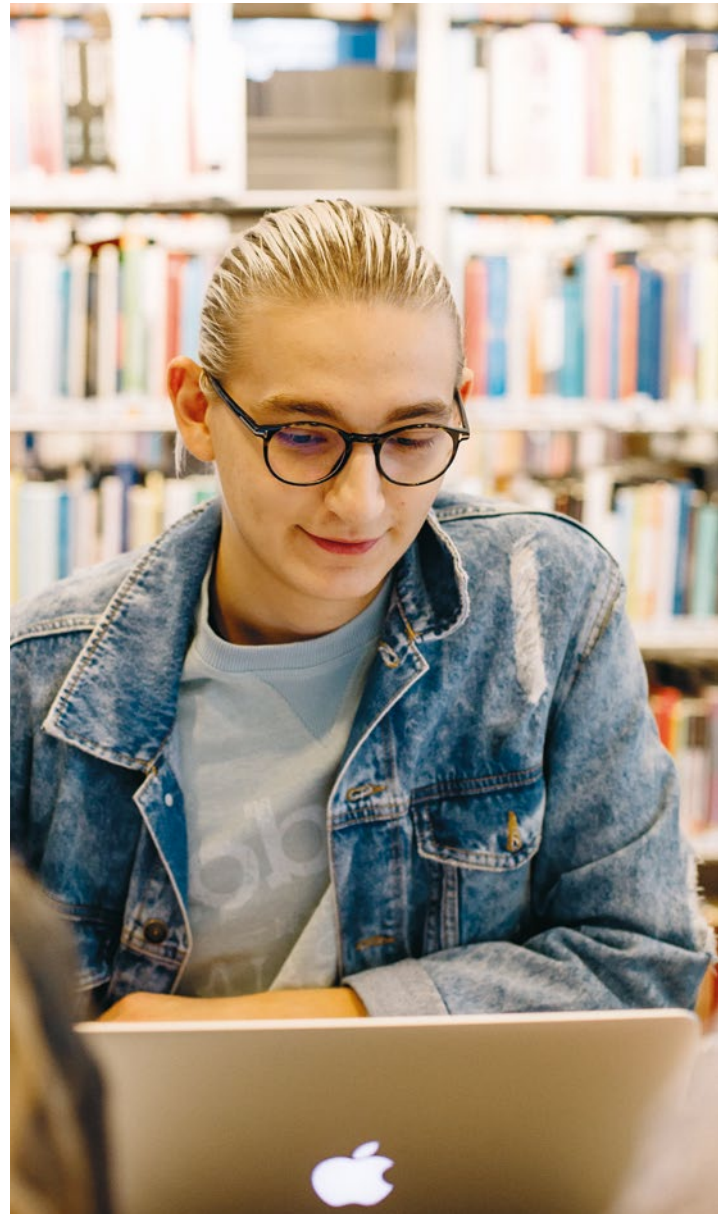
The general entry requirements are: a second cycle qualification, completed course requirements of at least 240 credits of which 60 credits are within the second cycle or an equivalent level of knowledge acquired in Sweden or abroad.

- Licentiate is a qualification awarded after two years of full-time study.
- Doctor of Philosophy is a qualification awarded after four years of full-time study.

PROFESSIONAL QUALIFICATIONS

A number of professional qualifications are awarded in the Swedish higher education system. BTH offers the following professional qualifications:

- Bachelor of Science in Engineering, 180 credits.
- Master of Science in Engineering, 300 credits.
- Bachelor of Science in Nursing, 180 credits.
- Postgraduate Diploma in Specialist Nursing, 60/75 credits.





BTH is one of the most distinctly profiled universities in Sweden where applied IT and innovation for sustainable growth are in focus. BTH offers top quality education and training in creative and modern surroundings.

BTH offers great study environments at its two campuses. The proximity to the sea gives an amazing feeling and the fact that BTH is a small university creates a friendly atmosphere. The campus sites are close to both the school and city centre, with great variety of restaurants, shopping, and culture and entertainment.

Among the 5,900 registered students there are currently more than 500 international students. Most of these students apply for our Master's programmes offered in English. At BTH you will meet both students and staff from all over the world. The students, together with the staff, represent around 70 different countries.

EDUCATION

BTH offers seven Master's programmes in English, in a variety of fields, ranging from engineering to spatial planning.

BTH works proactively with internationalisation at home (IaH), by developing study programmes with an international focus, by cooperating with important bodies in the surrounding region (companies, municipality, etc.) and by organising social activities to enhance our multicultural environment.



THIS IS BTH

SOME FACTS ABOUT BTH

- Founded in 1989, BTH is one of Sweden's most distinctly profiled universities.
- Our profile is applied IT and innovation for sustainable growth.
- Approx. 5,900 students.
- More than 500 international students representing around 70 nationalities.
- BTH has two campuses, located in Karlskrona and Karlshamn. The main campus is situated in Karlskrona.
- Approx. 11 Master's programmes for Swedish and international students.
- Approx. 20 Bachelor's programmes.
- Single subject courses and study programmes in a variety of areas taught in English.
- Approx. 10 PhD programmes.
- One third of BTH's activities are research and research studies.
- No tuition fees for students from the European Union (EU) or European Economic Area (EEA).
- BTH offers scholarships for non-EU/EEA students.
- The libraries at BTH are based on information technology and offer their services to all students.
- BTH co-operates with approximately 65 European partner universities within the European Erasmus programme.
- BTH has around 35 bilateral agreements with universities all around the world.

RESEARCH

The research at BTH is conducted at two faculties – the Faculty of Computing and the Faculty of Engineering – within the fields of engineering, IT, spatial planning, industrial economics, design and health sciences.

In 1999, BTH was granted the right to give PhD programmes in engineering. Today we run PhD programmes in “IT with Applications” and in “Planning and Management”.

INTERNATIONAL MASTER'S PROGRAMMES 2018

MASTER OF SCIENCE PROGRAMME IN MECHANICAL ENGINEERING WITH EMPHASIS ON STRUCTURAL MECHANICS

120 credits

This programme will prepare you to contribute to advanced product development or to conduct research in mechanical engineering. On completion of the programme, you should master a coordinated method of working with analysis to support decisions in the product development process, covering the elements of virtual and physical modelling, simulation and experimental investigation, and optimization.

Informed by a specialized knowledge in mathematics, numerical calculation methods, measurement technology, analysis of vibrations, acoustics and fracture mechanics, you will have a solid basis for working with performance prediction and ensuring that new products achieve their intended function.

The programme consists of 120 credits and leads to a two-year Master's degree.

Programme manager: Ansel Berghuvud
Email: ansel.berghuvud@bth.se

MASTER OF SCIENCE PROGRAMME IN COMPUTER SCIENCE

120 credits

Computer science is today a vast field including topics such as programming languages, algorithms and complexity analysis, data structures, intelligent systems, distributed systems and network technology.

The Master's programme in Computer Science is a broad programme that will provide you with knowledge of core methods within the field of computer science. If you are interested in a specific sub-field, you will have the possibility to design your own programme. The programme includes a number of elective courses to choose from.

Core courses include artificial intelligence, machine learning, simulation, performance optimisation, multi-core programming, security and development of decision support systems for different application areas such as the ones listed above.

The programme will offer lectures, seminars and lab assignments. The assignments are conducted either individually or in groups.

The programme consists of 120 credits and leads to a two-year Master's degree.

Programme manager: Marie Persson
Email: master.computerscience@bth.se

MASTER OF SCIENCE PROGRAMME IN ELECTRICAL ENGINEERING WITH EMPHASIS ON TELECOMMUNICATION SYSTEMS

120 credits

If you want to learn more about future communications systems, this programme is for you. It mainly focuses on future communications networks and the problems and challenges these will entail.

The programme deals with issues affecting computer networks, the internet, mobile systems, cloud communications, software defined networks (SDN), user-perceived service quality (QoE), network-based services and research methodology.

You will acquire the knowledge necessary for qualified development work within the industry and a basis for research studies through technical knowledge and analytical skills. You will meet and collaborate with researchers within telecommunications systems and acquire a good understanding of the field.

The programme consists of 120 credits and leads to a two-year Master's degree.

Programme manager: Patrik Arlos
Email: master.telecom@bth.se

MASTER OF SCIENCE PROGRAMME IN SOFTWARE ENGINEERING

120 credits

The programme meets the complex challenges facing the software developers of the future. This is achieved through education and training in advanced concepts within software technology, covering the entire sequence of development.

The Master's programme in Software Engineering will provide you with the skills and knowledge required to engineer software systems from the initial planning and scoping of projects through to the process of development, testing, and delivery of the software system itself. The courses cover both engineering and working methodologies and you will study subjects such as project planning, software quality, specification management and research methodology.

The programme was developed to meet the needs of students, industry, and academia. It has a strong focus on preparing you for employment in both business and research organisations, and elective courses allow students to create their own skills profiles.

The programme consists of 120 credits and leads to a two-year Master's degree.

Programme manager: Mikael Svahnberg
Email: mastersoftwareengineering@bth.se

MBA PROGRAMME

60 credits

This programme is intended for professionally active engineers who wish to develop their knowledge within the field of management in order to move forward towards new professional challenges, in particular with regard to management duties within projects or line organizations.

We have students from different parts of the world on the programme. By working together on assignments and projects, you will not only gain an increased understanding of intercultural aspects, you will also develop an international network which will benefit you long after you have completed your studies. The programme consists of courses within the field of management such as strategy, finance, organization and leadership.

The programme consists of 60 credits and leads to a one-year Master's degree.

*Programme manager: Henrik Sällberg
Email: henrik.sallberg@bth.se*

MASTER'S PROGRAMME IN SPATIAL PLANNING

60 credits

If you are interested in societal issues and the built environment, and want to advance your undergraduate studies by specialising in planning, this is the right programme for you.

You will be introduced to the overall context of spatial planning, its cultural heritage and the various forms of governance in society. You will be trained to work in a multidisciplinary planning project and immerse yourself thematically in the various challenges of planning, including sustainability, equality, justice and the environment. In addition, you will apply your newfound knowledge by examining the outcomes of planning in different geographic contexts in order to develop an in-depth understanding of the social, spatial and environmental impact of policies and plans. The programme concludes with an independent project. Job prospects for graduates of the programme are very good.

The programme consists of 60 credits and leads to a one-year Master's degree.

*Programme manager: Lina Berglund Snodgrass
Email: lina.berglund-snodgrass@bth.se*

TEACHING METHODS:

Lectures

Seminars

Group work

Laboratory work

Independent study

MASTER'S PROGRAMME IN STRATEGIC LEADERSHIP TOWARDS SUSTAINABILITY

60 credits

This programme is a 10-month transformational Master's programme that focuses on advancing knowledge, skills and global networks, to enable the student to become a strategic leader in the co-creation of thriving, sustainable societies.

This programme revolves around two integrated themes. The first is Strategic Sustainable Development (SSD). SSD is about creating and executing economically viable approaches for evolving products, systems, organisations and communities in a way that supports global society's transition towards sustainability. Students will learn about the sustainability challenge and related opportunities, and how to use field-tested, time-proven and science-based methodologies to perform strategic sustainable development in any context, at any scale.

The second theme is Leading in Complexity. Leading in Complexity means to deal respectfully with the complexity of the world today and effectively facilitate change in this context. Students are invited to explore the meaning and implications of complexity for social change and their own leadership. They will learn and practise methodologies and develop skills for facilitating the change needed to build a vibrant, sustainable future together with others.

The programme consists of 60 credits and leads to a one-year Master's degree.

*Programme manager: Merlina Missimer
Email: merlina.missimer@bth.se*



STUDENT ACCOMMODATION

TRANSPORTATION CENTER

AN INSPIRING ACADEMIC ENVIRONMENT

Both of BTH's campuses are located by the sea, which creates a special atmosphere. On campus there are of course lecture halls and libraries, but also restaurants and cafes, student housing, a students' union, and the unique opportunity to swim in the sea; in other words – an inspiring study environment.



KARLSKRONA CITY

BTH CAMPUS
KARLSKRONA

RESEARCH

BTH is a university where the research is applied, i.e. the purpose of the research is to seek new knowledge with a view to a definite application. Research is conducted in collaboration with both business and industry as well as society, and always with a clear focus – that the results will contribute to solving the challenges facing society.

Research is conducted in the fields of engineering, IT, spatial planning, industrial economics, design and health sciences, all connected under the profile of applied IT, which researchers approach from different perspectives. BTH is among the world's most outstanding higher education institutions within software engineering and sustainable development. Research is conducted at two faculties and in 12 research fields.

Research is conducted in collaboration with both business and industry as well as society, and always with a clear focus – that the

results will contribute to solving the challenges facing society. BTH takes advantage of the benefits of being a small university, with close contacts between researchers and students, and between different research groups. We are keen to highlight our international character, but we also appreciate our ties to and presence in the region, where the environment inspires us to continue to conduct world-class research.

44 professors

90 PhD students

Around 10 PhD programmes

**Research accounts for
one-third of BTH's activities**

BTH IN THE RANKING LISTS

BTH is among the world's most outstanding higher education institutions within software engineering and sustainable development. In systems and software engineering, BTH is ranked sixth in the world and first within the EU, according to the Journal of Systems and Software.

BTH is also deemed to be the best in Sweden and in third place within Europe for sustainable development, according to a report from the Alliance for Global Sustainability.

“For me, BTH stands for a clear focus on applied research in collaboration with industry. It has given me and my colleagues excellent opportunities to conduct high quality research with high industrial importance in software development”.

Claes Wohlin, researcher in software engineering



RESEARCH FOR SOCIETY'S CHALLENGES

BTH conducts a considerable amount of research. Today, research and research studies account for one third of our activities. BTH is world-leading in at least a couple of its research fields. Here you can read about some current research projects at BTH.

THE NEXT GENERATION OF SUSTAINABLE PRODUCTS

The research focuses on the production of digital methods and tools to develop the next generation of sustainable products in the manufacturing industry. The initiative involves developing model-driven support system for product development, prototyping and visualization to become more efficient and value creation. The research is carried out in cooperation with a number of companies e.g. Volvo, Tetra Pak and GKN Aerospace.



Professor Tobias Larsson

VALUE FROM LARGE AND COMPLEX DATA

The research focuses on creating resource-efficient systems for the analysis of large amounts of data. The research is conducted in cooperation with a number of companies including Ericsson, Telenor and Sony Communications. BTH is considered to be one of the six in the world in software engineering. The area is of great importance in today's society, given the extent to which we rely on computers and functioning software.



Professor Niklas Lavesson

MINIMISING TRAIN TRAFFIC DELAYS

The research project aims to develop and demonstrate optimisation-based decision support for real-time train traffic management and it is funded by the Swedish Transport Administration. The decision support suggests how to reschedule trains in case of disruptions and computes the consequences of the suggested decisions.



Dr. Johanna Törnquist Krasemann

IMPROVING DATA COLLECTION AND INVESTIGATION

To increase the number of serial crimes solved, BTH is working together with the police in both designing and developing IT systems that provide increased knowledge of burglaries in permanent housing and how to improve investigations. Another objective is to develop a structured and permanent cooperation between police authorities.



Dr. Martin Boldt

IMPROVING ENTREPRENEURSHIP CONDITIONS

The research focuses on improving the conditions for technology, innovation and entrepreneurship. It shows the role technology and innovation play for the competitiveness of companies and also their influence on entrepreneurship and economy-wide growth. Part of the research also analyses how policy influences industry dynamics and innovation.



Professor Martin Andersson

MAKING HEALTH CARE MORE ACCESSIBLE

The research is concerned with the use of e-services to improve the activities and accessibility of future health care and nursing. The included projects address patient safety and health care quality, reception and participation, and the health of the elderly.



Professor Lisa Skär

PHD PROGRAMMES

Whether you want to deepen your studies or boost your career opportunities, BTH offers several PhD programmes to help you.

In 1999, after a positive evaluation by the Swedish Higher Education Authority, BTH was granted the right to give PhD programmes in engineering. Today we run PhD programmes in "IT with Applications" and "Planning and Management".

BTH also offers PhD programmes in other subject areas in collaboration with other universities in Sweden.

STUDY AT BTH

BTH's unique and pro-active approach attracts many students from all over the world. At BTH, we will encourage you to discover and develop your strengths and talents.

BTH, like all Swedish universities, has an open climate, with a strong focus on group work. This will provide you with valuable skills for the future. A global job market values students who are diligent, innovative and perceptive team players.

The education is student-centered and relations between students and teaching staff are informal. Personal initiative and independent thinking is encouraged.

You will be required to take an active role and contribute with your opinions and ideas at lectures, seminars and group discussions. Student input is unusually strong in Sweden. Universities are obliged to conduct course evaluations by students.

Studies at BTH will provide you with valuable skills for future careers, while gaining an exciting study experience with memories for life. At BTH we have close contacts and cooperation with business and industry and the public sector. This takes place at all levels – from undergraduate education to advanced research projects. Our students and researchers are actively involved in community development, and BTH has become a driving force in IT and telecommunications in the county of Blekinge.

TUITION FEES

Students with citizenship in a country outside the EU/EEA and Switzerland will be required to pay application and tuition fees. The application fee is SEK 900 (Swedish kronor). The tuition fee for studying at BTH for the academic year 2017/2018 is SEK 100 000 (Swedish kronor) including 60 credits or SEK 50 000 per semester including 30 credits. Students who are citizens of the European Union (EU), the European Economic Area (EEA) and Switzerland are exempt from paying application and tuition fees when applying to study in Sweden.

For students subject to tuition fees a number of scholarship possibilities are available. Further details are available at www.bth.se/eng/education/applicationandadmission/scholarships/.

STUDENT HEALTH INSURANCE

BTH offers quite extensive health insurance and national regulations give many international students access to Swedish health care. However, it is your responsibility as a student to make sure that you are covered by adequate health insurance or entitled to Swedish health care during your time in Sweden and at BTH.



“There are many different nationalities at Campus Gräsvik, Karlskrona. Because of this, the international student life is rich and there are many cultures to learn from”.

Alba Sotillo, student at BTH

Ana Maria Motoc from Romania



“BTH was a great experience and what I enjoyed the most was how open-minded people were. The students and teachers made me feel welcome and that I was truly a part of the educational system in Sweden. Coming from a different kind of educational system, for me this felt like a big opportunity.

I applied to BTH because I heard it had one of the best programmes in my field, spatial planning. Also some of my friends have been here before and I have heard only good things about BTH and Karlskrona.

The education here helped me expand my views on the profession I choose and how it is done in a totally different system, which for me is very helpful as I plan on working around the world.

For me, living in Sweden/Karlskrona is very different from back home. There is a totally different culture here, but I'm not saying it in a bad way. I like living here; everything is more calm, more relaxing. I enjoy the fact that Sweden has a lot of outdoor areas where you can take a walk and enjoy the beautiful views. The weather is a bit tricky and sometimes it was too cold for me, but eventually I got used to it”.

Kevin Hang from France



“My home university is located in Paris. Here at BTH there are not too many students which is a good thing in my opinion. Also, the university offers an excellent working atmosphere. I really like the colourful library. Further more, the campus is well situated near the water which offers a

very nice panoramic view. Many events are organised by and for students, which is always good if you need a break from classes.

I first applied to BTH because of its courses in software engineering. This is the first partnership year between my home university (ECE Paris) and BTH, and I wanted to be the first guy from there to study here and give future students my feedback.

I really enjoy the courses at BTH. The teachers are available for you to ask many questions, whether it be in class or by email.

Sweden is a really beautiful country. It has always appealed to me so when I got the opportunity to spend another semester abroad, I immediately jumped at the chance!

I think Karlskrona is charming because of its size which I really like. It's so tiny but in a good way. I live near the centre so almost everything is in reach with a stroke of a paddle, if you know what I mean.

The only thing I don't like is the weather. Some days, it can be really windy and cold but maybe it's because I'm used to living in a tropical climate”.

Ehsan Zabardast from Iran



“There are so many great things about BTH. It is really hard, and somehow impossible, to pick a favourite. I particularly love the location and the atmosphere. It's stunningly beautiful; it motivates you to do more!

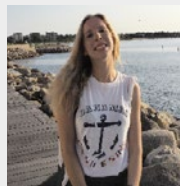
BTH is well-known for its applied IT and innovation. That was more than enough for me to apply here.

I have to say, I'm quite satisfied with the way they teach here. The courses are really demanding and the lecturers are tough. I gained more experience here than I ever imagined I could.

Karlskrona is a beautiful city. It's so peaceful. I'm enjoying every second of being here. Sweden is great; if you have a chance to live here, you should take it. There are so many things to see and explore”.

THE STUDENTS' POINTS OF VIEW

Magdalena Golan from Poland



“An international society with students not only from Sweden and countries in Europe, but from all over the world. The location and amenities of the campus are also attractive.

One of the main reasons I chose to study here was the great reviews from my friends, who had already been here on an Erasmus programme: They said that it was one of the best options for spatial planning students, if you really want to learn.

My second reason was that I had never been to Sweden before, so it was interesting for me to visit a “new” country. The topics we discuss in class are more or less the same as in Poland. The difference here is that the studies are more practical – conducting projects and trying to find solutions to real problems.

I like the fact that it's a bit different from Poland – it allows me to compare many issues between the two countries.

Karlskrona is a small city, which allows students to integrate more and to get to know each other better”.



OTHER USEFUL LINKS WITH GENERAL INFORMATION ABOUT EDUCATION IN SWEDEN:

- Swedish Institute (SI): www.si.se
- Swedish Higher Education Authority: english.uka.se
- Study in Sweden: www.studyinsweden.se
- General information about Sweden: www.sweden.se

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