



li.u

LINKÖPING UNIVERSITY

28 WAYS TO CHANGE THE WORLD

*Groundbreaking international programmes
at Linköping University 2020*





HAVE YOU GOT WHAT IT TAKES?

Do you want to be involved in shaping the world? Do you place innovation above tradition, and results above prestige? Do you prioritise lab time above sleeping in? Do you want to take your personal passion to a new level, delivering benefits to far beyond your own sphere? Can you embrace collaboration? Do you feel like smashing some boundaries?

If this is you, we'd like to invite you to join us on a journey towards new discoveries. Let us introduce you to our 28 international programmes. Each of them is a springboard to an important career – and a life full of challenges and meaning. Today and tomorrow, for you and the world.

WELCOME TO LINKÖPING UNIVERSITY.

Great! Then we ha

The spirit of innovation

OVER THE YEARS our graduates and researchers have developed ideas that have led to successful spinoff companies. And we're sure there will be many more. The purpose of LiU Innovation is to ensure that ideas based on knowledge from LiU develop and benefit society. LiU Innovation assists students, researchers and teachers in the development from concept to finished product or service. In 2017, 19 new companies were founded. The company Epishine has developed a method for producing printed organic solar cells, and has created the world's most scalable, resource-efficient and competitively-priced solar cell. The technology is based on more than 20 years of research into organic electronics at LiU.



Sudanese voice for women's rights and honorary doctor

RESEARCHER NASHWA EASSA has a vision – that women in Sudan will gain equal opportunities for education and research as men. She has been awarded an honorary doctorate at Linköping University.

“If I can contribute to making a positive change in the life of a single woman, it will give me enough inspiration to continue my work with gender equality”, says Nashwa Eassa.

She lives and works in Sudan and has received several international prizes for her physics research. Between 2005 and 2007, she took an international master's

programme in material physics and nanotechnology at LiU.

She hopes that the honorary doctorate from LiU will bring more attention to her work with gender equality in Sudan and other African countries.

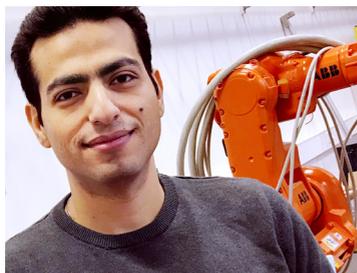
“Many women give up their academic career when they get married. They start a family and feel pressure from family and society to stay at home and care for the children. Support from other women in academia may be decisive to them continuing their career”, says Nashwa Eassa.

“By seeing the world as a place for cooperation we can change things and address challenges facing society.”

When **Stefan Holmlid** was about to start his studies in the late 1980s, LiU was the only university that offered design of graphical user interfaces. Less than ten years later he started Sweden's first master's programme in interaction design, and LiU took the lead in a field that was normally taught at design schools. Today we are at the forefront of design research.



ve what you need.



Key to the industry

LINKÖPING UNIVERSITY (LIU) was founded because the Swedish business sector required a better-trained labour force. And to this day, we are driven by carrying out research and offering education that satisfies genuine needs. A natural result of this ambition is our close collaboration with major international companies such as Saab, ABB and the Swedish National Road and Transport Research Institute. This means that you, as a student, get to address the challenges facing society and the business sector, and contribute with new solutions – from day one.

Working with ABB Corporate Research, industry-based doctoral student Mohammadali Honarpardaz has made it possible for non-experts to construct a robot-based assembly system in one day. A task that previously took at least six months and required a wide range of expertise.

The new method includes the automatic and rapid design of robot fingers for different types of task. A robot hand formed as a simple gripper with just two fingers is enough for many different jobs in industrial applications.

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Natural sciences, bachelor

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SKILLED AND THRILLED

Kristin

Germany – Ethnic and Migration Studies

A rare programme

I always wanted to study a master's programme in the field of migration. However, those programmes are rare in Europe. LiU was one of very few universities with such an offer and it had the most interesting syllabus by far. The topics, the teaching methods and the structure sounded the most promising to me.

Adapting to a new environment

The class size is small, which I love. A seminar with around 30 people creates a familial atmosphere and a good base for fruitful discussions. This is especially important when you deal with phenomena like migration, racism or social inequality.

Top tips!

Don't be afraid about the reading lists. They can be extremely long in this programme. But it also means that you will learn a lot. Don't get demotivated when you see that there are 12 texts for the next lecture listed. Just read as much as you can, but don't forget to have a private life.

Hanna

Brazil – Sustainability Engineering and Management

Uniqueness

I chose LiU because of the unique features of my programme which combines management with environmental issues and energy systems. This in combination with innovation and a close connection to industry was very attractive to me.

A global approach

The seminars give us an opportunity to talk about global issues, everyone can present their views and share their thoughts. Since we are from all over the globe, it is a great opportunity to learn more about how different cultures deal with the same issues.

Creating a cleaner world

I want to work with developing countries to build efficient and sustainable energy systems to power future technologies. I believe that my studies at LiU will give me the required tools to address global problems such as affordable and clean energy and make a direct impact on people's lives by changing the ways products are manufactured and consumed.

Ibikari

Nigeria – Experimental and Medical Biosciences

Set your own goals

When I decided to study in Sweden, I was impressed with the syllabus and course details of my programme at LiU. There was a large selection of courses available and the opportunity to tailor my study plan to suit my study goals.

Approachable but hard work

The teaching style is informal as there is no hierarchy. It makes the lecturers more approachable. There is a lot of laboratory work, literature review and problem-based learning. We also get to oppose each other's reports besides the review by an expert in the field. This has greatly improved my ability to create as well as analyse scientific reports. The workload is often heavy, but the student services and facilities go a long way in making it easy to deal with the workload.

Equality and Sustainability

I intend to attain my goals by using and promoting methods that are sustainable in an environment that promotes equality.



PROTECTING THE BLACK RHINO WITH TECHNOLOGY

The rhinoceroses in Africa are in danger of extinction. They have very poor eyesight and are easy prey for poachers who can make huge profits from their horns.

THE HORNS ARE SAID to have medical value, and can be carved into handles for traditional daggers.

For the park rangers in the national parks of Africa, the situation resembles a war, where they, as well as the poachers, use automatic weapons. And it's not only the rhinos that are being killed – many humans have died too.

ONE PERSON who is fighting to change this is Professor Fredrik Gustafsson from LiU. He researches on security and emergency management, and has seen that the technology used to protect critical infrastructure can also be used to save the great animals of the savannah. He becomes one of the project managers of Smart Savannahs, a project where businesses, international organisations and others are partners. It will make use of new technology to make national parks more secure.

First in line is the Ngulia Rhino Sanctuary in Kenya, where a refuge has been created for the critically endangered black rhino. The park rangers get smartphones and tablets with newly developed software. Using these they can easily enter their observations of the rhinos, and of possible threats, and communicate with other rangers and with the management. The phones

will be connected with radar and sensors, to make surveillance even more effective. Prior to implementation, all technology is tested in Sweden's Kolmården Wildlife Park.

And it's working. Poacher numbers are down, and now the rhino population in Ngulia is growing. Kenya is currently the only African country where rhino numbers are on the increase.

THE IDEA IS that the surveillance will be so secure that the poachers will not even dare to enter the sanctuary. And that it will soon be possible to use the technical solutions in national parks worldwide, to protect endangered species.



Professor Fredrik Gustafsson, together with park rangers in Ngulia Rhino Sanctuary, Kenya.



Step into our glob

Why do cities become segregated?

A NEW master's programme combines complex data analysis with advanced calculation methods, to secure deeper and firmer understanding of important social, political and cultural processes. The researchers at IAS come from several academic disciplines. Through a combination of statistical analyses of big databases, detailed micro-research, computer simulations and computer visualisations, they seek to explain why people do what they do and the societal consequences of their behaviour.

The Institute for Analytical Sociology (IAS)



Ahead of the world's needs

TWO YEARS before the largest refugee crisis in modern times, LiU established the master's programme Ethnic and Migration Studies. The programme considers questions such as the causes of migration and perceptions of ethnicity, gender, work, citizenship, welfare and culture, and has attracted a large number of applicants. "These students have received an education that prepares them for a broad range of critical and beneficial activities in the fields of migration, asylum, integration and diversity. The need for such expertise is increasing," says Stefan Jonsson, professor in ethnicity at REMESO, the Institute for Research on Migration, Ethnicity and Society.

Department of Social and Welfare Studies (ISV)

al solutions plant.



Stefan Jonsson,
professor in ethnicity
at REMESO

"I believe the university must be a place where people learn to question historical narratives. This is the basis of a more enlightened, democratic future and it's incredibly important that we preserve this."

Accelerated development of super-green fuel

FOR THE FIRST TIME, researchers demonstrate a fuel cell that uses fuel from a forestry raw material. Researchers from the Laboratory of Organic Electronics at LiU have developed a fuel cell that uses lignin, a cheap by-product of paper production and one of the most common biopolymers. The chemical energy of the fuel is converted

to electricity without carbon dioxide being formed, making it possible to produce electricity without CO₂ emissions. This super-green fuel and the technology are both cheap and scalable – next up are improvements and optimized functionality.

Department of Science and Technology (ITN)



Xavier Crispin, Canyon Che and Mikhail Vagin have proven that scientific breakthroughs actually might grow on trees.

Addiction: To cure addiction

MARKUS HEILIG, professor of psychiatry who in 2015 left a top position in the United States for LiU, has had great success with his research on drugs and alcohol dependence, and was awarded with the Söderberg Prize in medicine for 2018. His projects include a clinical study that paved the way for the treatment of heroin addiction with the drug buprenorphine. The team's current research is centred around processes that guide the choice between alcohol and healthy, natural rewards. "Most of our work remains to be done. But I hope that the prize can set a spotlight onto the needs of addiction patients, and the ways in which these can be met through research," says Markus Heilig.

Department of Clinical and Experimental Medicine (IKE)

BRING GRIT, THE GLOORY.

Tina & Mikael

We chat with two of our supportive teachers about what it takes to make it.

Challenging established ways of thinking to address global challenges requires a strong focus and plenty of ambition.

“COME WITH AN OPEN MIND, be curious about new issues, be prepared for an interdisciplinary approach and for working as a team. And most importantly, remember that your own level of ambition will determine your result, as there is high proportion of independent work. That’s my best advice for anyone applying to our international master’s programmes, whatever their academic background,” says Tina Simone Neset, senior lecturer at the Department of Thematic Studies – Environmental Change.

In other words, completing a master’s at Linköping University with good grades requires serious commitment – to say that it’s full-time studies is not an exaggeration. The interaction with fellow students is also significant for studies at LiU.

“We work a lot in project groups, where the students get together to address a challenge or an issue

from the industry. To work in a group, you have to plan your time well, and be able to cooperate with others. This method is new to many of our students, but it also develops skills that are valued by potential employers”, says Mikael Segersäll, who teaches in the master’s programme Mechanical Engineering.

OF COURSE the teaching staff, including the professors, are present and very much available throughout the process, both as support and as a sounding board, but it’s the students themselves who ensure that progress is made. Therefore, success relies on being able to communicate well within the group, as well as on the ability to immerse oneself in new fields and to solve problems. This problem-solving ability is one of the traits that has brought LiU alumni success and a good reputation worldwide.

Many of the master’s programmes

relate to current and important issues – such as Science for Sustainable Development. It includes subjects like global resource use, climate science and policy, and other issues that span over social and natural science. And it requires an interdisciplinary approach – again, a LiU hallmark. Most teachers at LiU are active researchers involved in national or international research projects, which means current issues in research are addressed in courses and often picked up in master’s theses.

“ALL OF MY COLLEAGUES are very involved in the students’ successes, while also managing their own research projects. This means that we give our students the tools to succeed with their studies, as well as the knowledge that’s relevant right now, and in your life after graduation. But it’s important that you have a strong first degree when you come here”, says Mikael Segersäll.

Yes, it’s a tough, but an incredibly fun and rewarding time, many alumni report. Tina Simone Neset concludes: “For your master’s, choose a topic that you’re genuinely interested in, add some hard work and you’ll do fine.”

Mikael Segersäll teaches in the
master's programme
Mechanical Engineering.

Tina Simone Neset
is senior lecturer at the
Department of Thematic
Studies – Environmental
Change.



1 Aeronautical Engineering

Degree: Master of Science with a major in Aeronautical Engineering **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/aeronautical

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Learn the intricacies of aeronautics in the aviation capital of Sweden.

Linköping is one of few places in the world where aircraft are designed and manufactured. There are several aeronautical and military aviation businesses in the city, such as Saab, the producer of the Gripen aircraft. As a student, you will benefit from our location through close research collaboration between the university, the aerospace industry and our industry-affiliated teachers.

This master's programme offers a holistic perspective on the intricacies of aircraft design, covering the entire process from the conceptual to the detailed design phase.

An aircraft represents a complex integration of systems from various technologies and disciplines, including aerodynamics, structure, propulsion, actuation, and other on-board systems. All these disciplines come together during the latter stages of the programme, when students are challenged to design, build and fly an aircraft. The programme has three profiles:

- Aircraft Systems Design
- Aerodynamics
- Aircraft Structures

Modelling and simulation, including extensive use of contemporary engineering design tools, are fundamental elements in all these profiles.

After graduation you will be prepared for a career within the aerospace industry, ranging from conceptual aircraft design to aircraft engineering. You will be capable of taking on leading roles and working independently. Alternatively, you can work in related fields such as vehicle or wind turbine engineering, or you may opt to continue your career within academia.

Dona

India - Class of 2016-2018

I think what is different about the Aeronautical programme is the industry-oriented projects that we get to work on. In the past year, we have redesigned an existing passenger aircraft, designed a new 'middle of market' airplane as a competition for Airbus, designed an electric ultralight aircraft, etc. Not only are they concepts that the aviation industry is now working on, but some are even futuristic – it will be years before some of the concepts are manufactured.



2 Biomedical Engineering

Degree: Master of Science with a major in Biomedical Engineering **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/biomedical

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Improve human health through innovative technology.

The intersection of natural science, medicine, and technology is a dynamic place. Driven by demands for equitable and efficient health-care and ever-improving quality of life, technological development benefits humanity and helps create a sustainable future. With a history of pioneering interdisciplinary research and education, Linköping University provides premier opportunities for developing a fundamental and functional understanding of biomedical engineering.

Based on solid mathematical and physical foundations, useful medical knowledge, and a vivid engineering spirit, we set out to

develop technology that improves health and healthcare – and makes a difference. This master's programme will expand your skills and knowledge in engineering, mathematics, physics, and multi-dimensional signal generation and analysis, combining medical informatics with biomedical modelling applied to human anatomy and physiology. An in-depth specialisation is offered along three tracks: Medical Informatics, Biomedical Signals and Instrumentation, and Medical Imaging.

As a graduate, you will have the skills to formulate and solve engineering problems in the biomedical

domain, implement and operate processes and systems, and evaluate engineering tools applied in medicine. Our biomedical engineers are employed across the industry, in hospitals, government agencies, and research facilities, designing various materials, devices, algorithms, processes, or systems. After completing this programme you will also be well prepared for further studies towards a doctoral degree.

Martha

Mexico - Biomedical Engineer

Back home I studied cases using the problem-based learning method but not that frequently. During my programme I used this method in so many courses that nowadays I can use it to tackle even the most challenging cases. In Mexico, you need to talk formally to a teacher while in Sweden the relation with teachers is more friendly. Now that I am a supervisor at work, I try to avoid this extreme formality between colleagues.



3 Communication Systems

Degree: Master of Science with a major in Electrical Engineering **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/comsys

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Cutting-edge research into 5G network technology and beyond.

The exponential growth in the use of communication devices in our increasingly connected society needs skilled engineers to drive technological development and inspire new inventions, such as new applications for the Internet of Things, or ways to achieve higher user performance despite limited wireless resources. Linköping University is at the forefront of communications research. We are known for our seminal research on massive MIMO systems, in collaboration with Ericsson and Nokia Bell Labs, among others. We have a popular YouTube channel and

are members of the Swedish government's strategic initiatives ELLIIT and Security-Link. Our campus is conveniently located near Swedish high-tech companies Ericsson and Saab, as well as several exciting start-ups.

This master's programme offers students a broad curriculum in communication systems, focusing on the fundamental principles of systems engineering and the design of digital and wireless communications systems. Topics covered include communication theory, coding, modulation, signal processing, artificial intelligence, and

the design and optimisation of communication systems and networks. In the latter stages of the programme students will be challenged to build a communication system.

Our graduates are prepared for a career in engineering within different branches of communications. They work in diverse areas as senior software developers, technical coordinators for product development, and researchers on defence communications. Alternatively, you may continue conducting research leading to a doctoral degree.

Ching-Hsiang Yang

Taiwan - Current Student

Most people go for exchange to the US; I just wanted to go see how it is and experience living in Northern Europe. I have different experiences and they are very valuable. The professors always gave us information on further research and that helped a lot. They have experience in the field and give us an insight into what is going on right now and what will be the future innovations.



4 Computer Science

Degree: Master of Science with a major in Computer Science **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/compscience

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Shape the forefront of modern software and computer systems technology.

Computer science and technology play a key role in every part of the modern world. It is also one of the most dynamic and expansive fields of science. Linköping University is home to one of the most important centres of computer science and engineering in Northern Europe; with 16 full professors, it is renowned for top-quality research and education. Additionally, neighbouring our main campus is Science Park Mjärdevi, an incubator with 300 knowledge-intensive companies where many of our alumni are now employed, or have gained experience.

This master's programme offers

you the knowledge required to master the theoretical foundations of the field and be able to apply and integrate them with other technologies. The programme has five specialisations:

- Visualisation and Computer Graphics
- Artificial Intelligence and Data Mining
- Computer Networks
- Distributed Systems and Security
- Embedded Systems
- Programming and Software Methods

It is not mandatory to follow a specialisation; you may tailor your own combination of courses.

Our graduates are prepared for careers at the forefront of modern software and computer systems technology, as operating system designers, internet security specialists, or working with visualisation in fields such as medicine, business, or social sciences. You may also opt for a career in research via continued studies towards a doctoral degree.

Rasmus

Sweden - Software Developer

I have learned a lot about restructuring existing code to be more effective and better structured, and also to create programmes from scratch to suit specific needs and to follow certain restrictions from users. I believe that most companies associate LiU with quality. By quality I mean graduates that actually are knowledgeable and have a personal drive to continuously learn new things and to never stop improving themselves.



5 Electronics Engineering

Degree: Master of Science with a major in Electrical Engineering **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/electronics

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Advance far beyond the curriculum of traditional electronics education.

This master's programme provides a competitive education in digital, analogue and radio-frequency (RF) integrated circuits (IC) and System-on-Chip (SoC) design, combined with in-depth knowledge in signal processing, application-specific processors, embedded systems design, modern communications systems, and radio transceiver design.

The programme requires a broad spectrum of knowledge and skills across many fields within engineering and science, not conventionally offered in electronics education.

Students can choose between two major tracks in either SoC design or Analogue/Digital and RF IC design. We offer several large design project courses providing excellent opportunities to improve design skills. For instance, students who take our VLSI Design course will design real chips using standard CMOS technology that will be sent for fabrication, measured and evaluated in a follow-up course.

This programme is organised by several strong divisions with excellent teaching experience, world-class research activities,

state-of-the-art laboratories and design environments, and close research collaboration with many companies worldwide.

Our graduates can expect excellent career opportunities in major research and development centres, both in the industry and in academic institutions worldwide. You will be specifically trained and qualified to work as an IC design engineer in major semiconductor, IC and telecom companies. You will also be well prepared for further studies towards a doctoral degree.

Bo Sun

China - Development Engineer, Arccore AB

I like the way the university is set up, there is not too much pressure and the emphasis is on knowledge. If you fail an exam there are chances to try again. It's about improving your knowledge, not about simply passing tests. The software we used to design the chips is the same software that companies like Intel use. I can start working immediately because I already know the software.



6 Industrial Engineering and Management

Degree: Master of Science with a major in Industrial Engineering and Management **Credits:** 120
Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/industrial
Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Prepare for a leading role by integrating engineering, management and mathematics.

Linköping University has been a pioneer in industrial engineering and management education since the 1970s. Thanks to our qualified teachers, we can offer you interesting challenges and personal development to help you reach success. Besides lectures and laboratory work, we expect you to actively participate in projects, writing papers, essays and reports, and presenting minor research tasks. This is demanding, and for good reason. We take education seriously and want your time with us to be as meaningful as possible.

This master's programme provides knowledge in industrial engineering and management through a multidisciplinary approach, giving you the skills to adopt changes in the industrial environment in a responsible and efficient manner. Core courses in project management and organisation, production planning and control, and quality management will help put your engineering skills in an industrial management context. Choose between three profiles: Innovation Management, Operations Management and Quality Management.

Our graduates are enjoying interesting careers as R&D managers in tech-intensive companies, or as CTOs in smaller companies and start-ups. You will be qualified for engineering positions with businesses and authorities involving consulting, investment strategies, production planning and control, lean, quality, and supply chain management. You will also be prepared for an academic career beginning with doctoral studies.

Michael

Germany – Supply Chain Management Trainee, Goodyear Dunlop Tires

The programme really provides a great opportunity to grow in an environment characterized by project work, international teams, and constant challenges and fast-changing demands, which is very similar to the work environment that awaits us after the studies. This helps me every day to cope with real-life challenges that I face by working in a highly complex and demanding environment.



7 Mechanical Engineering

Degree: Master of Science with a major in Mechanical Engineering **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/mechanical

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Realise complex technical products and industrial processes.

Mechanical engineers are expected to be creative, have broad knowledge and work as members of multidisciplinary teams. With this master's programme, you will become a problem-solver with a holistic perspective, ready to take part in today's product development to create tomorrow's sustainable society.

Choose among the following specialisations:

- Applied Mechanics – classical and modern applied mechanics with a strong focus on the modelling and simulation of solid mechanics, fluid dynamics and thermodynamics.
- Engineering Design and Product Development – modern and advanced approaches in CAD, design optimisation and product development.
- Engineering Materials – deep knowledge about the behaviour of classical metallic engineering materials, but also about plastics and new emerging materials.
- Manufacturing Engineering – covers aspects from supply chain level down to automation and manufacturing processes. Also learn about the factories of the future.
- Mechatronics – how to design and analyse controlled mechanical systems such as hydraulic systems.

After graduation, you will have excellent opportunities for employment in almost all sectors of the engineering industry. You will be able to take part in multidisciplinary design processes where technical as well as economic, environmental and sustainability requirements are satisfied. You could be involved with the generation, distribution and use of energy; the design and development of machines, vehicles and transportation systems; or the processing of materials. In addition, you will be prepared for a research career.

Sabari

India - Current Student

I've never regretted studying at LiU. I really like that we had a lot of group work; this helped us to understand different perspectives and working styles of people from different nationalities and helped us to investigate more in depth about the topic. The professors are really informal and are very open to plenty of doubts and discussions.



8 Sustainability Engineering and Management

Degree: Master of Science with a major in Energy and Environmental Engineering **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/suseng

Tuition fees: approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Create innovative sustainable solutions in one of the fastest growing business sectors.

The exploitation of natural resources has severe environmental implications, such as the emission of hazardous substances and resource scarcity. This has incentivised governments, companies and organisations worldwide to find ways to use resources and energy in more intelligent and efficient ways. This master's programme deals with the multifaceted challenges of developing products, services and technical systems that contribute to increased resource efficiency and sustainability.

You will learn how to combine a multidisciplinary system perspective

with skills in modern environmental and energy engineering. The programme joins the perspectives of two departmental research groups which are developing system solutions and producing internationally renowned research in renewable energy and biofuels, energy efficiency, future waste management systems, urban and industrial symbioses, integrated product service offerings, and corporate environmental management. Linköping University is hosting a national research excellence centre on biogas production and utilisation, and is also coordi-

inating the Mistra REES (Resource-Efficient and Effective Solutions) programme. This means students will have the chance to see how environmental technology works in practice.

Our graduates are qualified for a wide range of environmental engineering positions; in energy consulting, energy distribution and generation systems, renewable energy, clean technology, environmental consulting, or waste management and recycling. You can also choose a career within academia, pursuing a doctoral degree.

Joakim

Sweden - Associate Professor and Programme Director

In the master's programme Sustainability Engineering and Management, you will develop frontier knowledge and skills to address the challenges of developing resource efficient and sustainable products, services and technical systems. Strategies and measures for using materials and energy resources in more efficient and intelligent ways constitute the core of this programme.



9 Statistics and Machine Learning

Degree: Master of Science with a major in Statistics **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/statistics-machine-learning

Tuition fees: Approx. USD 10,500/EUR 9,000 (SEK 95,000) per academic year (for non-EU citizens)

Unleash the power of data and statistics to help you make the right decisions.

The rapid development of information technologies has overwhelmed society with enormous volumes of information generated by large or complex systems from telecommunications, robotics, medicine, business and many other fields. This master's programme meets the challenges of learning from these complex volumes by means of models and algorithms from machine learning, data mining and other computer-intensive statistical methods.

By joining us, you will increase the efficiency and productivity of the systems and make them smarter and more autonomous. We inte-

grate statistical modelling and analysis with machine learning, data mining and data management to give you unique skills.

The programme focusses on modern methods from machine learning and database management that use the power of statistics to build efficient models and make reliable predictions and optimal decisions. You will gain deep theoretical knowledge as well as practical experience from extensive amounts of laboratory work.

Depending on your interests, you will work towards your thesis at a company, a governmental institution or a research unit at LiU.

There you can apply your knowledge to a real problem and meet people who use advanced data analytics in practice or you can go deeper into the research.

There is a rapidly increasing demand for specialists who are able to exploit the new wealth of information in large and complex systems. Business, telecommunications, IT and medicine are just a few examples of areas where you will be wanted for advanced analytical positions. You will also be well prepared for an academic career, should you choose to continue into research and pursue a doctoral degree.

Jithu

India - Volvo Data Scientist

Everything about this programme in LiU was impressive, studying, working in projects with people from other countries, the timeline we have for the final thesis. The most unique part of this programme is the right blend of Statistics and Programming courses which I haven't seen in many other similar programmes both in US as well as in EU. I am happy with the choice I made and I have no regrets.



10 Intelligent Transport Systems and Logistics

Degree: Master of Science with a major in Transportation Systems Engineering **Credits:** 120
Duration: Two years **Pace of study:** Full-time **Campus:** Norrköping **More info:** liu.se/transport
Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Join our world-leading research into future transport systems and smart cities.

Transport systems are undergoing a huge transformation. Autonomous driving is becoming a reality, and the electrification of roads has begun. Vehicles are connected to each other and to the infrastructure in smart cities, enabling the collection of all sorts of data for the analysis and management of the movements of people and goods.

This programme requires strong mathematical and analytical skills – programming experience is a distinct advantage. Focus is on the integration of IT and data science into transport and logistics systems, with the aim of increasing efficiency, safety, mobility and cus-

tomers satisfaction while reducing environmental impact. The programme provides the tools to understand, develop and control future transport and logistics systems through the use of optimisation, simulation, data analytics, and communication networks. You will study traffic network modelling and prediction, logistics supply chain modelling, mobile telecommunications, road traffic safety, and project management.

As the programme progresses you can choose courses from the two profiles, Traffic and Logistics. Linköping University is coordinating the Swedish National Post-

graduate School of ITS (Intelligent Transport Systems) and is a member of ITS-EduNet, a European network for training and education on intelligent transport systems.

Thanks to your engineering profile and transport systems expertise, you will have a wide choice of challenging career opportunities. You may become a traffic engineer or a logistics manager, or develop systems for traffic monitoring or autonomous driving. Alternatively, you may continue your research via a doctoral degree.

Daniel

Czech Republic – Traffic Analyst

The programme helped me in many ways to pave the beginning of my career path. Most significantly I learned to identify problems and come up with solutions. Many projects within the programme did not have specified boundaries so there often was room for some creativity. That's something I value highly. It helped me to gain confidence and believe in myself. The work definitely improved my problem-solving ability.



11 Design

Degree: Master of Science with a major in Design **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping/Norrköping and Online **More info:** liu.se/mscdesign

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Tackle societal challenges, ranging from food waste to collaborative welfare using interdisciplinary design.

Linköping University is one of Sweden's leading design universities, with world-class research in areas such as design for services, sustainability and visual media. We welcome applicants from different educational backgrounds, with a desire to develop design beyond materials and disciplines.

This master's programme incorporates established and innovative design concepts in a unique interdisciplinary setup. Studio courses form the backbone of the programme, providing the fundamentals of working with societal challenges. The programme features

three design tracks, allowing you to develop your skills within an area of speciality:

- Sustainable Futures – design of sustainable systems
- Transformative Service – design and innovation for the service sector
- Visual Media – design of interactive visual environments

You will learn to navigate complex contexts and create sustainable solutions, developing skills and knowledge in participatory design and co-creative practices. You will

interact with companies, organisations and entrepreneurs, in collaborations across professions and campuses.

Our graduates are prepared for advanced careers as designers in interdisciplinary design environments. You may find employment as an interaction designer or product designer, designing for service or policy, in the public or voluntary sector, as an entrepreneur or with start-ups. You will also be qualified to continue postgraduate education at doctoral level.

Stefan

Sweden – Professor and Programme Director

Design has become a recognised aspect of good development for welfare, sustainability, service and systems. Our master's programme in design starts with this observation, and builds on the strong foundations of LiU in design research, as well as in research on sustainability, service and visualisation.



12 Ecology and the Environment

Degree: Master of Science with a major in Biology **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/ecology

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Make a difference – contribute to an ecologically sustainable future.

In a world facing complex environmental problems, ecological knowledge is fundamental to finding sustainable solutions. If you are interested in nature and want to address global challenges, this programme is for you. By applying ecological theories and methods, you will learn to identify crop management strategies for biological control, evaluate the preservation status of nature reserves, and analyse regional ecosystem services and how they interplay with social and economic systems.

Ecology courses at LiU are based on cases where you work closely with fellow students, teachers and researchers in a collaborative atmosphere. Throughout your studies you will be trained in experiment design, data interpretation, systems thinking, theoretical modelling, and scientific communication. During a six-week internship and later when writing your thesis, you will practice your skills and start to develop a professional network. The thesis is performed as a one-year research project,

sometimes in collaboration with organisations and companies in the Nordic countries. It may target e. g. biodiversity, species interaction in food webs or nutrient cycling.

As a graduate you may find employment with consultancy firms or government agencies, managing populations and ecological communities for the sustainable use of natural resources in forestry, agriculture, and shallow waters. You will also be well prepared for further studies towards a doctoral degree.

Klas

Sweden - Ecologist/Conservation Expert, Väg & Miljö

Once during a very early morning excursion our teacher was teaching about species connected to hollow trees, when he stuck his hand into a hollow tree and suddenly screamed “aaaaargh”. And all of a sudden, he had a bunch of very awake students! Apart from great teachers my time at LiU has given me many things that during my years seem to be a “LiU-thing”, for example how to explain evolution to people who have little or no knowledge in the subject.



13 Science for Sustainable Development

Degree: Master of Science with a major in Environmental Science **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/sustainabledevelopment

Tuition fees: Approx. USD 12,000/EUR 10,500 (SEK 110,000) per academic year (for non-EU citizens)

*Be part of the solution
for a sustainable future.*

The future needs sustainable solutions to societal challenges. This programme offers a holistic interdisciplinary approach to current societal problems, such as climate change, natural resource exploitation, increasing energy demand and inequality. The master's programme allows you to explore the complexity of creating sustainable societies in alignment with the principles of sustainable development and Agenda 2030.

The programme addresses global environmental changes and societal transformations. It will challenge you to undertake critical analysis of present and future environmental concerns, apply scientific knowledge across academic disciplines, and develop interdisciplinary

competence. Your training will enable you to develop skills to interpret, design, communicate, and implement solutions to sustainability and environmental challenges, which will be indispensable for your future career as a sustainable development expert.

Core courses have been designed to give you a wide perspective on environmental issues, and at the same time, provide opportunities to deepen your theoretical knowledge and practical skills on specific scientific fields. Field trips, laboratory and GIS exercises, spatial analysis in the Norrköping Decision Arena, role-play activities, study visits to authorities and businesses in the environmentally-progressive

Östergötland province are just some of the ways in which you will learn about sustainable solutions in practice. Sustainability issues bridge academic disciplines and require diverse expertise. Few universities offer such an interdisciplinary perspective in environmental sciences as LiU does.

The programme provides a strong basis for a career related to sustainable development and environmental sciences. Our graduates have positions in research institutes, universities, environmental organisations, businesses, NGOs, river basin commissions, consultancies, power companies, intergovernmental environmental agencies, and doctoral programmes.

Zhong Li

China - Start-Up Creator

My study experience at LiU has dramatically influenced my values, my career and my life. All the jobs and projects I have been doing since then are somehow related to environment and sustainability issues. I think it is very challenging especially in China, a country currently facing serious environmental problems. It gives huge self-satisfaction when you see that you have influenced some people and made a little positive change.



14 Applied Ethology and Animal Biology

Degree: Master of Science with a major in Biology **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/ethology

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Investigate animal behaviour and biology up close.

This master's programme is offered in collaboration with Kolmården Wildlife Park, one of the largest and most renowned zoos in Sweden. Several teaching sessions are held at the zoo, where students acquire first-hand knowledge from experienced zoo staff.

The programme deals with animal behaviour and biology, including problems associated with keeping animals in captivity. You will study theory and methods of applied ethology and gain a good working knowledge of the biology of stress and its role in animal wel-

fare, the effects of domestication on animal behaviour, the physiology of behaviour, and conservation biology. In courses such as Applied Ethology, Stress and Animal Welfare, Behavioural Neurobiology, Behaviour Genetics, Zoo Biology, Primate Ethology, and Conservation Biology, you will have the opportunity to participate in hands-on projects involving studies of animals in captive environments.

The key part of the programme is a one-year degree project where you are trained to plan, implement and present a research project

within the scientific field of the programme.

Our graduates have a deep understanding of animal welfare and conservation. You may become an animal welfare inspector, wildlife conservationist, or an advisor for zoos or private businesses. Many of our alumni work for governmental and international animal or environmental agencies. You will also be qualified to pursue doctoral studies.

Thorbjörn

Germany - Doctoral Student

This programme gave me a good overview of ethological topics. It was interesting and fun to get hands-on experience with various species ranging from farm animals to more exotic ones in Kolmården Wildlife Park. The extensive work on the thesis project provided me with in-depth knowledge and opened the door to my current doctoral degree project. Having a full year to work on your thesis is one of the key characteristics of this programme.



15 Chemistry

Degree: Master of Science with a major in Chemistry **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/chemistry

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Join us on a journey from materials science to medicine with the molecule in focus.

Skilled chemists will play a key role in solving the great challenges we are facing concerning the environment and the health of an aging population. The complexity of issues as diverse as climate change, energy storage, cancer and antibiotic resistance requires a broad chemical knowledge.

This new programme has a modern, molecule-centred approach, beyond traditional branches of chemistry. By studying the details of the chemical bond, followed by synthesis and analysis of both molecules and materials, you will learn why molecules with a certain structure are suited for a

given application within nanotechnology, medicinal chemistry and materials science. Throughout the programme, our experienced teachers, who are all active researchers, will describe how molecular properties are understood, designed and used.

A key feature of the programme is its experimental focus. You will spend a lot of time in our labs, getting hands-on experience of chemistry and applying theories covered in lectures. Linköping University has a strong research environment in chemistry and related areas, such as the development of hard and soft materials,

molecules for pharmaceutical and diagnostic purposes and methods for forensic investigations. You will have the option to do your thesis either in an academic research group or in industry.

After graduation, you will have proficiency in “thinking chemistry” from a molecular perspective. The job market for chemists is excellent. You may find work in the pharmaceutical or materials science industries, or with environmental agencies. The programme also makes you well prepared for further studies towards a doctoral degree.

Henrik

Sweden - Professor

I am very excited about our new approach, with a molecular perspective on all aspects of chemistry. The programme delves into how chemical bonding generates a molecular structure, and how this structure is synthesised, analysed and used in an application. You will also learn why certain applications require molecular structures with certain properties and how to design molecules from that perspective.



16 Experimental and Medical Biosciences

Degree: Master of Medical Science in Medical Biology **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/biosciences

Tuition fees: Approx. USD 15,000/EUR 13,000 (SEK 136,000) per academic year (for non-EU citizens)

Join the frontline of knowledge in the field of biomedicine and kick-start your scientific career.

The high level of research cooperation within LiU sets us apart. Our master's programme prepares you for breaking new ground within the broad field of life sciences, with particular emphasis on understanding cellular and molecular mechanisms related to health and diseases.

Different areas such as cardiovascular biology, stem cells and applied regenerative medicine, genetics and neurobiology are covered. The programme unites theoretical knowledge with practical skills, particularly in the individual experimental projects that you will carry out.

Courses are taught using regular lectures, but also tutorial groups that apply problem-based learning (PBL), laboratory work and seminar discussions. The laboratory classes use powerful model systems to illustrate modern concepts of medical biology, while PBL promotes lifelong learning.

Individual projects are key parts of the programme. During the second year, you will conduct your degree project in a research laboratory either at Linköping University, at another Swedish or international university, in industry or in the public sector.

An extra feature of the pro-

gramme is the possibility for a limited number of students to study the second year at the University of Applied Sciences, Technikum Wien, in Vienna, Austria. If you pursue this opportunity you will earn an additional degree – Master of Science in Engineering. The studies in Vienna have a strong link to the industry.

Our programme is the highest-rated biomedicine programme in Sweden. As a graduate you will be well prepared for careers in the pharmaceutical and healthcare industries, in the public sector or within academia.

Anna

Sweden - Research Engineer, LiU

The best part was the variability and the possibility to form the programme to my interests. This programme offers a lot of labs and practical knowledge. From my mentor, I got some really valuable feedback on how to think for my future career in research, both in regards to group dynamics within a research group, strategies to become a researcher and what to think about when entering a new research project.



17 Materials Science and Nanotechnology

Degree: Master of Science with a major in Applied Physics or Physics **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/materials

Tuition fees: Approx. USD 13,500/EUR 12,000 (SEK 126,000) per academic year (for non-EU citizens)

Advance the physics of new materials.

Huge advances in modern technology and products over the past two decades have relied to a large extent on research and development of materials science and engineering. The transition towards a sustainable society has intensified attempts to remake materials to become more energy-efficient and environmentally friendly, with renewable, long-life and toxic-free properties. In order to achieve this, specialist knowledge in condensed matter, nano-scale physics, and soft and molecular materials is required.

With support from internationally competitive research activities, this master's programme offers

high-level interdisciplinary education and training in new and advanced materials. For a solid knowledge foundation, you will begin with mandatory courses in nanotechnology, principles of materials science, surface physics, and the physics of condensed matter. Experimental physics and analytical methods in materials science provide extensive training in operating the advanced instruments and equipment currently used in R&D of new materials. A wide range of elective courses are offered, giving you a broad perspective of current materials research and its applications, in particular an in-depth CDIO (Conceive –

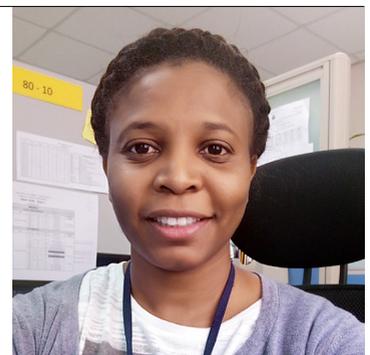
Design – Implement – Operate) project course to develop your creative thinking and problem-solving abilities. In the final semester, you will take part in cutting-edge research while writing your thesis.

After graduation, you will be prepared for careers within academia or industry, in materials-related research and development. As materials science is a research priority at Linköping University, we have two multidisciplinary doctoral graduate schools where many of our graduates continue their advanced studies.

Nashwa

Sudan – Assistant Professor of Physics

I am fascinated by materials science and nanotechnology. The master's programme equipped me with a very strong theoretical and practical foundation that enabled me later to conduct research in photonics materials and obtain a doctoral degree in Physics. The programme allowed me to meet with students from different areas and share their values and culture. The programme was a great learning opportunity.



18 Adult Learning and Global Change

Degree: Master of Arts with a major in Adult Learning **Credits:** 60

Duration: Two years **Pace of study:** Part-time **Campus:** Online (distance learning) **More info:** liu.se/globalchange

Tuition fees: Approx. USD 11,000/EUR 9,000 (SEK 96,000) per academic year (for non-EU citizens)

Be part of an award-winning adult learning global network initiative.

Governments all over the world are urging citizens to train and educate themselves in order to stay competitive in a connected world.

Critical discourses on globalisation require the ability to learn in situations that span vast cultural and geographic divides. Our programme is for those who wish to understand adult learning in the framework of global change within a unique digital learning format that has won international acclaim.

This master's programme enhances students' ability to work

in a globalising world and to challenge the traditional perspectives on globalisation. Our programme is an equal collaboration with universities in Canada and South Africa. All course activities will be done within a digital learning platform, where you will learn together with students from the partner universities in a global class, making the programme truly international. The courses contain topics such as locating oneself in global learning, adult learning: contexts and perspectives,

global/local learning, and understanding research.

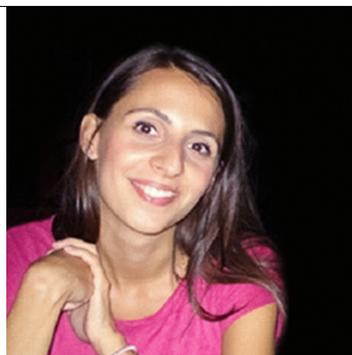
Our graduates are able to learn and teach globally, use global connective technologies, understand knowledge-based societies and their implications for learning, understand globalisation discourses, develop cultural sensibilities and sensitivities and develop an equality perspective for learning and re-framing their own professional practices.

They may also continue their academic careers in further projects.

Kamila

New Zealand - Learning and Development Consultant, Vodafone

I absolutely loved becoming part of the global community, learning and sharing knowledge and experiences. Critical reflection is essential and really encourages students to develop a thoughtful perspective on their learning and practice in order to develop professionally. In order to keep up to date as a professional you need to continuously learn, reflect and review your practice.



19 Outdoor and Sustainability Education

Degree: Master of Social Science with a major in Didactics (with emphasis on Outdoor Education) **Credits:** 60

Duration: One year **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/susedu

Tuition fees: Approx. USD 12,000/EUR 10,500 (SEK 110,000) per academic year (for non-EU citizens)

Discover the educational potentials of leaving the classroom and exploring the surroundings.

All children deserve the opportunity to learn and reach their full potential. This master's programme will increase your knowledge about learning processes with a focus on experience-based learning, using different modes and methods. The advanced courses in educational science will help teachers and other educators understand how a variety of outdoor environments can be used as resources for learning.

Outdoor education is a diverse field of research and practice. This programme derives from the Scandinavian perspective on outdoor education – the concept of “uteskola”, literally meaning outdoor school.

You will gain theoretical and practical knowledge on how to teach different school subjects outdoors, in natural as well as urban environments. We explore the city, nature reserves and other green settings, playgrounds and schoolyards as learning environments. Examples of educational settings come from the entire school system, pre-school up to adult learning. You are also given the possibility to focus on your particular interests and field of practice.

One essential question in societies worldwide is how to sustain our planet's functions and resources and at the same time improve well-being for a growing

population. Environmental and sustainability education focusses on possible ways to work with the knowledge, skills and values needed for contributing to and participating in a sustainable society. Furthermore, the programme explores the role of nature and green settings for learning, health and well-being.

As a graduate, you will be able to work with pedagogical development in schools or other educational fields in society.

Deepti

India - Co-founder of Happily Outdoors/Independent Researcher

This programme turned out to be one of the best decisions of my life. We were not just outdoors doing activities, the course was well designed. Now I organize nature camps for urban kids based out of Bangalore; I take them to the forests in Western Ghats. Additionally, I raise funds to conduct research on integrating outdoor pedagogy in government primary schools located in rural and tribal areas.



20 Applied Ethics

Degree: Master of Arts with a major in Applied Ethics **Credits:** 60

Duration: One year **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/applied-ethics

Tuition fees: Approx. USD 9,000/EUR 8,000 (SEK 80,000) per academic year (for non-EU citizens)

Tackle life's big questions with applied ethics.

Modern societies face many new challenges. Globalisation raises questions of global justice, new technology has implications for decision making in healthcare concerning life and death, climate change and environmental hazards challenge our responsibility for future generations. Applied ethics is a growing interdisciplinary field that strives to tackle the moral issues surrounding these challenges. If these questions engage you, this master's programme will meet your aspiration.

The programme offers a complementary education at the master's level in applied ethics for you who already hold a bachelor's

degree in one of various academic fields, from philosophy to health and technology, or a professional degree. The subject has its disciplinary basis in moral philosophy and ethics, and requires knowledge and expertise in the various fields of application.

LiU's centre for Applied Ethics (CTE) is a leading centre in applied ethics in Sweden. We are devoted to research and teaching, with globally minded areas and collaborative partners worldwide.

You will gain knowledge of ethical theories and methods, and examine ethical debates in different fields of application. You will acquire the skills to provide analysis of moral

problems and ethical debates and be able to make critical assessments of ethical arguments and policy documents. In the latter half of the second semester, you will concentrate on a selected area of specialisation.

When you graduate you'll have a unique competence that you can add to your professional or disciplinary competencies; doctor or nurse, teacher, minister, civil servant or economist, many professionals need the ability to manage ethical issues. A great number of our graduates continue to doctoral studies in different areas of applied and professional ethics.

Mayli

Belgium - Doctoral Student in Biomedical Ethics/Yale Seminar Leader

LiU gave me a great basis for a successful career. Studying applied ethics in Sweden is especially interesting, because the country is so advanced in implementing normative principles into its policies. Gender equality and other social justice efforts are really apparent. I'm also really grateful for the guidance I received writing my thesis; it earned me an award in the US.



21 Business Administration - Strategy and Management in International Organisations (SMIO)

Degree: Master of Science with a major in Business Administration **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/business-administration

Tuition fees: Approx. USD 10,500/EUR 9,000 (SEK 95,000) per academic year (for non-EU citizens)

The world needs leaders with good knowledge and judgement, who can make well-balanced decisions.

The international environment presents a series of opportunities and challenges in scale, uncertainty, ambiguity and complexity. Navigating these waters requires not only analytical skills in management, but also a reflective and creative mindset and good judgement.

The programme combines fundamental academic knowledge (thinking and reasoning) and experiential knowledge (skills) to prepare students to go beyond applying known solutions to known problems. It also encourages them to grow as a human being.

We train for analytical excellence, for reflection and creativity, and for personal growth. As a Strategy and Management in International Organisations (SMIO) student you will be expected to work hard. You will join an exclusive and diverse group of some of the most talented management students from all corners of the world.

Upon successful completion of the programme, students will have acquired excellent analytical skills, the ability to think strategically, and relevant experience for work in international organisations.

Our graduates are competent analysts and competitive candidates for employment in international organisations in general. Among our alumni we find consultants, business analysts, innovation strategists, marketing and brand executives, HR specialists and project managers. Some alumni have started their own businesses, while others have chosen to pursue an academic career through doctoral studies. As a graduate you will join an alumni network of around 400 individuals in all parts of the globe.

Wibke

Germany - Current Student

The reputation of the Swedish education system eventually made me decide to come and study here. I like the 'how' of SMIO, we are sharing knowledge instead of doing it all by ourselves; it might be more time-consuming but you learn how to work together and trust each other. Our year consists of people from different educational and cultural backgrounds and we have to work together a lot. Studying SMIO is really broadening my horizon.



22 Computational Social Science

Degree: Master of Science in Computational Social Science **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Norrköping **More info:** liu.se/css

Tuition fees: Approx. USD 10,500/EUR 9,000 (SEK 95,000) per academic year (for non-EU citizens)

Use statistical and computational methods to understand society and human behaviour.

The increased integration of technology into our lives has created unprecedented volumes of data on everyday human behaviour. Troves of detailed social data related to choices, affiliations, preferences and interests are now digitally archived by internet service providers, media companies, other private-sector firms, and governments. New computational approaches based on predictive modelling, agent-based simulations, text analysis, and network science make it possible to analyse these data in insightful and novel ways.

This is a chance to develop skills in cutting edge computational techniques alongside a strong grounding in the principles and practice of contemporary social research. The programme's quantitative methods training will help you harness complex data and use them to explore social theories and fundamental questions about human societies. The programme's theoretical and substantive training will introduce you to the principles of social inquiry and theories of human behaviour, and help you apply your technical skills to pressing social issues such as ethnic

segregation in schools, income inequality, entrepreneurship, political change, and cultural diffusion.

The skills you develop in social theory and data analysis during the programme are in high demand in the private sector and in government. Graduates will be qualified to pursue social science research in a number of roles: data analyst, marketing analyst, sales researcher, user experience researcher, policy analyst, etc. After graduation, you will also qualify for many doctoral programmes.

Benjamin

USA - Senior Lecturer and Programme Director

Governments and firms rely on social data to learn about clients, evaluate competitors, and set policies. Computational methods can make sense of expansive digital datasets, but successful social research also requires a theoretical compass. Our programme combines a strong theoretical foundation with advanced methods training to prepare the next generation of social scientists to tackle important social problems and research questions.



23 Child Studies

Degree: Master of Science with a major in Child Studies **More info:** liu.se/child-studies

Duration: One/two years **Credits:** 60/120 **Pace of study:** Full-time **Campus:** Online distance learning with periods of instruction on campus **Tuition fees:** Approx. USD 9,000/EUR 8,000 (SEK 80,000) per academic year (for non-EU citizens)

Challenge conventional views on children and childhood.

This master's programme is interdisciplinary and focusses on the critical study of questions related to children and childhood.

Courses explore various areas: children's rights, parents and the family, education and school, migration, culture, the media, and health. You will deepen your knowledge of methodological approaches and theoretical perspectives in child studies. Our core focus is how to apply the latest research findings in order to critically review, develop and improve policies and practices related to children and childhood. The programme is hosted by an internationally renowned research department, which has conducted

research in child and childhood studies since 1988. The teachers are active researchers, which guarantees that cutting-edge knowledge is presented.

The programme can be taken in one or two years and will prepare you for designing, planning and conducting research that concerns children, childhood and families. Each year is concluded with a 15-credit master's thesis. The programme is primarily taught online with the aid of a digital learning platform, but there are three on-campus periods of duration 2-5 days in the first year and two in the second. This allows for some flexibility as to where and when you conduct your studies.

The programme has high academic standards, however, and requires students to commit full time to their studies.

Graduates who wish to follow a career in research via a doctoral degree will be well prepared through the programme. You can also follow a career within governmental authorities as well as local organisations, both governmental and non-governmental, whose activities affect children and their living conditions, or use the master's degree to take your career in professional fields such as education, politics, social work and care to the next level.

Brian

Italy - Doctoral Student

The interdisciplinary approach to child studies was a highlight of this programme. The faculty offered stimulating and enriching discussions relevant to the study of children and childhood. I left the programme feeling I had engaged in profitable discourses that have helped my further academic and professional endeavours. I have had the opportunity to study in several countries, but Sweden stands out as a memorable and rewarding experience!



24 Ethnic and Migration Studies

Degree: Master of Arts with a major in Ethnic and Migration Studies **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Norrköping **More info:** liu.se/ethnic-migration-studies

Tuition fees: Approx. USD 9,000/EUR 8,000 (SEK 80,000) per academic year (for non-EU citizens)

*Make your
commitment matter.*

You are dedicated to help tackling some of the most challenging issues in today's world. This unique master's programme relates ethnicity and migration to global economic and cultural change, and to systems of domination and resistance movements.

You will sharpen your skills in analysing the causes of migration, as well as its consequences for emerging formations of race, gender, labour, citizenship, healthcare, welfare and culture.

The programme is interdisciplinary, integrating the humanities and the social sciences. In true LiU spirit, there is a strong commitment to problem-solving, critical and innovative approaches.

You will learn how migration shapes society, from a historical and sociological point of view. Our dedicated students reach in-depth knowledge in the field of intersectional migration studies.

You can tailor your education towards a special interest, profession or field of expertise, by choosing elective courses, studies abroad and internships.

The studies take place on our beautiful Campus Norrköping. Ethnic and migration studies is a strong interdisciplinary research field at LiU. It is pursued at different institutes, departments and units, notably REMESO – the Institute for Research on Migration, Ethnicity and Society, one of

Europe's top institutions in ethnic and migration research.

In your courses you will meet teachers who are all doing research in the areas that they teach in. This means that courses provide an in-depth orientation of knowledge and analysis of each field and insights into the production of new knowledge. The programme offers direct contact with ongoing research.

When you graduate, you'll be qualified for positions in local, national and international organisations, administration, business, government, media and the cultural sector, as well as for further postgraduate studies and research.

Haqqi

Syria - Doctoral Student

We investigated a whole set of challenging questions related to ethnicity, race and migration. The classroom culture was open and helpful for us to critically discuss almost any topic. I did my internship with Doctors Without Borders and completed my MA thesis on Syrian-Kurdish refugees in the Kurdistan region of Iraq. After graduation I started as a doctoral student at LiU where I am conducting research on statelessness and politics of identity.



25 Gender Studies - Intersectionality and Change

Degree: Master of Science with a major in Gender Studies, specialisation Intersectionality and Change **Credits:** 60/120
Duration: One/two years **Pace of study:** Full-time **Campus:** Online distance learning with periods of instruction on campus. **More info:** liu.se/gender-studies **Tuition fees:** Approx. USD 9,000/EUR 8,000 (SEK 80,000) per academic year (for non-EU citizens)

Become an agent for change.

This one-of-a-kind master's programme makes you highly skilled in analysing how social and cultural change can be initiated or sustained by integrating a critical understanding of gender and intersectionality.

The programme focusses on intersectional gender, i.e. gender and its interplay with other social categorisations and power differentials such as ethnicity, class, nationality, sexuality, age, and (dis)ability.

If you are attracted by the idea of challenging existing norms and structures in society – this is the programme for you. A key ambition is to develop an understanding of the links between activism, theory, professional development

and career paths. Students taking the programme usually have a wide range of educational and professional backgrounds, for example in sociology, teaching, psychology, political science, and business administration. The programme is offered as a one-year option, 60 credits, or a two-year option, 120 credits.

To give you the latest update on current research, we invite you to take part in seminars at the internationally renowned Unit for Gender Studies. This is one of the largest interdisciplinary research and teaching units for intersectional gender studies in the Nordic countries.

The programme combines online distance education with

three mandatory on-campus gatherings per academic year. You will interact with your teachers and fellow programme members in a digital classroom. The forms of instruction, which are based primarily on the use of the internet, place greater demands on your own activity than a purely campus-based programme.

You will be equipped for a career in higher education and research as well as professional work with intersectional gender in organisations, media, communication and politics. This programme is also appropriate for you who want to boost your current career through further training within gender work.

Inkeri

Finland - Gender Equality and Diversity Specialist

The programme provided a great opportunity to reflect on my work as a gender equality and diversity specialist through feminist research. During the programme, I also had an opportunity to meet interesting researchers who were our teachers, and to discuss with wonderful co-students. Together we created a diverse and interesting group.



26 International and European Relations

Degree: Master of Science with a major in Political Science, specialisation International and European Relations
Credits: 120 **Duration:** Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/international-relations
Tuition fees: Approx. USD 9,000/EUR 8,000 (SEK 80,000) per academic year (for non-EU citizens)

Investigate Europe's role in world politics and global governance.

This programme approaches issues related to European relations in the context of an international society and global governance, with a special focus on Europe's role in world affairs. The double focus on international and European relations makes this a unique master's programme, offering you a competitive edge.

The curriculum consists of a wide range of topics, covering the latest updates from this intriguing field. You will get an excellent grasp of topics like international law and security, European institutions and Europe's external relations, theories of international relations, contemporary issues of international gov-

ernance, and research design and methodology. During the third semester, students have the option of either taking courses focussed on global governance, or pursuing a guided internship with an organisation of relevance for international or European relations. Throughout the programme you will develop the capacity to understand the history, theory and contemporary implications of international and European relations, as well as the forces that drive developments.

By the time you graduate you will have an independent, critical approach to complex global, and specifically European, issues.

Furthermore, you will gain the skills and knowledge to contribute actively to important developments, either as practitioners or as researchers.

The programme prepares them for a career in governmental institutions and in international public organisations, as well as in the private and non-governmental sectors. Graduates from the programme can be found today in such institutions, working with various aspects from running policy programmes to scientific research. The courses also provide a solid foundation for further studies and research towards a doctoral degree.

Anke

Germany - Doctoral Fellow ARENA Centre in Norway

One of the most important things was the diversity of people and opinions within the programme. I really enjoyed the vivid discussions, and learned a lot about different cultural and societal backgrounds. Coming from a quite homogenous German bachelor's programme, it was quite a revelation for me to see how much perspectives on different political, historical and social issues could differ.



27 Strategic Urban and Regional Planning

Degree: Master of Science with a major in Urban and Regional Planning **Credits:** 120

Duration: Two years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/strategic-planning

Tuition fees: Approx. USD 10,000/EUR 9,000 (SEK 95,000) per academic year (for non-EU citizens)

Planning for the cities and regions of the future.

Our cities and regions are currently facing fundamental challenges related to climate change, globalisation, urbanisation, digitalisation and social inequality. Strategic urban and regional planning is one of the most powerful local instruments to (re)shape long-term urban and regional development and create sustainable cities and regions of tomorrow. The programme provides you with the opportunity to advance your knowledge about societal change and enhance your abilities to engage in complex planning processes and agendas, in collaboration with citizens and other stakeholders. The programme has a special focus on regional develop-

ment challenges in European countries.

New IT infrastructures in smart energy and transport systems, problems with segregation, and the urban-rural relationship, are just a few challenges that urban and regional planning must respond to and manage in a long-term sustainable perspective. The programme offers training in urban and regional planning, with a focus on strategic planning. Core elements are identifying and managing planning issues within complex social, environmental and economic realities. This helps you develop skills in conducting studies, formulating strategies and coordinating overall planning at various

levels of society. In line with LiU tradition, is a close collaboration with public and private employers offering real-world learning opportunities. As a student you are able to specialise in your area of interest.

The programme prepares you for a career as a planning and environmental strategist, plan manager, overview planner, district developer, urban planner or external analyst. You will be qualified for positions in regional associations, county councils, various government agencies, private enterprises, and non-profit organisations. You will also qualify for doctoral programmes.

Kristina

Sweden - Senior Lecturer and Programme Director

LiU's new Master's programme is the first of its type in Sweden. You will learn how to design strategies and policies, how to manage projects and processes and plan on a more comprehensive level. You will also learn how to use digital tools such as those used in visualisation and scenario analysis. The programme will be closely associated with the research at the Department of Thematic Studies, Technology and Social Change.



28 Experimental and Industrial Biomedicine (B.Sc.)

Degree: Bachelor of Science in Medical Biology **Credits:** 180

Duration: Three years **Pace of study:** Full-time **Campus:** Linköping **More info:** liu.se/biomedicine

Tuition fees: Approx. USD 16,000/EUR 14,000 (SEK 147,000) per academic year (for non-EU citizens)

Developing the biomedical research leaders of the future.

LiU offers the first international bachelor's programme in Sweden that combines project management skills with practical research techniques in the field of biomedicine. The programme has been designed in partnership with world-leading pharmaceutical and biotech companies to ensure that our graduates have the knowledge and skills required to work at the forefront of biomedical research and innovation.

This bachelor's programme provides deep theoretical knowledge and practical experience of

state-of-the-art research techniques in fundamental biomedical fields such as cell and molecular biology, medical biochemistry, physiology, and pharmacology.

It also presents novel areas such as drug discovery, systems biology, bioinformatics and digital pathology. Throughout the programme, you will work in project-driven courses to apply your knowledge.

To ensure that you can translate research breakthroughs into clinical products and services, the programme trains students in the latest approaches in project

management, clinical trial design, bioentrepreneurship, drug regulation and medical ethics. You will also have the opportunity to spend an entire semester carrying out research at LiU or at one of our industrial partners, in Sweden or abroad. By educating our students in the theory and practice of innovative biomedical research as well as research management, we aim to develop through this programme the biomedical research leaders of the future.

Anna

Sweden - Associate Professor, Programme Manager and Entrepreneur

I've been a medical researcher for many years as well as a teacher and an entrepreneur. Based on my own experiences as a medical researcher with close collaboration with the technical faculty and the life science sector, we designed a bachelor's programme in experimental and industrial biomedicine. Our aim is to prepare students with solid knowledge in the field of biomedicine together with skills in project management and bioentrepreneurship.





The *practical* road to success

How to apply

The application period for programmes starting in autumn 2020 is mid-October 2019 – 15 January 2020. The application must be made online, through the national application service: universityadmissions.se

Admission requirements for master's programmes

- A bachelor's degree from an internationally recognised university
- Proof of English language skills, e.g. TOEFL, IELTS
- The specific requirements stated for each programme

Bachelor's programme

Information about application and admissions requirements for our bachelor programme is available on the universityadmissions.se website.



Doctoral studies

Doctoral studies are free of charge and cover many disciplinary areas. Positions become available throughout the year and, in most cases, are remunerated.

General entry requirements

- A university degree in the same area as the intended field of study
- A degree thesis presenting the results of independent research
- Good command of English, for some subjects also Swedish

Specific requirements

As well as general entry requirements there are specific requirements for each available position. For more information on doctoral studies go to: liu.se/en/research

Apply for scholarships

Every year Linköping University offers scholarships to new students with excellent academic results, usually representing a tuition fee waiver of 25–75%.

To qualify you need to:

- Apply for an international programme in time – before 15 January
- Choose the programme at Linköping University as your first priority (ranked as no. 1 out of 4)
- Apply for a LiU International Scholarship on our website once you have been admitted to your first choice in the First Notification of Selection Results.

Must be admitted

Only admitted students will be considered for scholarships. For more information go to: liu.se/scholarships



Tuition fees

Citizens from countries outside the EU/EEA and Switzerland must pay tuition fees for higher education in Sweden. For more detailed information please check universityadmissions.se

Included in the fees

- Swedish language courses for beginners
- The Swedish state's insurance FAS+, including accident and property cover
- An accommodation offer

Approximate fee levels

Generally, fees are between SEK 80,000 and 136,000 per academic year. Citizens of EU/EEA and Switzerland do not have to pay tuition fees.

Accommodation

Arranging housing in Linköping or Norrköping is something you should think of as soon as you have been admitted to the university.

Useful tips

- Register with different housing companies in order to gather queue points
- If you are a fee-paying student, accept the offer of accommodation
- Book alternative short-term accommodation if you arrive out of hours

For more information on how to search for housing go to:

liu.se/en/article/accommodation



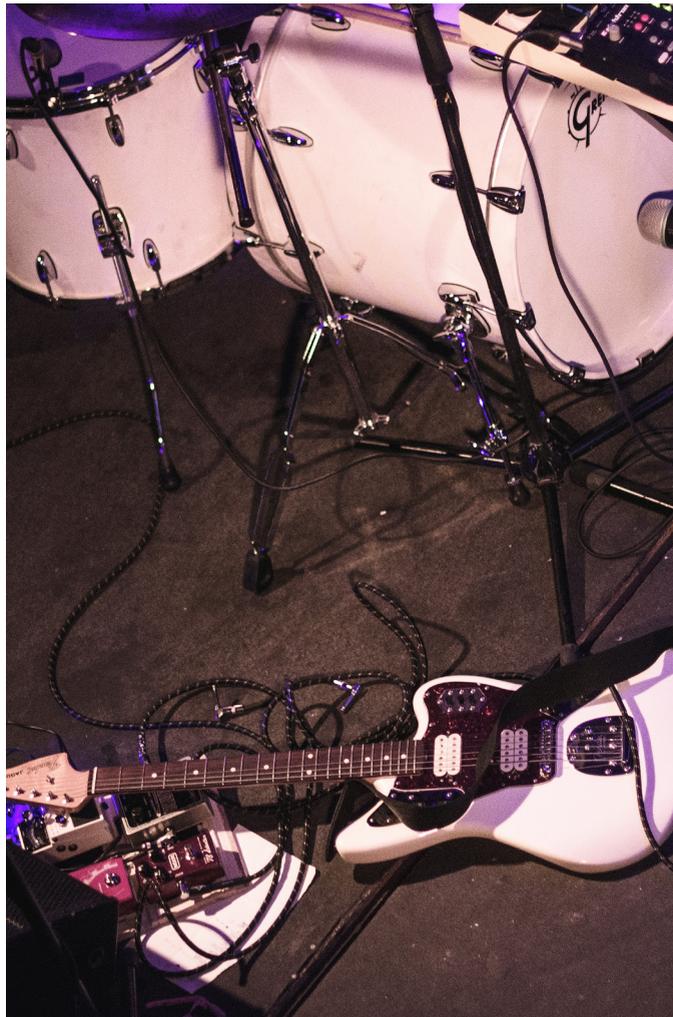
Our support to you

The world needs our students' courage, drive and innovative spirit. Of course, we want every student to complete their studies, and develop their abilities as much as possible.

Our university services can help you with:

- Documentation
- Health issues
- Hundreds of study places
- Numerous labs that are available 24/7
- 40 student clubs that are waiting to give you a great welcome

And lots more that you can find easily at Studenthuset: liu.se/en/studenthuset



Location

Linköping and Norrköping are situated in East Sweden, a couple of hours south of Stockholm. The region has lots to offer in terms of landscape, innovation and business opportunities, talent attraction and more.

One university, two cities

- Linköping is Sweden's fifth largest city with a well-developed business sector but also the charm of a smaller town.
- Slightly smaller, Norrköping has a lively cultural scene, including lots of live music festivals.
- In both cities, everything is within walking distance and it is very easy to find something fun to do.

East Sweden

The region is home to several internationally well-known companies, including Saab, Toyota Industries Europe, IFS, Siemens, Holmen Paper and BT Industries.



Getting here is easy!
Hop on any of the three daily flights from Amsterdam.



FINALLY: A WORD OF CAUTION

Sweden is easy to love. The beautiful nature, open-minded people, safe environment, freedom of speech and high standards of living have seduced many students before you. Some of them stayed on at the university, others went off to explore other Swedish innovative grounds. One couple left for their home country after graduation, only to come back to take their wedding photos on campus. In short: your time at Linköping University and in Sweden will change your life in many ways. Apply today!



Contact us

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