Faculty of Science and Technology
Umeå University
Sweden
The success of a faculty mainly depends on its staff, with all their knowledge, competence and ideas. One of the big challenges in carrying out qualitative education and excellent research is to have the right person in the right place. But, not only recruitment of staff and students is important, we have to ensure that everybody feel at home and continue to develop, so that we can move forward together. Nice facilities, modern infrastructure and fine surroundings in close proximity to nature and cultural activities makes it possible for students and staff to perform better and continue to build our faculty. I think we have done well in many of these aspects, but we can of course do even better.

In this brochure we have picked some examples of creative environments within the faculty, where cutting edge research and high quality education is carried out; a sample of both width and excellence. Let this be an inspiration for all of us who have Umeå University as our workplace, as for all who study here or are just interested in what we do. You are welcome to contact us, or as we say in Northern Sweden: ”Vi syns!”

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Asa Rasmuson-Lestander
Dean

About the faculty

Students: 3 300.
Staff: 1006.
Professors: 81.
Doctoral students: 227.

Departments:
• Umeå School of Architecture
• Computer science
• Umeå Institute of Design
• Ecology and Environmental Science
• Physics
• Plant Physiology
• Chemistry
• Mathematics and Mathematical statistics
• Science and Mathematics Education
• Molecular Biology
• Applied Physics and Electronics

Institutes:
• Umeå School of Architecture
• Umeå Institute of Design
• Umeå Institute of Technology

Research centres:
• Centre for Biomedical Engineering and Physica, CMTF
• European CBRNE Centre
• High Performance Computing Centre North, HPC2N
• Northern Sweden Soil Remediation Center, MCN
• Umeå Marine Sciences Centre, UMF
• Umeå Mathematics Education Research Centre, UFM
• Umeå Plant Science Centre, UPSC
• Climate Impacts Research Centre, CIRC
Diversity and excellence

The Faculty of Science and Technology at Umeå University has 3,300 students, around 200 doctoral students and strong research. Eleven departments are responsible for the faculty’s research and education in chemistry, physics, biology, computer science, mathematics, technology, teacher training as well as design and architecture.

To be really competitive it is necessary to focus and make priorities. The faculty hosts seven of Umeå University’s appointed strong research environments: Ecosystem changes, Plant and forest biotechnology, Light in science and technology, The environment’s chemistry, The dynamics, function and structure of proteins, Modelling living systems and Solar fuels. Of course there is also reputable research carried out in other subjects, such as physics, applied information technology and marine environment research.

The Faculty’s Education programmes are characterized by proximity to research,
quality pedagogy and a relaxed atmosphere. In addition to a preparatory one year course in science we offer 23 Bachelor's programmes for future engineers, industrial designers, architects, scientists and pharmacists. A Bachelor’s exam can be followed up with a Master’s exam, 14 different programmes on advanced level are offered.

The faculty has a long experience in offering education in other cities and as online courses. Both the Bachelor’s and Master’s programme in pharmacy has been given the highest appraisal in recent evaluation by the Swedish Higher Education Authority. These programmes are both offered as online education.

The faculty is actively providing the students insight into their future professions in order to increase their opportunities for employment after graduation. For example some courses are given in collaboration with companies and industries, guest lectures are frequent as well as thesis projects carried out together with industrial partners.

NEAR UMEÅ RIVER at Umeå Art’s campus Umeå Institute of Design and Umeå School of Architecture are situated. Our design educa-
tion is ranked among the best in the world, a fact constantly proved by the students who time after time win prestigious prizes in international design competitions. The School of Architecture was established in 2009 and aims to be both artistic, international and focused on sustainable building.

The School of Technology comprises the faculty’s engineering programmes. The latest addition is a five year programme in bioresource engineering which started in the autumn of 2014.

Several education programmes, mainly master’s programmes are given in English.

ABOUT Umeå University

Umeå University is one of Sweden’s largest universities and has over 36 000 students. The main campus comprises the four faculties of science and technology, humanities, medicine and social sciences. Nearby are two important partners, The University hospital of Umeå and The Swedish University of Agricultural Sciences. In other words, the conditions for creative research and education are good.

Each year we receive about 280 foreign students and about 30 of our own students choose to study abroad for a term or year.
Our education programmes:

**University Diploma programmes**
*(120 ECTS)*
- Nature guiding
- Process operator

**Bachelor of Science programmes**
*(180 ECTS)*
- Biology and Earth Science
- Computer Science
- Environmental Health
- Industrial Design
- Life Science (in English)
- Physics and Applied Mathematics

**Bachelor of Science programmes in Engineering** *(180 ECTS)*
- Civil Engineering
- Electronic- and Computer Engineering
- Electrical Power Engineering (online)
- Energy Engineering
- Mechanical Engineering

**Master of Science programmes in Engineering** *(300 ECTS)*
- Bioresource Engineering
- Engineering Biotechnology
- Energy Engineering
- Engineering and Management
- Interaction Technology and Design Engineering
- Computing Science and Engineering
- Engineering Physics
- Engineering, Common Entrance

**Pharmacy**
- Bachelor of Science programme in Pharmacy *(180 ECTS, online)*
- Master of Science programme in Pharmacy *(300 ECTS, online)*

**Architectural programme** *(300 ECTS)*
- Architecture

**Master of Science programmes** *(60 ECTS)*
- Environmental health

**Master of Science programmes in English** *(120 ECTS)*
- Advanced Product Design
- Computational Science and Engineering
- Computing Science
- Immediate Architectural Intervention
- Ekology
- Pharmacy
- Physics
- Geoekologiy
- Sustainable Architectural Production
- Interaction Design
- Chemistry
- Molecular Biology
- Robotics and Control
- Transportation Design
- Plant and Forest Biotechnology
There are many challenges in the field of technology and science. Cod are disappearing from the Baltic sea, bacteria are becoming resistant to antibiotics and energy issues urgently need to be solved. The list can be made long and knowledge is the key to facing and solving the many important problems surrounding us.

The research at our faculty comprises everything from chemistry, biology, physics and computer science to mathematics, design and architecture. In its ambition to expand research at Umeå University the university leadership has identified and appointed 14 strong research environments. The Faculty of Science and Technology hosts seven of them:

- Ecosystem changes
- Plant and forest biotechnology
- Light in technology and science
- The environment’s chemistry
- Modelling living systems
- The dynamics and structure of proteins
- Solar fuels

Umeå University has been granted 226 million SEK by the government for the period 2010-2014 to establish world prominence in eight strategic research fields. Umeå University has the main responsibility for two projects in energy research and marine environment research:

**Bio4Energy - From trees to advanced fuels and chemicals**
Almost all chemicals and vehicle fuels today are based on fossil resources. Scientists and entrepreneurs in northern Sweden want to change that by replacing oil with forest products. Within the research project Bio4Energy they join forces to pursue this goal.

**Ecochange - How does climate change affect the Baltic Sea?**
The Baltic Sea is threatened by overfertilization, environmental toxins and overfishing. Climate change will probably worsen the situation. The research project Ecochange aims to create a general picture of the climate effects on the Baltic sea and find out how the sea environment is best protected.
Did you know...

For the third consecutive year Umeå Institute of Design has been ranked best design education in Europe, North- and South America by the design organisation Red Dot. This shows that Umeå Institute of Design is established as innovative and outstanding in comparison with international design schools that are both older and larger, when it comes to the number of students and employees.

Our newest engineering education, Bioresource Engineering, is linked to strong research environments at Umeå University and The Swedish university of Agricultural sciences. The students learn everything about the forest’s green gold - down to the smallest molecule. Through a combination of biology, chemistry and engineering they gain knowledge in how to transfer wood into new chemicals, fuels and materials.

Research and education at the Climate Impacts Research Centre in Abisko focuses on effects of climate and environmental change in northern ecosystems. CIRC conducts research spanning from detailed process studies to overall studies on a landscape level. Reiner Giesler (photo) is one of the faculty’s scientists in the terrain above the Arctic circle.

The programme in Engineering Physics is our first and oldest in engineering, last year it celebrated 25 years. It is popular among the students and covers a broad field, for example through the profile Hospital Physics which leads to a double degree. Our Engineering Physics programme is also the only one in Sweden to receive the highest review by the Swedish Higher Education Authority.

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