Technology for the benefit of people and the environment

Tampere University of Technology (TUT) is at the leading edge of technological development and a sought-after collaboration partner among the scientific and business communities. We educate skillful graduates to serve the needs of society. Our University is a fertile breeding ground for innovations and new research- and knowledge-based companies.

We generate new knowledge and expertise for the benefit of society. We foster the well-being of people and the environment through research and education. We develop technologies that reshape the competitive landscape of Finnish industry.
TUT turned 50 and keeps on exploring new avenues and renewing Finland's competitive edge

In 1973, Tampere University of Technology (TUT) turns 50 and keeps on exploring new avenues and renewing Finland's competitive edge.

For a solid period of 50 years, Tampere University of Technology has furthered education, research and the advancement of science and technology and significantly contributed to the development of the Pirkanmaa region and Finland as a whole. This nature of TUT was rather modest, but the belief in the future never faded.

Today, TUT is a renowned pioneer in technological development and a valued partner in research and business endeavors. We educate sought after experts for the needs of society. In technology, it is easy to circumvent that the state made wise decisions on the expansion and further development of the higher education system over half a century ago. These decisions were also decisive in terms of the nation's prosperity and modernization.

In TUT’s strategy updated in 2015, the University profiles itself as a foundation for the well-being of people and the society. In TUT’s strategy updated in 2015, the University profiles itself as a foundation for the well-being of people and the society. In the Tampere3 process, TUT turns 50 and keeps on exploring new avenues and renewing Finland's competitive edge.

Tampere University of Technology, the University of Tampere and Tampere University of Applied Sciences are taking steps to establish an all-in universities in Tampere.

TUT’s 50th anniversary was marked with numerous events directed at different interest groups throughout the year. The main festivities took place in September: the University’s chronicle was published and the new Kampusareena building was inaugurated.

Kampusareena is a unique pilot project launched by TUT and University Properties of Finland Ltd. The facilities and services available in Kampusareena have been specifically designed to complement, support and promote collaboration between the University and companies. The building brings together companies, researchers, students and alumni to facilitate R&D projects, innovation and job opportunities.

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The reductions in the traditional funding sources accentuates the benefits of TUT’s Foundation. TUT is able to allocate funds from the return on capital for investing in selected development targets and new openings. These funds also allow the University to further develop its operations in the long term, as stated in the strategy. The state has committed itself to providing up to three times the funding of traditional sources to support research and educational development efforts. The funding is part of an ongoing three-year adjustment programme to balance TUT’s finances.

Tampere3 is an apt example of a broad-minded outlook and solid strategy which is sorely needed by the higher education system in Finland and the nation as a whole and well worth the investment for the state and business life. The strengths of the new community include international scientific research with high-profile high-quality degree courses and research, and development and innovation activities that support the education provided. A further asset is a close cooperation with industry, which is one of TUT’s strong suits.

The distinct research areas and duties of TUT, the University of Tampere and Tampere University of Applied Sciences will profoundly complement each other. There is no other university in Finland that would allow a similar combination and scope of research in technology, health, society and economy and management, covering the entire chain from fundamental research to practical applications.

For students, Tampere3 will offer substantially more open and flexible opportunities to combine, for example, study paths with practical work experience. Tampere3 is aimed at providing students with the kind of skills that would allow a similar combination and scope of research.

Being able to contribute to the establishment of this new university is a once-in-a-lifetime opportunity. In order to succeed, we will need continuous cooperation and a strong commitment between the involved parties. What we already have is a distinct ambition and a strong foundation for creating a superb new university.

Tampere3 is an exciting opportunity on a plate
TUT 50 years

Tampere University of Technology started its operations as a branch of Helsinki University of Technology in 1965. Gradually, a full university campus was established in the suburb of Hervanta, today housing approximately 8,300 BSc/MSc and doctoral students and employing 1,700 experts from various fields. The university has borne crucial significance in the development of the local Pirkanmaa region, Finland and the world of science. In 2015, Tampere University of Technology celebrated its 50th anniversary. The jubilee was celebrated on several occasions together with the staff, students, cooperation partners and city residents.

The year was set off with the ‘Light into Darkness’ science event in Tampere Hall in January. The main festivities took place in September. The University’s chronicle Hyöty ja tiede was published and the anniversary cantata Alussa oli insinööri premiered in conjunction with the opening ceremonies for the academic year. The newly completed Kampusareena building was also inaugurated. The anniversary year climaxed in October with the ‘Technology Days’ event intended for the general public in the Tampere city centre.

The theme of the jubilee was light. Light symbolizes life and hope, and it also bridges TUT into the future. Science and technology are crucial for solving social problems and they pave the way for a brighter future. The year 2015 was also the UN’s International Year of Light.

One of the highlights of the jubilee was the publication of the University’s chronicle. Written by Martti Häikiö, the partlyjubilee Tampereen teknillisen yliopiston historia 1965-2015 summarizes the key development stages of the disciplines of the University and the numerous new innovations made at TUT, and it also looks back on the University’s long history of close connections with business life. Attention is paid to the most important turning points and the key people involved.

According to Professor Häikiö, the core of the University is comprised of ideas, or in other words, people. ‘To Häikiö, some of the most memorable people from the writing process were the founding father of digital signal processing Yrjö Neuvo, Pentti Kettunen from materials science, the developer of biodegradable materials Pertti Törmälä, the optoelectronics proess Marko Pessa, Matti Vilenius from hydraulics as well as Director of Administration Seppo Loimio, whose dynamic attitude guided the University firmly forward.

The chronicle was published as a part of the opening ceremonies in September.

In honour of the jubilee, incentive awards were granted during the TUT Week in February from the return capital of the TTY Foundation. Awards were granted to Professor Jorma Mäntynen (on the left), Head of Department Heli Harrikari from the Language Centre, University Teacher Essi Isohanni and Academy Research Fellow Alessandro Foi. Professor Mircea Guina was also rewarded.

In the academic year opening ceremonies included the premiere of the jubilee delightful anniversary cantata Alussa oli insinööri written by Siikka Niipola and composed by Anne-Mari Kahla. The cantata was performed by the Teekkarikuoro choir.
Technology Days is a free-of-charge technology event for the general public. Its main event took place in October 2015, for the first time outside the metropolitan area. Public lectures were given in the Finlayson area at the heart of Tampere, and the keynote speaker, Emeritus Professor of Space Astronomy Esko Valtaoja, spoke to a full auditorium of people. A part of the programme was directed particularly at children and youth.

The highly popular TUT Forum was arranged as a part of Technology Days. The event focused on the all-encompassing business revolution induced by digitalization and the debate on the role of humans in the Internet of Things. The keynote speaker at the event was the recipient of the 2014 Millennium Technology Prize and big data expert Professor Stuart Parkin.

Light Artist Kari Kola’s imposing installation Koski (The Rapids) opened the 50th Tampere Illuminations event on 23 October. Exhibiting strong colours and the juxtaposition of nature and architecture, Koski extended both sides of the Tammerkoski rapids. With the work, Tampere University of Technology participated in the jubilee of the annual Tampere Illuminations event. The awe-inspiring Koski work remained on view for the city residents throughout the weekend.
The year 2015 involved a lot of discussion on the distribution of work, cooperation and profiles of the universities in Finland. Together with Aalto University and Lappeenranta University of Technology, TUT took a close look at the strengths of each of the three universities, also covering any overlapping fields in research and education.

At the end of the year the Board of the TTY Foundation approved TUT’s updated strategy for 2016–2020. The new strategy included Tampere in the University’s vision and highlighted four profile areas for research: digital operating environment, energy- and eco-efficiency, health technology and light-based technologies.

Light-based technologies emerged as a new profile area

The year under review also included enhanced investments in TUT’s scientific standards and internationality. A record number of tenure-track professors were appointed in research areas supporting the University’s strategy. For the first time, the Board of the TTY Foundation also allocated funds from the return on capital for hiring postdoctoral researchers. The requirements for the appointed postdoc researchers included high research standards and former international experience.

In a survey conducted by the Open Science and Research Initiative, TUT ranked among the top higher education institutions in terms of maturity of open conduct. The preparations for TUT’s Research Data Policy were also initiated in 2015, creating explicit principles and processes for research data processing.

Open science is an asset

“The more we follow the principle of open science and make our publications and the underlying data and methods openly available, the more citations we will attract and facilitate the verification of research findings,” says TUT’s Library Director Riitta Lähdemäki. She points out that research materials and methods are, by default, open and available for joint use. Researchers are required to prepare a data management plan. For all doctoral dissertations and scientific articles, a version approved by the publisher must be stored in a parallel archive.

In future, the sun will be an increasingly important energy source. Professor Mircea Guina’s group develops highly efficient solar cells.
Research

Winds of change in energy policy: increased flexibility needed in electrical energy supply

Finland is pursuing an increasingly resource-efficient and climate-neutral society. The aim is to use natural resources in a sustainable manner and counter the climate change. In electricity production, renewable energy sources such as wind power, solar energy and bioenergy are becoming more common. This shift necessitates enhanced load adjustability in order to manage the power balance of the energy system. This development in our electrical energy system poses several technical challenges and also raises questions concerning our energy policy, “Professor Pertti Järventausta notes.

Together with the University of Tampere and Tampere University of Applied Sciences, TUT is involved in a consortium that works towards an efficient and climate-neutral electric energy system making. The planning for the project on a resource-efficient and climate-neutral electric energy system (EL-TRAN) was launched inspired by the Tampere3 Academy of Finland. In 2015, the Strategic Research Council (SRC) of the Academy of Finland granted 52.5 million euros for the first strategic research projects for the period 1 May 2015–31 December 2017. TUT is involved in two of the research consortia that received funding, one on the future electric energy systems (EL-TRAN) was launched inspired by the Tampere3 Academy of Finland and TUT aspires to be the world’s leading research unit for intelligent machines and diversified research area, but it also carries enormous innovation.

The project participants include the Departments of Engineering, Mechanical Engineering and Industrial Systems and Signal Processing. The project is funded by the European Research Council and the European Commission’s Horizon 2020 research and innovation framework programme.

Light generates movement

At TUT, light-controlled materials are developed with the idea of producing mechanical movement by changing the length and thickness of the material. The process is aimed at creating tunable optical materials. At best, this new material concept could one day be utilized in several fields and several other interest groups.

“Light-based movements have been used for moving small particles from one place to another, for example,” Assistant Professor (tenure track) Arri Priimägi explains.

The research group envisions that the light-controlled changes in length and thickness could be harnessed for such purposes as improving the detection sensitivity of various molecules and designing tunable light sources.

“Light is a convenient stimulus for designing functional materials that is both cheap and environmentally friendly,” says Arri Priimägi. “The properties of light, such as colour, intensity, polarization or the duration of a light pulse, can be controlled with great accuracy. Therefore, many things can be done with light that cannot be done with other stimuli,” Priimägi notes.

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In 2015, substantial investments were made in TUT’s on-campus learning environments. The Board of the TTY Foundation has allocated altogether 3.5 million euros to the development and deployment of new education technology and new teaching methods for 2015–2017. In fact, TUT is well under way in becoming a superior learning environment across Finnish universities.

In September, the new Kampusareena building was taken into use, now offering a modern learning environment with a range of learning facilities and technologies available. Kampusareena welcomed companies at the core of the campus and laid the foundation for encounters between companies and students, along with resulting new discoveries.

The establishment of the new professorship in engineering pedagogy, supported by a 600,000 euro donation from the Technology Industries of Finland Centennial Foundation, was a significant opening in educational development. Dr. Petri Nokelainen was chosen to the position with the goal of studying and developing university-level education in engineering. What poses additional challenges to the task is today’s learning environments, constantly transforming through such evolutions as digitalization.

A significant reform in TUT’s educational management was our transition to a new organizational structure. For the first time, the support services organization for TUT’s education now operates directly under the management of the vice president for education. This has enabled us to develop our operations with increased determination. The departments prepared their first educational strategies, comprising the educational methods to be applied and the teaching profile of the department for the near future.

In 2015, the departments prepared their first educational strategies, comprising the educational methods to be applied and the teaching profile of the department for the near future. In addition to operational planning, the educational strategies serve the purpose of strengthening the University’s pedagogical management culture. The Tampere3 project started to gain visibility across the University’s educational activities. The year 2015 also saw the launching of 14 teaching pilots aimed at joint education and accumulated experiences of cooperation between the three higher education institutions.

Education

A superior campus and first-rate learning environments

TUT aspires to be the most high-quality and international academic learning environment in Finland.

Vice President for Education
Mika Hannula

Hannula will take office as TUT’s President on 1 April 2016.

7,137 BSc and MSc students
1,715 degrees conferred
71 per cent of students are employed upon graduation
Mystery shopping – new feedback on education

Feedback on education can be requested from students in a variety of ways. For, 2015, a new method was deployed for the purpose: mystery shopping. Dozens of students observed the teaching provided at the University, paid their own learning without the course teachers knowing about it. The observations were gathered and used for educational development.

For regular student feedback collection, the Kaiku feedback system is used for each course taught at TUT. Feedback on education can be requested from students in a variety of ways. In 2015, a whole new method was deployed for the purpose: mystery shopping. Dozens of students observed the teaching provided at the University, paid their own learning without the course teachers knowing about it. The observations were gathered and used for educational development.

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Opened in autumn 2015, Kampusareena literally brought companies at the core of the campus. The facilities enable joint efforts and interaction working, thereby contributing to in-depth partnerships and types of collaboration. At the end of 2015, Kampusareena hosted over 40 companies.

With Kampusareena, business life becomes even closer to education and students’ everyday lives. To an increasing extent, business representatives also serve as visiting lecturers and commission theses, projects and student work. This type of cooperation supports social interaction and the working life relevance of academic degrees. TUT graduates are sought-after employees.

In 2015, TUT paid special attention to SMEs: new products were created for them, existing products were productized further, and target group-oriented communications was intensified. This work was carried out in cooperation with the University of Tampere and Tampere University of Applied Sciences. Among TUT’s new services, Industry Puzzles Friday, in particular, became established and enabled companies to discuss their problems with academic experts.

The wide-ranging cooperation between the University and business life has also given rise to several new companies and substantial new business in existing companies. Nearly half of the inventions made at the University were transferred to companies that use them in their own business and patenting. Researchers’ and students’ entrepreneurship was also supported. Other cooperation partners included entrepreneurial and business service providers in the Tampere region, and the activities also involved utilization of existing services, such as PopUP Activation and Business Clinic.

In the future, Tampere3 will unite and harmonize the practices of the three higher education institutions, develop support mechanisms and facilitate the production of increasingly powerful solutions for the needs of business life.

In 2015

12 companies were spun out of TUT’s research

More than 20 knowledge-based companies were established by students

14 projects were underway to commercialize research results

Societal impact

Collaboration between the University and companies creates new information, expertise and business

At the end of 2015, Kampusareena hosted over 50 companies.

Director of PR and Partnerships
Anne-Mari Jarvelin
Kampusareena helps the University and companies cross paths

The new Kampusareena is the heart of the TUT campus and a venue for encounters between companies from a variety of fields and TUT’s members, including highly renowned universities in the United States and businesses operating in Silicon Valley, ” says Professor Hannu Kärkkäinen. With Kampusareena, special attention has been paid to ecology. In summer, the campus area is further beautified by the building’s green roof. The ecology of Kampusareena has truly adopted the new building and its numerous lounge rooms.

The facilities located in Kampusareena are used for bringing innovations or 3D printing? The Smart Machines and intelligent Machines explain. SMACC is a joint research alliance between Tampere University of Technology and VTT Technical Research Centre of Finland. It provides quick solutions, diverse top expertise and wide cooperation networks targeted at companies, in particular.

"SMACC strengthens the development in the field and offers a one-stop shop for the utilization of large-scale scientific research and commercial utilization of large-scale scientific research and commercial. SMACC’s services are highly accessible, ” notes at the competence centre opening ceremonies. Business Development Manager Risto Kuivanen (VTT) and Professor Kari T. Koskinen (TUT) reveved at the competence centre opening ceremonies.

In the vanguard of the things

Tampere University of Technology was the first Finnish university to join the international Industrial Internet Consortium (IIC). With the membership, TUT has secured a position among the trailblazers of the Industrial Internet of Things (IIoT). TUT companies, students and alumni are part of IIoT, such areas as IIoT platforms, intelligent machines, network technologies and 3D printing.

"For TUT, this membership opens the doors to unprecedented cooperation potential with the other IIC members, including highly renowned universities in the United States and businesses operating in Silicon Valley, ” says Professor Hanna-Kubbikainen from the Department of Information Management and Logistics. The development of the IIoT and IoT will globally promote the growth of new businesses and influence the business models we currently employ. TUT’s membership may benefit from its close industry and institutional companies that are planning to start operations in Finland but have no existing networks or partner unification here. By teaming up with TUT, they will also have the opportunity to benefit from the potential available through IIC.

Making CERN technologies available to start-ups

A new channel for world-class cooperation opened up for Finnish companies in September and October. Tampere University of Technology and CERN signed a mutual cooperation agreement. The agreement concerns the commercialization of the expertise of CERN and the technologies it develops. The Finnish Business Incubation Center CERN Technologies (FBC) provides companies with a connection to the technical expertise and specialists of CERN.

"This new opening will promote the technological and commercial utilization of large-scale scientific projects for the benefit of Finnish industry and commerce,” says Director of Technology Programme at HIP, Professor Jari Rantanen from the Department of Mechanical Engineering and Industrial Systems.

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"Smart machines form one of the profile areas in TUT’s expertise, ” Professor Kari T. Koskinen (TUT) says at the opening ceremonies.

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Smart machines and manufacture expertise

Interested in digital design and modelling, digital service innovations or IIIoT printing? The Smart Machines and Intelligent Machines explains. SMACC is a joint research alliance between Tampere University of Technology and VTT Technical Research Centre of Finland. It provides quick solutions, diverse top expertise and wide cooperation networks targeted at companies, in particular.

"SMACC strengthens the development in the field and offers a one-stop shop for the utilization of high-class research expertise,” Professor Kari T. Koskinen from the Department of Mechanical Engineering and Industrial Systems explains. The facilities located in Kampusareena are offering a one-stop shop for utilization of high-class research expertise and as a venue for business life cooperation. "Smart machines form one of the profile areas in TUT’s expertise. A lot of interesting new research is currently ongoing, with close connections to the business world.”

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TUT has a long history of systematic HR and operations development. delightfully, these efforts have borne fruit and also showed in the results of the staff survey carried out in Finnish universities in 2015.

Among the universities, TUT’s staff gave the highest scores for an individual employee’s own work contents, competence and working conditions. TUT shared the first position in the assessment of community spirit and came in third in the area of well-being at work. When comparing TUT’s results with the results from the previous corresponding survey, positive development could be observed across all areas.

The excellent results are the outcome of systematic work and the staff’s active participation in development measures. TUT’s investments in the development of supervisory work are also bearing fruit and advancing the University’s goal of being the best university employer in Finland.

A functional and competent work community and continuous operational development are also great assets when recruiting new talent. In 2015, TUT made special investments in tenure track recruitment, aiming at professorships. The tenure track is a four-stage career path that enables the employees to strengthen the education and research carried out in TUT’s profile areas.

The beginning of 2015 also saw the introduction of the new Support Services unit, incorporating a significant share of the support services staff of departments and faculties. During the year the unit developed its services to support the University’s fundamental tasks, research and education, as effectively as possible.

A university is never complete. Amidst all the changes and turns, we are well positioned, however. The strong groundwork carried out with our staff lays a solid foundation for creating a new joint university together with the University of Tampere and Tampere University of Applied Sciences.
Päivi Myllykangas is Manager of the Tampere3 process.

Professor Moncef Gabbouj was recognized for his meritorious and productive scientific work.

In the Tampere3 process, Tampere University of Applied Sciences, Tampere University of Technology and the University of Tampere are taking steps to establish an all-new university in Tampere. Päivi Myllykangas took office as the manager of the Tampere3 process, and she believes that Tampere is about to see novel, internationally high-level solutions at the interfaces of research, education and administration as the three institutions unite. “What we need is brave new initiatives and experiments. Tampere3 is a unique process in Finland and it also bears international significance. It allows us to ensure that we will still have a vital community replete with expertise in 2025,” Myllykangas notes. In Myllykangas’ opinion, high-level science carries all the more weight in generating new information and challenging customary mindsets in a world that is becoming increasingly diverse. “We need versatile education and new practices that provide the youth with a strong competence base. It is the proficient workforce and top research that make this region an attractive hub for companies.”

At TUT’s 50th anniversary gala in November, the Industrial Research Fund of Tampere University of Technology handed out various rewards and grants to altogether 73 employees and postgraduate students. The recipients work in research, educational and support services positions at the University. The most substantial acknowledgement, an award for merit in the amount of 20,000 euros by the Tuula and Yrjö Neuvo Fund, was received by Professor Moncef Gabbouj. The award was granted in recognition of Professor Gabbouj’s meritorious and productive scientific work, world-class research achievements in the field of signal processing, and support afforded to researchers in their international networking.

Awards and grants at the Staff Gala

A good lecturer values feedback

“‘In the swim,’ ‘considerate’, ‘easily inspired about the topics studied’, praise the students; ‘supportive’, ‘helpful’ and ‘articulate’, say the colleagues. The Student Union of Tampere University of Technology nominated University Teacher Sami Puurunen from the Department of Physics as the 2015 Lecturer of the Year. In Sami Puurunen’s view, a good lecture is inspiring, challenging and thought-provoking.

“The students do not have to assimilate everything during the lecture. Lectures should also raise questions for later reflection. At the same time, highly administer students who are able to come up with to-the-point questions during the lecture” he states.

In fact, Puurunen finds it least motivating in students’ questions or exam answers that show that the students have truly understood the course contents, often even beyond the course requirements. Whether official lecture feedback, insightful exam answers or a good old sigh from the back row.

Aimsing at a globally attractive university

In the Tampere3 process, Tampere University of Applied Sciences, Tampere University of Technology and the University of Tampere are taking steps to establish an all-new university in Tampere. Päivi Myllykangas took office as the manager of the Tampere3 process, and she believes that Tampere is about to see novel, internationally high-level solutions at the interfaces of research, education and administration as the three institutions unite. “What we need is brave new initiatives and experiments. Tampere3 is a unique process in Finland and it also bears international significance. It allows us to ensure that we will still have a vital community replete with expertise in 2025,” Myllykangas notes. In Myllykangas’ opinion, high-level science carries all the more weight in generating new information and challenging customary mindsets in a world that is becoming increasingly diverse. “We need versatile education and new practices that provide the youth with a strong competence base. It is the proficient workforce and top research that make this region an attractive hub for companies.”

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2015 was a year of major changes in the finances of Tampere University of Technology. The main funding provider, the Finnish state, reduced its funding for the university sector by cutting direct government subsidies. Furthermore, the funding from the Academy of Finland and from Tekes also decreased. The impacts of these cuts reflected both in the University’s business-oriented projects as well as the RDI investments made by companies. To a significant extent, the reduced funding will also impact TUT’s finances in the years to come.

TUT’s balance sheet has remained strong, however, thanks to sensible management of finances. The University’s sound economy will also support our systematic operational development in the long run. TUT’s solvency ratio in 2015 was 94 per cent.

When the times are hard for finance, the foundation form brings welcome benefits. The return on capital of the TTY Foundation can be used for developing our operations. In 2015, returns in the amount of 3 million euros were handed out for the development of educational and research activities.

The retrenchment targeted at higher education by the state usher the higher education institutions to profile themselves, on one hand, and seek closer cooperation, on the other. The ongoing Tampere3 project will promote the cooperation and structural reform of the higher education institutions in Tampere to a substantial degree. The reforms will cover education, research, support services and administration alike. Tampere3 will give rise to strong expertise that supports the growth and success of Finnish industry and commerce.

A strong balance sheet is a sign of sensible management of finances.
PROFIT AND LOSS ACCOUNT (EUR 1,000)

CONTINUING OPERATIONS

2015 2014

Income 59,888 60,748
Income from grants 44,209 44,744
Income from business activities 11,332 11,256
Other income 690 632

Expenses 141,099 142,400
Personnel expenses 92,194 94,899
Depreciation 3,304 2,835
Other expenses 45,601 44,667

Subtotal  -81,211 -81,652

FUNDRAISING

Income 433
Donations 24
Collection proceeds 410

Expenses
Collection expenses

Subtotal  428 0

INVESTMENTS AND FINANCING

Income 15,721 23,667
Expenses  560 18,529

Subtotal  15,161 5,138

GENERAL STATE FUNDING

Funding based on the Universities Act 79,642 82,472

PROFIT FOR THE FINANCIAL YEAR

14,021 5,957

PROFIT BEFORE APPROPRIATIONS AND TAXES

Funds transfers
Income taxes

Surplus (deficit) 13,611 5,953

BALANCE SHEET (EUR 1,000)

ASSETS 2015 2014

FIXED ASSETS
Intangible assets 1,793 1,888
Tangible assets 11,332 9,543
Investments 33,643 33,643
Depreciation 3,304 2,835
Other expenses 45,601 44,667

Subtotal  46,768 45,074

CURRENT ASSETS

Long-term receivables 682 848
Short-term receivables 24,806 25,923
Investments 197,955 191,521
Cash at bank and in hand 21,324 21,064

Total current assets 244,768 239,357

Total assets 291,536 284,431

LIABILITIES

CAPITAL
Fixed capital 170,051 170,051
Fair value reserve 636 9,381
Free reserves 13,196 7,472
Other capital 74,416 66,119

Total capital  258,299 253,023

CURRENT LIABILITIES

Current long-term liabilities 33,237 31,408
Current short-term liabilities 21,324 21,064

Total liabilities 344,660 322,472

Surplus (deficit) 13,611 5,953

FINANCE

TAMPERE UNIVERSITY OF TECHNOLOGY

Board of the TTY Foundation 2015
Managing Director Tero Ojanperä, Chair Laila Korhonen-Jalonen, Chief Executive Outi Halttunen, Vice Chair Professor Sirpa Jalkanen, Chief Director Anttii Ritala, Senior Consultant Anne Stenroos, Project Coordinator Janne Virtanen, Educational Coordinator Sanna Kivistö-Rahnasto, Project Coordinator Jussi-Pekka Tuomikoski, ISP Coordinator Jari Tuominen, Academic Coordinator Anna Lehto, Student representative Tuomas Hirvonen, Student representative Jussi-Pekka Tervo, Student representative Joel Tirkkonen

Academic Board
President Marikka Korkki-Koivisto, Chair Laila Korhonen-Jalonen, Chief Executive Outi Halttunen, Vice Chair Professor Sirpa Jalkanen, Chief Director Anttii Ritala, Senior Consultant Anne Stenroos, Project Coordinator Janne Virtanen, Educational Coordinator Sanna Kivistö-Rahnasto, Project Coordinator Jussi-Pekka Tuomikoski, ISP Coordinator Jari Tuominen, Academic Coordinator Anna Lehto, Student representative Tuomas Hirvonen, Student representative Jussi-Pekka Tervo, Student representative Joel Tirkkonen
### Students

#### Publications and innovations

<table>
<thead>
<tr>
<th>Publications and innovations</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL NUMBER OF STUDENTS</strong></td>
<td>9,904</td>
<td>9,163</td>
<td>8,295</td>
</tr>
<tr>
<td>BSc and MSc students</td>
<td>8,449</td>
<td>7,927</td>
<td>7,137</td>
</tr>
<tr>
<td>Doctoral students</td>
<td>1,455</td>
<td>1,236</td>
<td>1,158</td>
</tr>
<tr>
<td>Last year, the share of women among TUT’s MSc/BSc students was 21% and 27% among the postgraduate students.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>APPLICANTS AND ADMITTED STUDENTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicants (first choice)</td>
<td>4,468</td>
<td>3,924</td>
<td>3,529</td>
</tr>
<tr>
<td>Admitted students</td>
<td>1,460</td>
<td>1,501</td>
<td>1,419</td>
</tr>
<tr>
<td>Women of admitted students</td>
<td>25%</td>
<td>25%</td>
<td>23%</td>
</tr>
<tr>
<td><strong>INTERNATIONAL STUDENTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of international students</td>
<td>1,423</td>
<td>1,342</td>
<td>1,305</td>
</tr>
<tr>
<td>MSc students</td>
<td>801</td>
<td>638</td>
<td>566</td>
</tr>
<tr>
<td>Doctoral students</td>
<td>216</td>
<td>192</td>
<td>205</td>
</tr>
<tr>
<td>Other students</td>
<td>507</td>
<td>512</td>
<td>534</td>
</tr>
<tr>
<td><strong>INNOVATION ACTIVITIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patent applications *)</td>
<td>10</td>
<td>15</td>
<td>22</td>
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<tr>
<td>Received patents</td>
<td>7</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Invention disclosures</td>
<td>82</td>
<td>69</td>
<td>56</td>
</tr>
<tr>
<td>*) applications in which TUT is the applicant or that are based on research conducted at TUT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Placement of Employed Graduates 2013-2015

By region
- Province of Western Finland: 72% 74% 72%
- Province of Southern Finland: 23% 23% 25%
- Rest of Finland: 1% 2% 3%
- Abroad: 4% 1% 0%

By sector
- Private sector: 71% 78% 78%
- TUT: 20% 15% 15%
- Other public sector: 8% 6% 5%
- Entrepreneur: 1% 1% 2%

Degrees Conferred

Share of women in MSc/BSc graduates 2013-2015:
- 23% 24% 26%

Nationalities Among TUT's Employees

Researcher and Teacher Mobility 2013-2015

Visits lasting longer than 1 month
- Outgoing staff: 65 56 127
- Incoming staff: 112 61 40

Visits lasting 1 week to 1 month
- Outgoing staff: 146 117 111
- Incoming staff: 85 75 74

Person-years 2013-2015
- Teaching staff: 397 373 323
- Research staff: 779 745 758
- Research assistants: 259 235 213
- Laboratory staff: 77 74 65
- Support staff: 348 355 354
- Total: 1,860 1,782 1,713

Facility and Staff 2013-2015

The number of hourly paid teachers is not included.

Staff 2013-2015

Share of international employees 20% 22% 21%

TUT's staff incorporates 52 nationalities.