BRNO UNIVERSITY OF TECHNOLOGY ANNUAL REPORT 2012

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is submitted as required by Act no. 111/1998 Coll. concerning universities. It was made according to the university activity guidelines for 2012 published by the Ministry of Education, Youth, and Sports. To a wider public, it presents data and major results of all the activities carried at and related to Brno University of Technology as part of the Czech and international higher education system, research and social activities.

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OBSAH

RECTOR‘S WORD

The 2012 annual report of Brno University of Technology reviews a year in the life of our university in all the directions its activities are taking. Although it records all BUT's research and teaching achievements and reports on its creative activities in science, engineering, economy, and arts, I would like to use this opportunity to highlight some of them. An important fact is that, in 2012, construction work and research activities were launched of virtually all of the RDI operational programme faculty regional projects as well as of the projects implemented by the BUT European centres of excellence (Central European Institute of Technology (CEITEC) and IT4Innovations). The nearly half-year delay of the CEITEC project was caused by some building companies lodging appeals against the results of tenders to the Office for the Protection of Competition, which finally validated virtually all BUT's decisions. The projects started as first – NETME in particular – continue to finish the initial stages with new or reconstructed buildings being put into operation for research teams to start their work as foreseen by the approved project. Even if it is still early to assess the decentralized projects steered by independent teams with an overall evaluation envisaged in 2014, it can be seen already today that the first out of the total 9 billions of CZK are being spent without any major problems (more specifically, 3.5 billion in 2012). It should be stressed that this is all taking place while the university is fully operational fulfilling all the duties of a higher-education institution. We are systematically preparing ourselves to become Europe's and world's top research university in the years to come. Whether we will be successful or not depends on what people are going to work on the projects today. At present, BUT faces an important task of providing enough young researchers with top expertise for particular regional centres and BUT European centres of excellence. In the long run, BUT officials emphasize the quality of university activities both in research and development and in teaching. This is corroborated by the fact that, for a long time, Brno University of Technology has been among the four Czech universities rated positively by the prestigious QS World University Rankings.

Much attention is paid to building a good university assessment system, for the second year managed through an individual national project steered by a ministry-of-education committee headed by BUT representatives. At BUT, there are many traditional forms and particular methods for enhancing the quality of students and expertise of research workers of which I would like to mention just one – this year the university provides each of the 500 best secondary-school graduates in the first years of their university studies with 500 CZK in scholarship. We also effected an improvement of the engineering education support concept formulated during the holiday months together with representatives of the Czech Chamber of Commerce, industry unions, officials of the Czech Ministry of Industry and Trade and Ministry of Education, Youth, and Sports. The objective is unequivocal – next and the subsequent years, we want to create favourable conditions attracting to BUT the best students, teachers, and researchers.

It is not a commonplace occurrence at a university (even one outside Brno) that almost all of its graduates find jobs within a year. Demand for graduates from technical universities exceeds the numbers supplied by BUT because of the capacity limits kept artificially low by an administrative order on the number of paid students admitted to study. Together with the Ministry of Industry and Trade, with industry unions, and with the Czech Chamber of Commerce, it is necessary to persuade the government to give preference to those fields in which it is interested. These include mostly mechanical and electrical engineering, informatics, and other technical fields. No doubt, the planed government spending calls for graduates from technical universities. The government should make it clear that political scientists, philosophy, sociology, and some other humanities graduates are more than abundant and that it no longer can afford the liberal costly attitude based on a belief that, eventually, all this is going to be resolved by the labour market. It is necessary, for protecting the strategic interests of the state if not for anything else, to adopt a policy of positive discrimination towards some fields of science and engineering.

The next thing I would like to point out is the constant improvement of BUT's strength, cooperation of the university with industries and commerce. Within the EU Education for Competitiveness Operational Programme, BUT and the Regional Chamber of Commerce were able to build a network of universities cooperating with more than 170 companies of the South Moravian Region. In addition, again together with the Regional Chamber of Commerce, we are getting prepared for building a technology park in close vicinity to the Central European Institute of Technology. At the level of faculty centres of excellence, projects of cooperation between the university and companies are emerging according to particular projects approved. Having looked back on the year 2012 behind, this annual reports now opens towards the new challenges of 2013 and beyond. Let us believe now as before that Brno University of Technology will further advance to success and stay an important Czech technical university with international renown. My thanks go to all the members of academic community and other university employees that have contributed to this by their long unselfish and responsible work.

Karel Rais, rector of Brno University of Technology

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SIGNIFICANT EVENTS

AWARDS

In January, prof. Ing. Antonín Píštěk, CSc. was awarded a City of Brno Prize. He received the highest city award from the Mayor of Brno for his extraordinary engineering achievements. Professor Píštěk has significantly contributed to the advancements of the domestic aviation industry and its products.

In April, Jan Pyk, rector of University of Economics in Katowice, awarded a medal to BUT rector Karel Rais. This was in reward for long cooperation between the two universities working on joint educational and research projects of a European scope.

In April, Doc. Ing. Eva Münsterová, CSc. was given a Gold Medal of the Technical University of Liberec. These medals were awarded to outstanding academics by rector of the Technical University in Liberec Zdeněk Kůs on the occasion of the 20th anniversary of the Faculty of Economics.

In October, the BUT Scientific Board conferred an honorary doctorate upon Robert A. Weiss from the University of Akron, USA, a leading researcher in macromolecular chemistry, and upon Profesor Hans Müller-Steinhagen, rector of Technical University in Dresden and a professional-engineering scientist of world renown.

In September, Prof. Ing. Petr Vavřín, DrSc. received a gold medal of the International Engineering Fair in Brno. He was given this award for his lifelong work in engineering and innovative achievements.

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In an academic meeting held on the occasion of the anniversary of 17th November and the foundation of the first Czech technical university in Moravia, BUT awarded prizes to distinguished academics, best students, and other persons of excellence that have contributed to the development of the university. Rector of BUT Karel Rais gave the highest award – BUT Gold Medal – to prof. dr. hab. Janusz Wojtyla from University of Economics in Katowice for long cooperation on joint international degree programmes, and a merit award to Mgr. et Mgr. Tomáš Hruda for his work on the implementation of the Central European Institute of Technology.

ANNIVERSARIES

In September, the BUT Faculty of Business and Management celebrated its twentieth anniversary. At a gala evening, academics contributing to the faculty development and distinguished persons were rewarded. The faculty also awarded prizes to teachers from abroad participating on its international development. Among them was prof. Wlodzimierz Karaszewski from Torun, who for many years had participated in a joint international programme.

It was ten years from the establishment of the Faculty of Information Technology. However, the history of informatics as a study field at BUT goes back to 1956. This fact and the present achievements in science and research were remembered by the academic community in a special meeting where also outstanding academics and scientists and industrial partners were rewarded. A Museum of Computing Technology was opened on the occasion of the 10th anniversary of the BUT Faculty of Information Technology. Exhibited are mostly devices and pieces of equipment manufactured in or related to the then Czechoslovakia. Many of the exhibits are still working, the oldest one being a mechanical calculator made in the 1950's.

The BUT Archives commemorated its 20th anniversary by several events. An exhibition called „Archivstory" presented the archives' history opening its depositories with the rarest historical documents.

In November, the BUT Faculty of Chemistry celebrated the 20th anniversary of its renewal. In a special meeting held at the faculty campus on this occasion, a centre of materials research constructed as part of the EU RDI operational programme was put into operation.

EVENTS

In 2012, the construction of a new FEEC educational complex was finished at Kolejní 5. Costing almost 1 billion CZK, the building was was put into operation on 20th December. The complex started to provide conveniences for as many as 7 faculty departments formerly situated in different places at Technická 2, Kolejní 4, and Purkyňova 118. The BUT campus building can be seen as the final step of an effort to concentrate all faculty research and teaching facilities in a modern educational complex providing conditions favourable for improving the quality of teaching Master's and, especially, Bachelor's courses. Of advantage is also its direct link with new regional CVVOZE and SIX research centres, built with the faculty's participation and especially with the CEITEC centre of excellence.

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A national patent on a device for optical recording of the electric activity of live tissue was taken out by doc. Ing. Jana Kolářová, Ph.D., doc. Ing. Milan Chmelař, CSc., and prof. Ing. Ivo Provazník, Ph.D. from the BUT Faculty of Electrical Engineering and Communication. Connected with a light source and an optical probe, the facility makes it possible to continually monitor the electric activity of live tissue by using a fluorescent pigment bonded to cell membranes. It is used at a laboratory of experimental cardiology of the Department of Physiology of the Masaryk University Faculty of Medicine as part of joint research projects.

In May 2012, the Danish embassy in the Czech Republic held a Green Inspiration seminar at the BUT Faculty of Civil Engineering. It was intended mostly for doctoral students and academics concerned with the application of energy-saving solutions in practice. In a historic meeting room of the faculty, the seminar was opened by his Excellence Mr Ole E. Moesby, Danish ambassador in the Czech Republic.

In May 2012, a Korea-based firm MIDAS IT and the BUT Faculty of Civil Engineering held a conference on advanced FEM solutions for bridge and geotechnical engineering. As a sponsorship gift from MIDAS IT to the Faculty of Cicil Engineering, Mr DaeKyo Koo handed over to vice--rector prof. Drahoš Novák 115,000 CZK in 30 MIDAS Civil, GTS and FEA teaching licences. The conference was attended by 140 designers, research workers, and students from 45 firms and 5 universities.

On 19th December 2012, as a result of a completed accreditation process, the Czech Institute for Certification renewed the accreditation certificate of the BUT Institute of Forensic Engineering. The new accreditation includes a new service of certifying real estate brokers.

In 2012, headed by doc. RNDr. Ivana Márová, CSc., a team from the Centre of Materials Research of the BUT Faculty of Chemistry took out a patent for a method of producing environment-friendly plastics from waste deep fry oil. Ways are now being explored of using this technology in China. The Chinese marketplace is entered by Czech-based Nafigate Corporation, a company concerned with technology transfer and commercial use of interesting inventions.

In 2012, the BUT Faculty of Fine Arts was successful in getting a Digital Sculpture and New Media Studio project off the ground. Financed from the Education for Competitiveness Operative Programme, this is a project to innovate accredited degree programmes of digital sculpture and design, organize workshops, take part in international conferences, cooperate with partner universities abroad, organize individual internships and improve the expertise of the solution provider's team in 3D. Apart from the Faculty of Fine Arts, also the BUT Faculty of Mechanical Engineering and Faculty of Architecture as well as the Faculty of Informatics of Masaryk University in Brno participate in the project.

In January 2012, a 21st ExFoS 2012 annual conference of forensic engineering was held in three sections: analysis of road accidents, appraisal of motor vehicles, machines and equipment in, civil engineering and real estate appraisal, forensic environment technology.

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For a week in June 2012, a workshop was held at the BUT Faculty of Architecture on wooden structures led by Professor Martin Rajniš. The purpose of the workshop was to bring closer to the students of the faculty the building craft and the way an architect thinks, with the implementation of a small task – the construction of a wooden cupola - used as an example.

At the BUT Faculty of Architecture, a project was undertaken to revitalize a former factory, TOMIOKA, in Japan. Led by Professor Helena Zemánková, final-year students spent ten days at TOMIOKA in the Gunma prefecture in Japan. Their task was to explore the former factory, take pictures, perceive the urban context, debate with the city officials and inhabitants and the director of World Heritage Registration of the Gunma prefecture. With his approval of further cooperation, degree projects have been assigned.

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STUDENTS

In June, BUT hosted the final of the Joseph Fourier contest for young computer science research workers. Filip Konečný, a Faculty of Information Technology student, won the third prize.

In September 2012, Ing. Ondřej Mikšík from the BUT Faculty of Electrical Engineering and Communication with his degree project won the Degree Project of the Year and, in October he received the first prize in ACM Student Project of the Year competition attended by 1,513 participants from thirteen Czech and Slovak universities. In December then, he became the winner of the Siemens Prize in the degree and doctoral project category.

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In 2012, TU Brno Racing, a BUT student team, participated in Student Formula competitions, taking place in Silverstone, UK, Győr, Hungary, and Varano de'Melegari, Italy. Over the year, the team's results improved. In the last race of the season in Varano de'Melegari, they came in third in Engineering Design and fourth in Cost Presentation. Thanks to its design conception, the Dragon 2 formula became a vehicle with the lowest fuel consumption. This contributed to the team being placed 12th in a competition of 42 European and non-European teams.

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In February 2012, BUT students received six prizes in the Talent Design 2011 international competition. World-renowned architect Eva Jiřičná handed over the second prize in the main-prize category to Kateřina Soudková, a BUT architecture student, for her ABC of Graphic Design, a Special prize of the jury and an Ing. Zdeněk Jünger prize to David Rajchl, an industrial-design student for his design of airbath, a bath tub for the disabled. Jakub Novák, studying the same field, received three prizes for his caravan design – a special prize of the jury, a prize of the WLG Invest board, and a ROKO-MOTOR, s. r. o. prize.

Pavlína Kolcunová, a BUT architecture student won an ArchiCAD prize for the 3rd place with her degree project, Soundscape Brno, Hády Quarry in the 13th annual review of degree projects 2012 organized by the Czech Chamber of Architects.

Students of the BUT Faculty of Chemistry won the first, second, and third prizes in all the sections announced at a student research conference held by the Slovak University of Technology in Bratislava. The first prizes in the environmental engineering and technology of glass, ceramics, and cement categories went to Bc. Václav Chytil (analysis of tar produced by biomass burning) and Bc. Ondřej Koutný (use of metakaolin in the technology of aerated concrete).

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In 2012, the BUT Faculty of Fine Arts started a series for publishing the works of the faculty recent doctoral graduates. Two new titles appeared in this FFA Ph.D. series: Selected Post-Conceptual Approaches in the Contemporary Czech Painting, a theoretical publication by Petr Dub and a Dictionary of Anonymity by Zuzana Janečková.

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During the summer holiday, the VOX IUVENALIS choir, a long-time representative of BUT, won the first prize at an international festival in Lithuania. This year, 11 choirs competed from the Czech Republic, Italy, Lithuania, Latvia, Poland, and Slovenia.

For several years, BUT has provided support for a Brno and South Moravia Without Frontiers programme, which includes all-year sports, charity, and integration projects. Crowning the year's work was an annual series of three events in May. A sporting day took place at the BUT Pod Palackého vrchem sports campus intended for disabled children and adults, pupils and students and children from children's homes. Listed in EAA Events Calendar, an international meeting of 200 athletes from European and African countries followed. The last May event was a 5th annual Handicap Open – Grand Prix of Brno and South Moravian Region. A prestigious international meeting of disabled athletes, it was sponsored by the International Paralympic Committee as one of the most important sports event for European disabled athletes. About 200 participants were competing on the BUT sports ground to meet the qualification standards for the London Paralympiad.

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MAJOR PROJECTS

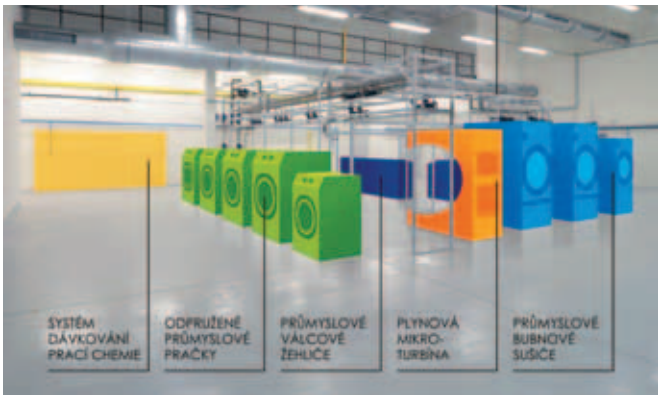
CEITEC – Microtomograph

Central European Institute of Technology (CEITEC)

CEITEC is a project of Brno universities and research institutions (Brno University of Technology – 36%, Masaryk University in Brno, Mendel University in Brno, University of Veterinary and Pharmaceutical Sciences Brno, Institute of Materials Physics of the Academy of Sciences, and Veterinary Research Institute), which together form a European centre of excellence in natural life sciences, advanced materials and technologies. Its main mission is to build a major European centre of science and learning with state-of-the-art conveniences and best conditions for leading scientists. Its results will contribute to the improvement of the quality of life and human health. It was the June international rating of science that raised the centre to worldwide prominence. Over twenty experts with some renown from the world's top scientific institutions came to Brno to evaluate the results of the work of over 400 CEITEC researchers. Within CEITEC BUT, the experts rated sixteen research groups. Although still at the beginning, one third of the CEITEC's research groups were rated as best, which means that the research they conduct is already comparable to the world standards in a given field. Another milestone in the centre's development was the laying of foundation stones to buildings to be built for CEITEC. Four CEITEC pavilions with an area of 14,000 sqm are being erected at the BUT Pod Palackého vrchem campus where they will form a logical counterpart to the BUT buildings, the Technology Incubator, and South Moravian Innovation Centre. The foundation stones were laid on 24th September, in the presence of minister of education, youth, and sports Petr Fiala and regional authority chief executive Michal Hašek. The CEITEC BUT pavilions should be finished and put into operation in 2014. In the future, the CEITEC's shift towards international scientific environment will certainly be accelerated by a change in the position of chief executive. Tomáš Hruda, the former chief was replaced in November by Markus Dettenhofer. He was the winning candidate in an international tender. An experienced manager in research and development , he graduated from a prestigious university in Berkeley and Harvard. His priority is making CEITEC a research centre with international renown attracting further top scientists. The approval by the Ministry of Education, Youth, and Sports of the first doctoral inter-university programme can also be seen as a key CEITEC BUT event of 2012. The Advanced Materials and Nanosciences programme will offer the students an opportunity to learn about the new findings and use the often unique equipment and technology of all the three top institutions. Thus, in September 2013, the City of Brno and Brno University of Technology will receive another opportunity, unique within the Czech education system. Already in 2012, CEITEC signed two cooperation agreements with prestigious European research centres. Concerning natural life sciences, an agreement was signed with the European Molecular Biology Laboratory in Germany, and another one with the Imperial College of Science, Technology and Medicine in London on materials research. In both cases, this was the result of a series of joint workshops held in late 2011. In addition to these two official agreements, CEITEC representatives have talks on cooperation with other research centres such as ENEA, Italy, VIB, Belgium, ETH Zurich, Switzerland, RIKEN, Japan, and Columbia University in New York USA. CEITEC' s scientific cooperation is of course not restricted to research institutions and universities comprising also firms and companies, directly or indirectly, involved in research and development as part of their activities. The year 2012 was particularly fruitful with new research findings. The CEITEC scientists won several domestic and international prizes for their discoveries and research outcomes, which were published in prestigious journals and on which patents were taken out (a unique holographic microscope enabling the observation of living cells without using contrast agents). Last year, most of the state-of-the–art equipment was bought to be placed in the core facilities, to be available under clearly defined conditions to users from universities, research institutes, and industries. For a long list of such devices, let us at least name a microtomograph, the only device in the Czech Republic to have two X-ray sources, a micro-focus for observing larger objects sized tens of centimetres, and nano-focus to analyze samples with sub-millimetre resolution.

IT4Innovations centre of Excellence

IT4Innovations is a unique project to build a national centre of excellent IT research. The new centre will concentrate a number of IT-related research fields to achieve their development. The installation by 2014 of an extremely powerful supercomputer will be part of the project, which at that time should be among the world's 100 most potent computers. Five institutions have joined to prepare the project: VŠB – Technical University of Ostrava, University of Ostrava, Silesian University in Opava, Brno University of Technology, and Institute of Geonics AS CR. The IT4Innovations centre of excellence should serve both as an academic and applied research centre. Being the basis of the future centre and forming a framework for all other scientific disciplines, computing will be formulated into four interrelated key parts: 1) Information for People (IT4People) – research focusing on an improvement of the quality of life by modern information technology. 2) Supercomputing for Simulations (SC4Simulations) – for resolving problems in industry, modelling in natural sciences and nanotechnologies (shape optimisations, materials design, biomechanical simulations). 3) Embedded Computing for Innovations (EC4Innovations) – research of embedded control systems in mechatronics and innovative medicine. 4) Theory for Information Technology (Theory4IT) – a field oriented towards basic research concerned mostly with the design of new non-traditional computing methods (knowledge mining, theory of anthills). The IT4Innovations project was approved by the European Commission on 21st June 2011. In 2012, the construction of an IT research centre was started at the faculty-of-information-technology campus. The building will be finished in 2013. As part of a start-up project, employees were hired with all the monitoring indicators complying with the plan. ▽



Research of an energy-consuming process – a laundry of the future

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NETME Centre

(NEw Technologies for Mechanical Engineering) – was the first Brno project to receive an EU SF funding. Officially launched on 1st January 2010, this is a project of the BUT Faculty of Mechanical Engineering to be finished on 31st December 2013. Based on the successful previous research and development work of a number of faculty research teams and its nature, the centre is divided into five divisions (power engineering, processes and ecology; mechatronics; virtual design and testing; aircraft and automotive technology; progressive metal materials). The finishing of the construction of the central D5 building is one of the project's milestones in 2012. Being erected in the place of a former old faculty facility, this building offers unique rooms and research and development facilities, the needed administrative parts, training, and meeting conveniences. It may be said that, thanks to the activities of the research workers involved, it is possible to fulfil or even be ahead of the planned objectives as measured by the monitoring indicators (the outcomes of the R&D activities such as publications in impacted journal, patents taken out, applied research outcomes). It is especially cooperation with the commercial sphere that testifies to the excellence of the research teams involved, which are successful in continually increasing the volume of applied research. In contrast to other projects, NETME Centre need not be preoccupied by being not able to meet its obligations in terms of future income from contractual research, coming up already now with excellent results. Despite many obstacles such as those given by the overcomplicated rules imposed by the ministry to inviting tenders, a number of key devices and appliances could by purchased by the end of 2012. Significant progress was made in reconstructing the labs and testing rooms used on a long-term basis. It should also be emphasized that the research activities of the centre staff are not restricted only to the facilities and equipment of the buildings situated at the faculty campus, but also take the form of studies for renowned firms or data collection or measurement directly in industrial plants, which also provides a feedback for further research and development.

AdMaS research centre

In early 2011 the implementation started at the BUT Faculty of Civil Engineering of a project to build an Advanced Building Materials, Structures and Technologies centre (AdMaS), for the research, development, and applications of advanced materials, structures, and technologies not only in building but also in transport and infrastructure of cities, villages and landscape. Financed by 818,000 CZK from the RDI Operational Programme, priority axis 2, the construction of the AdMaS campus started in 2012 at Pod Palackého vrchem. The actual construction work started on 11th December by laying the foundation stone accompanied by a workshop of the centre's young talented research workers and a press conference with the BUT officials.

In early 2012 then, the first 20 research projects were launched (GAČR, TAČR, and MPO projects) for 16.3 million CZK. Also contracted research (61 research contracts for 4.6 million CZK) was initiated. New applications were submitted for new national and international research projects. Several state-of-the-art devices were also purchased. These included rolling noise and macro-structure, and transport-surface planarity measuring devices, XRD with Rietveld refinement, UV-VIS photometer, and others. The purchase of further equipment is planned for 2013 and the first half of 2014. At the end of 2011, the AdMaS centre employed 88 researchers and 38 members of an implementation team.

Centre of Sensor, Information, and Communication Systems (SIX)

The implementation of a project to build such a centre started in August 2010. By the year end, most of the centre's laboratories were finished. At present, the remaining five pieces of equipment are being purchased of the total 94 devices, measuring systems, and experimental infrastructures. These are sophisticated and unique tools made just by one or two suppliers. Thus, because of their monopoly position as well as due to a misconceived law on public contracts and very little responsiveness on the part of the Steering Body, the other purchases are delayed. According to the original plan, until the end of 2012, the focus should have been on the construction of the SIX laboratories with a trial operation launched only on 1st January 2013. As the new instruments bought in 2012 began to attract the attention of partner firms and made it possible to apply for grants for research at a qualitatively different level, research began a year sooner. In 2012 the SIX Centre offered 7.5 full-time research jobs (not paid from the starting grant), won 22 million CZK in new grants for 2012, received 3.6 million CZK in contracted research, and published 16 papers in impacted journals. The SIX Centre team prepared an Emerging Sensor, Information and Communication Systems (E-SIX) project, which from 2014 to 2018 should support the basic research conducted at the centre as part of a national sustainability programme. SIX places much emphasis on basic research financed from research plans in previous years. The reason is that this helps to build a knowledge database that can later be used by applied research projects. As of 1st January 2013, using a starting grant, the centre employed 145 researchers for an equivalent of 46.8 full-time jobs.

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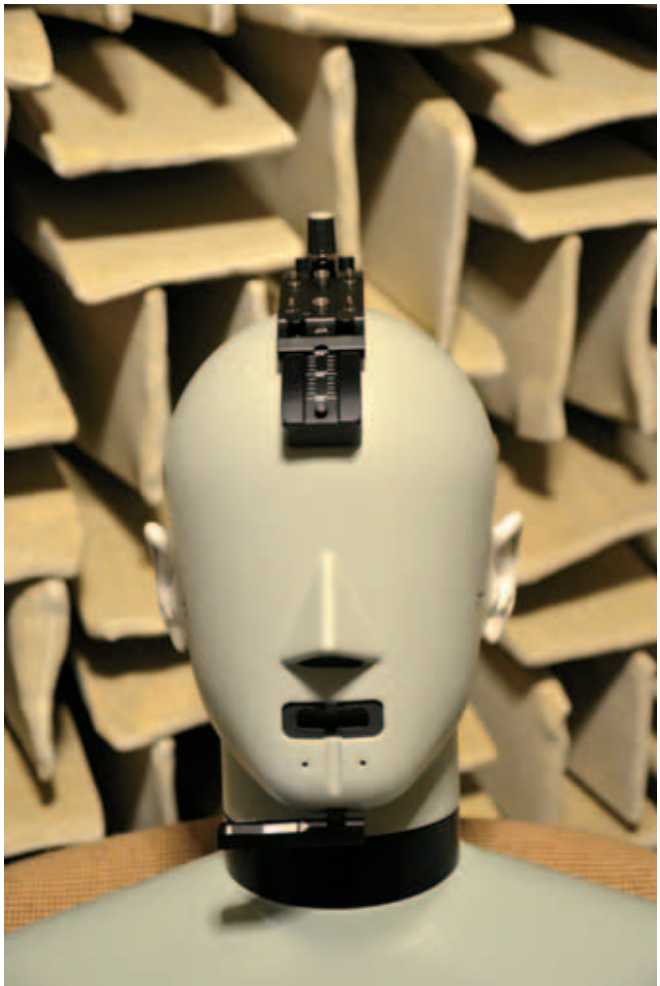
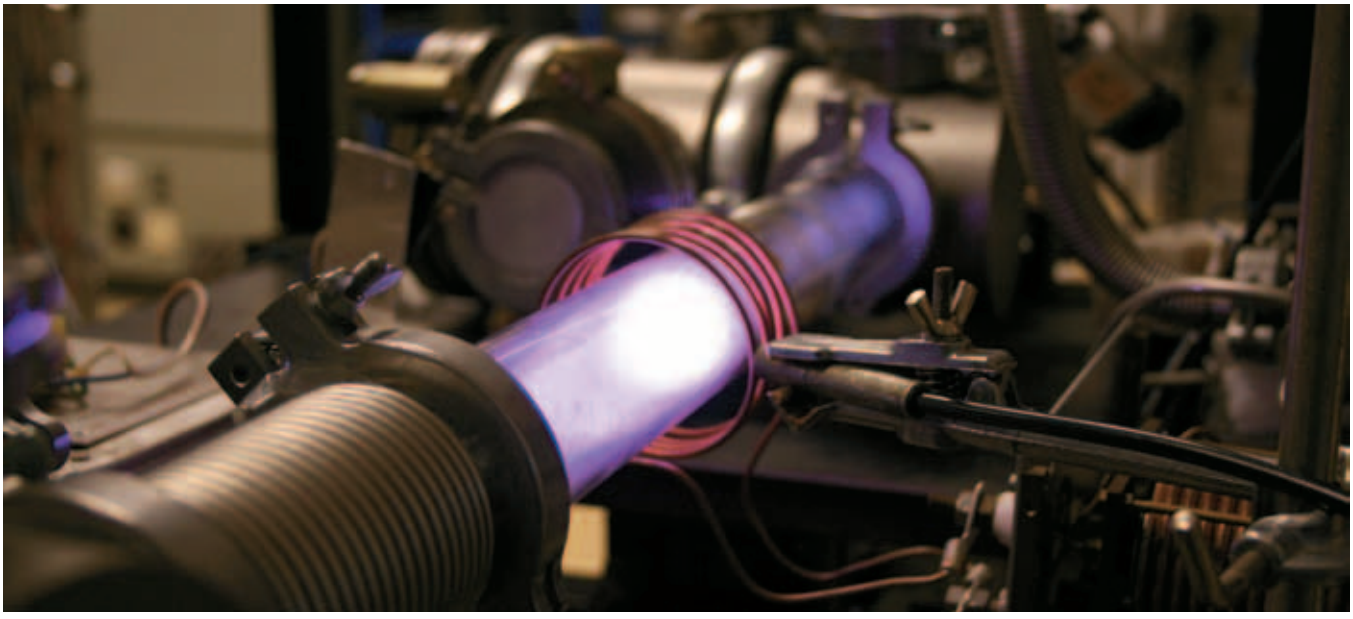
Head and Torso Simulator Type 4128C



Materials Research Centre

As part of the BUT Faculty of Chemistry, the Regional Centre of Materials Research was officially put into full operation in November 2012. The date was chosen to commemorate the anniversary of the faculty's renewal. It is the centre's advantage that its interdisciplinary staff consists of experts in chemical and structural analysis, physical chemistry, biotechnology and biochemistry, physics, inorganic and organic syntheses. They are concerned with the research of inorganic materials, advanced organic materials, and biomaterials. Established through an RDI Operational Programme project, it received over 200 million CZK to purchase instrumental equipment and research conveniences. Thus, more than 60 devices were bought using the European subsidy some of them being unique nit only in the Czech Republic but also in Central and Eastern Europe. Although the project is still at its starting stage, several major discoveries have been made by its staff, which augur well for the centre's sustainability and even after the European subsidy runs out in late 2013. Today the Centre cooperates with over 50 companies in contracted research. More than 70 researchers participate in the project supervising tens of Bachelor's. Master's and doctoral degree projects. The centre's mobility conveniences are being used by over 100 students. Among the successful outcomes of the research conducted at the Centre is the discovery made by a team led by doc. Ivana Márová. They discovered a method of turning waste oil into environment-friendly bioplastic. Put simply, a used bottle of soft drink, for example, could be just thrown away into a garbage bin or put on a compost heap letting nature do its job quickly of breaking it down into its component parts. A technology licence to produce bioplastics has already been sold and is heading for Asian markets. ▽

One of the most prestigious Asian schools, National University of Singapore, and its centre of nanotechnology has offered cooperation on the development of further applications. A team led by prof. Miloslav Pekař is conducting research on basic and applied research of biocoloid systems focussing on their use in medicine, pharmacy, cosmetics, and ecology. A high commercial potential is also expected of the research of the use of hyaluronic acid for wound healing dressings. Another of the research team do research of advanced organic materials. With their papers on electronics and photonics, researchers around doc. Martin Weiter were very successful in implementing large European projects cooperating with companies such as Merck, Phillips, and Fiat. The scientific findings of experts led by Jaromír Havlica helped connect application and research spheres, specialising mainly in applications of secondary raw materials mostly in power and metallurgic industries. In 2012, the Centre received accreditation for a Chemistry for Medical Applications course. It concentrates on the use of nanotechnologies and provides the students with further knowledge about disciplines required for the development of medical applications. Thus, the new course reflects the current requirements of the labour market educating students in several disciplines including technical chemistry and the basics of the current advanced technologies (nanotechnology, biotechnology, functional materials and others). The main objective of the Materials Research Centre is to accelerate the technology and knowledge transfer to practice. The results achieved by the Centre over a relatively short period show that using the subsidy for buying state-of-the-art devices recruiting human resources, and ensuring the future of materials engineering students is the right way of implementing the concept of an innovative society. http://www.materials-research.cz/cz/



Materials Research Centre – Device for developing and using plasma – the plasma developed

Professor List Science and Technology Park

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Centre of Research and Use of Renewable Energy Sources

2011 was the third implementation year of a project to build a research centre concentrating major research, development, and innovation capacities for work on the comprehensive task of renewable energy sources. Members of the research team are concerned with open problems related to chemical and photovoltaic cells, electromechanics, electrotechnology, electric power engineering, electric drives, and industrial electronics. The research centre has the following research programmes:

1. Electromechanical energy transformation,
2. Chemical and photovoltaic cells,
3. Generation, transmission, distribution, and use of electricity.

Supported by the RDI operative programme, the project aims not only to conduct research but also to intensify cooperation between the university and the application sphere and to accelerate the transfer of new technologies to practice. The foreseen applications include environment-friendly transportation systems, new forms of electric energy accumulation, and diagnostics of a switching arc in circuit breakers. The project was subsidized by more than 260 million CZK with 221 million CZK coming from EU and 39 million from the government budget. 200 million CZK will be used to buy state-of-the-art laboratory equipment . In 2012, the purchases made for 18 million CZK included a high-capacity system for storing electric energy, calibration system, sputtering device, photovoltaic-panel tester, and a 85 kW dynamometer. At year end the centre employed 74 research workers. Also, the construction started of a new building for the Centre – Professor List Science and Technology Park.

E3car Nanoelectronics for an Energy Efficient Electrical Car

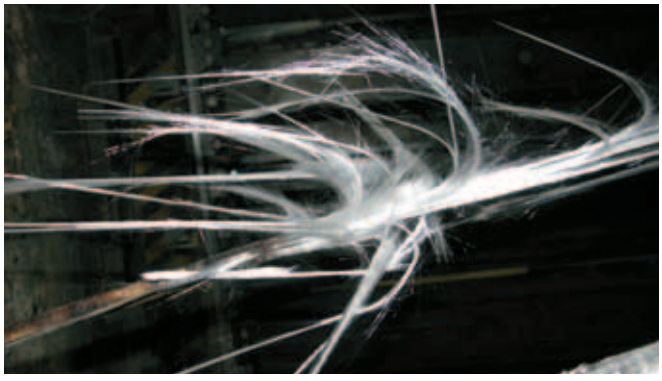
(Faculty of Electrical Engineering and Communication) the project aims to enable major advances in the design of nanotechnologies, parts, miniaturized systems for the next generations of electric vehicles and accelerate industrial and commercial applications to electrical vehicles and cars. The project should increase the efficiency of electric power by raising mobility by 35 percent as compared with the current technologies. This will enable lower consumption of primary energy and raw materials reducing drastically the CO2 emission levels towards zero by using solar energy.

The E3Car project is focused on the research and development of superpower and high-voltage electronic and nanoelectronic circuits and intelligent microsystems for electric cars, particularly power and high-voltage technologies, parts, and circuits for output transformation, energy renewal, output control, power modules, connection to a network of power stations and electronic systems for increased flexibility and quicker upgrade. As one of the FP7 European projects, the E3Car Nanoelectronics for an Energy Efficient Electrical Car project is coordinated by Reiner John from Infineon Technologies AG, Germany. The project consortium consists of 33 European partners including two universities and six research institutes and associations..

Durable Concrete Structures

As part of a TIP programme of the Ministry of Industry and Trade, the BUT Faculty of Civil Engineering implements a research project called Durable Concrete Structures With Increased Resistance to Fire and Aggressive Environments. It investigates the behaviour of concrete structures exposed to high temperatures during a fire. Attention is also paid to the behaviour of such structures in an aggressive environment where composite materials are most likely to be used. In fire tests of real ceiling panels, a system of pre-stressed fiber-reinforced polymers (FRP) was used developed in previous years at the Faculty of Civil Engineering. Ceiling panels with non-prestressed reinforcement were used as a control sample. The results of the experiments show that, despite a somewhat problematic behaviour of the FRP materials at higher temperatures, composite reinforcement can be applied in situations with heightened risk of fire. Of course, the design and finish of the resulting elements must be tailored to specific requirements, but these are just minor deviations compared with the manufacture of elements with classic steel reinforcement. In view of the positives obtained by using FRP reinforcement (thinner covering concrete layer, that is, material saved, higher resistance to aggressive environments, etc.), it is clear that this opens space for much wider application of composite structures. The project's last year's outcomes included the technology of manufacture of prefabricated slabs and their inclusion in the product lines offered.

▽



Glass fibre reinforced polymer broken during a fire test

A sample holder in front of a device for mass spectroscopy of evaporated atoms (Laboratory of surfaces, thin layers, and nanotechnologies, Institute of Physical Engineering of the BUT Faculty of Mechanical Engineering)

△

Nanostructures to Study Nanoworld

Nanostrutures are created and studied in the dust-free labs of the Institute of Physical Engineering of the Faculty of Mechanical Engineering to study the nano-world physical phenomena. This study develops new fields of physics such as plasmonics and spintronics. These nanostructures (plasmonic aerials, magnetic nanowires) are also diagnosed in dustfree laboratories of the institute's international partners (Imperial College, Laboratoire Louis Néel, Grenoble, France). This also involves work on research projects such as MSM0021630508, Centre of Basic Research (LC06040) or a project of the Nanotechnology for Society programme or newly approved projects such as a UNIVSEM project or the AMISPEC Centre of Competence of the 7th Framework EU Programme in which leading domestic and international institutions and companies participate (mainly the Brno-based TESCAN). Thanks to the above projects, a team was created of more than twenty-five doctoral students and young researchers. Students also participate in nanostructure research working on their own projects of the NPVII MSMT2E-08017 programme (Human Resource Development) coordinated by the institute in which 32 junior projects have been assigned each receiving an average of about 100 thousand CZK in funding.

Experimental BUT airplanes

In late 2009, the BUT Institute of Aerospace Engineering finished the development of a BUT 001 Marabu airplane. Test-flown in 2010, the aircraft passed a series of flight measurements. The first testing stage was finished in August 2011. The development still continues. At present, the BUT Institute of Aerospace Engineering and its industrial partner, První brněnská strojírna Velká Bíteš, are finishing the preparation of a prototype of BUT 061 Turbo, an experimental aircraft driven by a TP-10 motor designed and manufactured by PBS Velká Bíteš. The basis used for the design of BUT 061 was the design of the original BUT 001 Marabu. The aircraft is intended to serve as a flying laboratory to test a new driving unit. Currently, a new experimental BUT 051 RAY aircraft is emerging at the institute with electric drive. Participating on the project is also the BUT Institute of Power Electronics and Electronics and the JIHLAVAN airplanes Company. The airplane was again built around the design of BUT 001 Marabu.

▽

BUT 061 Turbo airplane

2



BASIC DATA

a) Full name of the public higher-education institution, acronym used, address, names and addresses of all BUT faculties

Brno University of Technology, BUT, Antonínská 548/1, 601 90 Brno, http://www.vutbr.cz

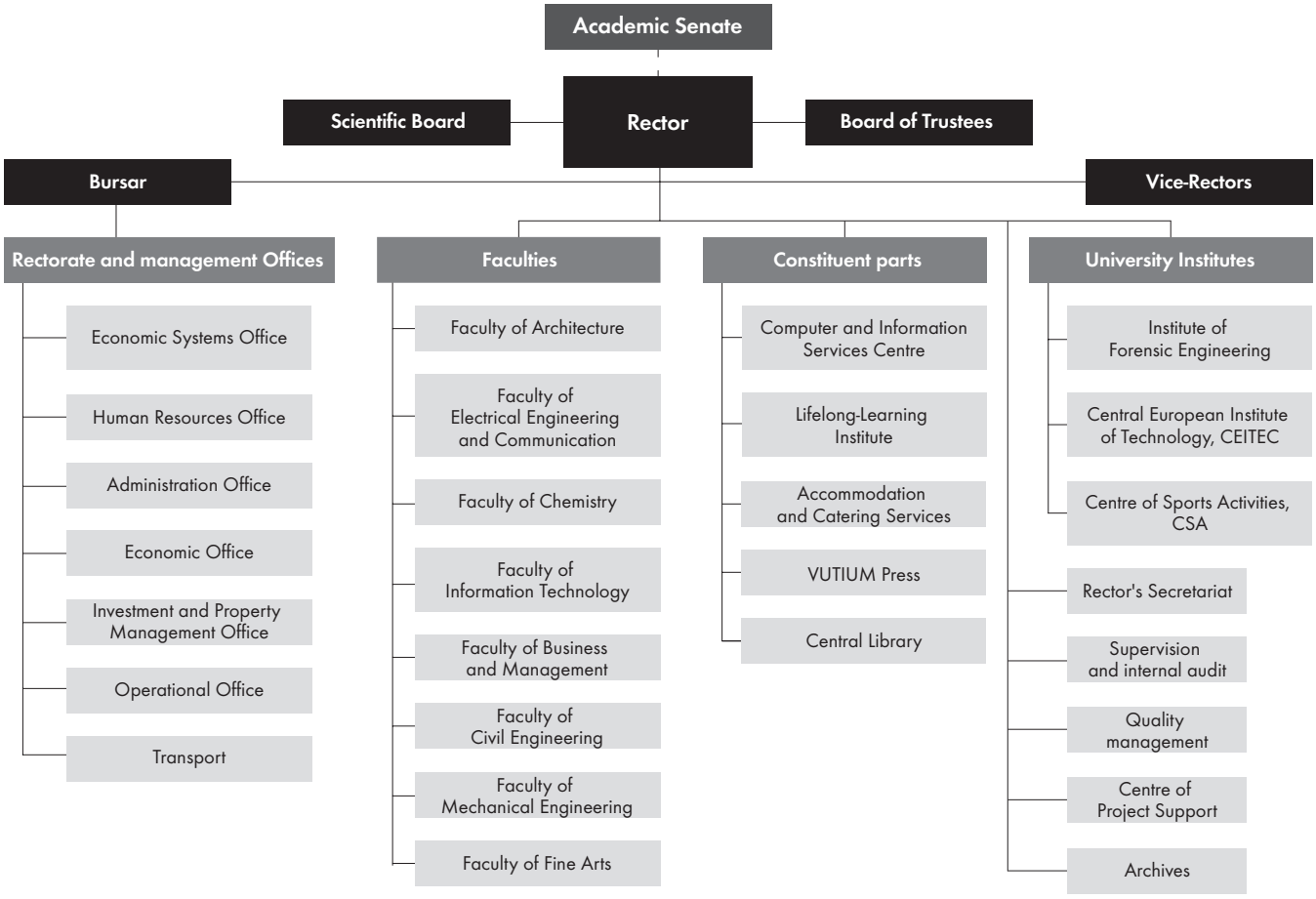
Faculties

BUT Faculty of Architecture, BUT FA, Poříčí 237/5, 639 00 Brno, http://www.fa.vutbr.cz
BUT Faculty of Electrical Engineering and Communication, BUT FEEC, Technická 3058/10, 616 00 Brno, http://www.feec.vutbr.cz
BUT Faculty of Chemistry, BUT FC, Purkyňova 464/118, 612 00 Brno, http://www.fch.vutbr.cz
BUT Faculty of Information Technology, BUT FIT, Božetěchova 1/2, 612 66 Brno, http://www.fit.vutbr.cz
BUT Faculty of Business and Management, BUT FBM, Kolejní 2906/4, 612 00 Brno, http://www.fbm.vutbr.cz
BUT Faculty of Civil Engineering, BUT FCE, Veveří 331/95, 602 00 Brno, http://www.fce.vutbr.cz
BUT Faculty of Mechanical Engineering, BUT FME, Technická 2896/2, 616 69 Brno, http://www.fme.vutbr.cz
BUT Faculty of Fine Arts, BUT FFA, Rybářská 125/13/15, 603 00 Brno, http://www.ffa.vutbr.cz

University Institutes

Central European Institute of Technology, CEITEC, Technická 3058/10, 616 00 Brno, http://www.ceitec.cz
BUT Centre of Sports Activities, BUT CSA, Technická 2896/2, 616 69 Brno, http://www.cesa.vutbr.cz
Institute of Forensic Engineering, Údolní 244/53, 602 00 Brno, http://www.usi.vutbr.cz

b) BUT Organizational Chart



c) BUT Scientific Board, Managerial Board, Academic Senate

BUT SCIENTIFIC BOARD

Name	Position, workplace	Field of research
prof. Ing. Karel Rais, CSc., MBA, dr. h. c.	rector of BUT	business and management
Ing. Aleš Bartůněk	general manager, IBM Česká republika, s. r. o.	information technology
prof. Ing. Albert Bradáč, DrSc.	director, BUT Institute of Forensic Engineering	forensic engineering
prof. RNDr. Milan Češka, CSc.	BUT Faculty of Information Technology	information technology
prof. Ing. Jarmila Dědková, CSc.	dean, Faculty of Electrical Engineering and Communication	theoretical electrical engineering
Ing. Jaroslav Doležal, CSc.	Honeywell, s. r. o.	management automation
prof. RNDr. Miroslav Doupovec	dean, BUT Faculty of Mechanical Engineering	applied mathematics
prof. Ing. Rostislav Drochytka, CSc.	dean, BUT Faculty of Civil Engineering	construction materials engineering
prof. RNDr. Miloslav Druckmüller, CSc.	BUT Faculty of Mechanical Engineering	applied mathematics
Ing. Miloš Filip	director, Prefa Kompozity, a. s.	composite materials
prof. Ing. Jan M. Honzík, CSc.	BUT Faculty of Information Technology	information technology
prof. Ing. Tomáš Hruška, CSc.	BUT Faculty of Information Technology	information technology
prof. RNDr. Josef Jančář, CSc.	BUT Faculty of Chemistry	macromolecular chemistry
doc. Ing. Josef Jettmar, CSc.	vice-rector, Czech Technical University in Prague	geotechnics
prof. Ing. Pavel Jura, CSc.	vice-rector, BUT	cybernetics, automation, and measurement
Ing. Jaroslav Klíma	chairman, board of directors, TESCAN, a. s.	scanning electronic microscopes
Mgr. Rostislav Koryčánek	Director of the Brno House of Arts	architecture
prof. RNDr. Michal Kotoul, DrSc.	vice-rector, BUT	applied mechanics
prof. Ing. Vladimír Kučera, DrSc.	Czech Technical University in Prague, Faculty of Electrical Engineering	technical cybernetics
Ing. arch. Vlasta Loutocká	FORM ARCH	architecture
prof. Ing. Miroslav Ludwig, CSc.	rector, University of Pardubice	organic chemistry
doc. RNDr. Petr Lukáš, CSc.*	director, Academy of Sciences, Institute of Materials Physics	materials physics
doc. Ing. Jaroslav Machan, CSc.	manager, ZPESV, Škoda Auto, a.s.	engineering informatics in transportation and communication
doc. Ing. Lubomír Mikš, CSc.	chairman, board of directors, Qualiform, a.s.	technology of construction
prof. Ing. Drahomír Novák, DrSc.	BUT Faculty of Civil Engineering	structure mechanics, reliability of structures
prof. Ing. Ladislav Omelka, DrSc.	vice-dean, BUT Faculty of Chemistry	physical chemistry
Ing. Eduard Palíšek, Ph.D., MBA	general director, Siemens s.r.o.	
prof. Ing. Miloslav Pekař, CSc.	BUT Faculty of Chemistry	physical chemistry
prof. Ing. arch. Petr Pelčák	BUT Faculty of Architecture	architecture
prof. PhDr. Jan Sedlák, CSc.	BUT Faculty of Fine Arts	architecture
prof. RNDr. Eduard Schmidt, CSc.	Masaryk University in Brno, Faculty of Science	solid state physics
prof. Ing. Vladimír Smejkal, CSc.	forensic engineer	business and management
prof. Ing. Jana Stávková, Csc.	dean, Faculty of Business and Economics, Mendel University in Brno	statistics
prof. Ing. Petr Stehlík, CSc.	BUT Faculty of Mechanical Engineering	process engineering

prof. Ing. arch. Jiljí Šindlar, CSc.	BUT Faculty of Architecture	architecture
prof. RNDr. Ing. Petr Štěpánek, CSc.	vice-rector, BUT	concrete structures
prof. Ing. Jan Šulc, CSc.	BUT Faculty of Civil Engineering	water structures, hydromechanics
prof. Ing. Ivo Vondrák, CSc.	rector, VŠB-Technical University of Ostrava	information technology
prof. Ing. Radimír Vrba, DrSc.	BUT Faculty of Electrical Engineering and Communication	electrical and electronic technology
prof. RNDr. Ing. Jan Vrbka, DrSc.	BUT Faculty of Mechanical Engineering	mechanics of solids

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Vice-chairperson
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JUDr. Michal Hašek
Ing. Miroslav Hošek
RNDr. Barbora Javorová
PhDr. Miroslava Kopicová
prof. Ing. Oldřich Kratochvíl, dr. h. c.
Ing. Jiří Belohlav to 14. 5. 2012
JUDr. Martin Maisner, Ph.D.
– from 14. 5. 2012
Ing. Martin Pecina from 14. 5. 2012
doc. Ing. Otakar Smolík, CSc.
Ing. Pavel Suchánek
Ing. Jiří Škrla
RNDr. Věra Šťastná
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doc. Dr. Ing. Petr Hanáček
Vice-chairperson and chairperson
of the Chamber of Academics
doc. Ing. Jana Korytárová, Ph.D.
Vice-chairperson and chairperson
of the Chamber of Students
Bc. Karel Koranda

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doc. Dr. Ing. Petr Hanáček (FIT)
Ing. Helena Hanušová, CSc. (FBM)
MgA. Tomáš Hrůza (FFA)
Ing. arch. Bohumila Hybská (FA)
MgA. Barbora Klímová (FFA)
doc. Ing. Jana Korytárová, Ph.D. (FCE)
doc. Ing. Jiří Kunovský, CSc. (FIT)
Ing. Libor Matějka, CSc., Ph.D., MBA (FCE)
doc. Ing. Miloslav Meixner, CSc. (FA)
Mgr. Helena Musilová (FBM)
– from 13. 11. 2012
RNDr. Pavel Popela, Ph.D. (FME)
Ing. Jan Roupec, Ph.D. (FME)
PaedDr. Milan Slezáček (CSA)
doc. Ing. Miloslav Steinbauer, Ph.D. (FEEC)
doc. Ing. Stanislav Škapa, Ph.D. (FBM)
– to 7. 11. 2012
prof. RNDr. Milada Vávrová, CSc. (FC)
doc. Ing. Michal Veselý, CSc. (FC)
doc. Ing. Aleš Vémola, Ph.D. (IFE)

CHAMBER OF STUDENTS
Ing. Stanislava Dermeková (FCE)
Ing. Libor Chládek (FBM)
Barbora Jakubíková (FA)
Bc. Karel Koranda (FIT)
Mgr. Jana Kořínková (FFA)
Ing. Zdeněk Krychtálek (IFE)
Ing. Petra Nováčková (FME)
Bc. Lucia Spišiaková (FEEC) – to 9. 11. 2012
Ing. Jiří Švec (FC)

BUT AS WORKING COMMITTEES
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Ing. Jan Roupec, Ph.D.
Members
prof. Ing. Eva Gescheidtová, CSc.
doc. Ing. Miloslav Meixner, CSc.
doc. Ing. et Ing. Stanislav Škapa, Ph.D.
– to 7. 11. 2012
doc. Ing. Aleš Vémola, Ph.D.
doc. Ing. Michal Veselý, CSc.
Studenti
Barbora Jakubíková
Bc. Karel Koranda
Ing. Zdeněk Krychtálek

Economic committee:
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RNDr. Pavel Popela, Ph.D.
Členové
Ing. Helena Hanušová, CSc.
MgA. Tomáš Hrůza
Ing. arch. Bohumila Hybská
doc. Ing. Jana Korytárová, Ph.D.
doc. Ing. Jiří Kunovský, CSc.
Ing. Libor Matějka, CSc., Ph.D., MBA
doc. Ing. Miloslav Steinbauer, Ph.D.
prof. RNDr. Milada Vávrová, CSc.
doc. Ing. Aleš Vémola, Ph.D.
Studenti
Ing. Libor Chládek
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Mgr. Jana Kořínková

Pedagogická komise:
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Ing. Stanislava Dermeková

Ing. Libor Chládek
Ing. Zdeněk Krychtálek
Ing. Petr Nováčková
Bc. Lucia Spišiaková – to 9. 11. 2012
Ing. Jiří Švec

Creative activity committee:
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Ing. arch. Bohumila Hybská
doc. Ing. Jana Korytárová, Ph.D.
Ing. Libor Matějka, CSc., Ph.D., MBA
RNDr. Pavel Popela, Ph.D.
doc. Ing. et Ing. Stanislav Škapa, Ph.D
– to 7. 11. 2012

Students
Ing. Stanislava Dermeková
Barbora Jakubíková
Ing. Petra Nováčková
Ing. Jiří Švec

d) BUT representatives in the representation of universities

CZECH RECTORS' CONFERENCE
prof. Ing. Karel Rais, CSc., MBA, dr. h. c, rector of BUT, member of CRC

BUT REPRESENTATIVES IN THE COUNCIL OF HIGHER EDUCATION INSTITUTIONS

doc. Ing. Eva Münsterová, CSc.	CHEI board member
RNDr. Vlasta Krupková, CSc.	CHEI assembly member for BUT
Ing. Tomáš Krejbich	Chamber of Students
Ing. Petr Dvořák	Chamber of Students (stand-in)

BUT REPRESENTATIVE IN THE ACADEMY ASSEMBLY OF THE ACADEMY OF SCIENCES OF THE CZECH REPUBLIC
prof. RNDr. Milada Vávrová, CSc.

e) Nature of BUT mission, vision, and strategic goals

As one of the most important Czech universities, Brno University of Technology makes every effort to be an excellent university, particularly in the main areas of its mission, that is in teaching, research, cooperation with the application and social spheres.
The following are BUT's main priorities in teaching:

- developing internal quality assessment systems with emphasis on increasing the quality of the degree programmes (using the teaching output) and their supporting activities;
- strongly preferring the improvement of the quality of study to trying to win as many students as possible;
- supporting and gradually implementing the government-approved support for engineering fields (establishing and extending inter-disciplinary specialisations and recruiting talented Bachelor's graduates from other universities);
- preparing a system of assessing the quality of the pedagogic process and the teachers that will be designed and gradually implemented at the faculties and other university constituent parts;
- in line with the university's orientation towards research and applications, its tradition, and quality of teaching, trying to increase the proportion of Master's and doctoral students;
- motivating the teachers to educate excellent students;
- helping faculties and constituent parts to intensify internationalization not only in relation to students (opening degree programmes, modules, and courses taught in English), but also by inviting more experts from abroad to teach at the university;
- providing support for student mobility using also BUT-financed scholarships and money from concrete cooperation with the commercial sphere;
- continuing in supporting the development of lifelong education and supplementary pedagogic study (SPS); SPS will be developed not only for secondary school teachers of engineering subjects but also for talented doctoral students and BUT academics

In science and research, BUT's strategic objectives include:

- remaining a prestigious research-and-innovations-oriented university;
- supporting and cultivating the centres of excellence and regional centres established at BUT within the RDI operative programme;

- creating opportunities for receiving funding for projects with international participation in order to engage BUT's experts in the European research space; the support from the EU framework programmes will mostly be one of economic and legal nature;
- supporting two-way international mobility of university researchers.

In cooperation with companies, BUT's strategies are the following:
- providing systematic support for the financial sustainability of the European centres of excellence and BUT regional R&D centres by enabling the use of the results of the centres' R&D projects in the application sphere;
- achieving more results of the centres of excellence and regional centres in applied research, increasing the number of results used in practice;
- supporting the establishing of spin-off companies and companies established in cooperation with industrial partners to extend BUT's financial resources.

In cooperation with the application sphere, BUT:
- supports mutually advantageous cooperation with the application sphere and protection of intellectual property aiming to finance the protection of intellectual property from the domestic and international RDI projects;
- will prepare and implement a system for assessing the cooperation between BUT and the application sphere focusing primarily on outcomes that can be used by both sides;
- will prepare, discuss and approve variants of incubator use.

The means employed to put in place the above objectives also include changes in the BUT structure foreseen and to be implemented after analysing and evaluating their contribution to Brno University of Technology:
- development of new constituent parts and support of the current ones, reflecting the long-term requirements of the labour market and needs of society or those likely to appear;
- optimizing the university administration to reflect the changes brought about by the reforming environment and determined by the economic situation in the Czech Republic ;
- restructuring the Rector's office units and sections supposed to provide information, methodological, economic, and legal support for projects aiming towards intensive participation in international cooperation in research, development, and innovations.

It should be noted that the external conditions, especially the worldwide economic crisis, the economic crisis in the Czech Republic and the subsequent austerity measures (limiting the number of paid students, the financial limit per student) as well as the demographic decline have had a negative impact on the fulfilment of BUT's visions, and strategic aims.

f) Amendments to internal regulations

In 2012 only a new BUT scholarship system was registered (registration on August 30th 2012, effective from September 1st 2012).

g) Providing information under Act no. 106/1999 Coll., concerning free access to information

Number of requests for information	1
Number of requests granted	1 request partially granted
Number of decisions to turn down a request	1 request partially turned down
Number of appeals against a decision	0
List of exclusive licenses granted	–
Number of complaints filed under Section 16a of the Act	0

3



DEGREE PROGRAMMES, STUDY ORGANISATION, AND EDUCATION

a) Accredited degree programmes (numbers in master groups according to study type and form) listed by faculty or other constituent parts offering an accredited degree programme or its part (Table 3.1)

Table 3.1: Overview of accredited degree programmes

Faculty	Accredited degree programme groups	Bc.		Mgr.		Follow-up Mgr.		Ph.D.	Total
		FT	C	FT	C	FT	C		
FA	technical sciences and disciplines	1	0	0	0	1	0	1	3
FCE	technical sciences and disciplines	3	2	0	1	3	1	2	12
FFA	art and culture sciences and disciplines	1	0	0	0	1	0	1	3
FC	natural sciences and disciplines / technical sciences and disciplines	0/2	0/3	0/0	0/0	0/4	0/4	2/3	2/16
FEEC	technical sciences and disciplines	3	1	0	0	2	1	1	8
FIT	technical sciences and disciplines	1	0	0	0	1	0	1	8
FBM	economy	3	2	0	0	2	1	1	9
FME	technical sciences and disciplines	2	1	0	0	4	2	6	15
IFE	technical sciences and disciplines	0	0	0	0	2	0	1	3
Total		16	9	0	1	20	9	19	74

b) Degree programmes taught in a foreign language (numbers in master group field code groups according to study type and form) listed by faculty or other constituent parts offering an accredited degree programme or its part (Table 3.2)

Table 3.2: Active accredited degree programmes taught in a foreign language (numbers)

Faculty	Accredited degree programme groups	Bc.		Mgr.		Follow-up Mgr.		Ph.D.	Total
		FT	C	FT	C	FT	C		
FA	technical sciences and disciplines	0	0	0	0	1	0	1	2
FCE	technical sciences and disciplines	1	0	0	0	1	0	4	6
FFA	art and culture sciences and disciplines	0	0	0	0	0	0	0	0
FC	natural sciences and disciplines	0	0	0	0	0	0	2	2
FEEC	technical sciences and disciplines	1	0	0	0	1	0	1	3
FIT	technical sciences and disciplines	0	0	0	0	0	0	1	1
FBM	economy	0	0	0	0	1	0	1	2
FME	technical sciences and disciplines	1	0	0	0	1	0	1	3
IFE	technical sciences and disciplines	0	0	0	0	0	0	0	0
Total		3	0	0	0	5	0	11	19

c) Joint/Double/Multiple degree programmes (Table 3.3)

Table 3.3: Joint/Double/Multiple Degree Programmes

Brno University of Technology, Faculty of Mechanical Engineering	
Title of Programme 1	**Production Systems**
Partner organizations	Technische Universität Chemnitz (Chemnitz, Germany)
Adjoined organizations	
Beginning	2006
Programme category (Joint/Double/ Multiple Degree)	Double Degree
Length of study (semesters)	2
Programme type (Bachelor's, follow-up Master's, Master's, doctoral)	follow-up Master's
Programme organisation including admissions and graduation	One-year of study in Czech, one-year of study in German
What diploma and diploma supplement are issued and how?	After completing the programme, students receive degrees at both universities. Diploma and diploma supplement are received during graduation ceremony or in person.
Student mobility type	Student exchange within an Erasmus programme or the FME 25/7 development programme for one academic year
Title of Programme 2	**Industrial Engineering**
Partner organizations	Art et Métiers ParisTech (Cluny, France)
Adjoined organizations	
Beginning	2006
Programme category (Joint/Double/ Multiple Degree)	Double Degree
Length of study (semesters)	2
Programme type (Bachelor's, follow-up Master's, Master's, doctoral)	follow-up Master's
Programme organisation including admissions and graduation	One-year of study in Czech and one-year of study in French. A student from the general Bachelor's programme of "Mechanical Engineering" can be admitted for Industrial Engineering if he or she has completed the final year of the Bachelor's programme at a French university
What diploma and diploma supplement are issued and how?	After completing the programme, students receive degrees at both universities. Diploma and diploma supplement are received during graduation ceremony or in person.
Student mobility type	Student exchange within an Erasmus programme or the FME 25/7 development programme for one academic year
Brno University of Technology, Faculty of Business and Management	
Title of Programme 3	**Programme: N6208 Economics and Management, field: 6208T150 European Business and Finance**
Partner organizations	Nottingham Trent University (GB), Karol Adamiecki Economic University, Katowice, Poland, Brno University of Technology (CZ)
Adjoined organizations	
Beginning	Academic year of 2007/2008
Programme category (Joint/Double/ Multiple Degree)	Joint Degree
Length of study (semesters)	4
Programme type (Bachelor's, follow-up Master's, Master's, doctoral)	follow-up Master's

Table 3.3: Joint/Double/Multiple Degree Programmes

Programme organisation including admissions and graduation	Study organization: full-time study, the 1st and 2nd semesters are studied at the BUT Faculty of Business and Management, the 3rd semester at Nottingham Trent University, 4th semester is devoted to work on the degree project (in English) at a Czech or British company. Conditions for admission: 1) completed similar Bachelor's programme 2) passing a written entrance exam (aptitude and English test). Completion of study: 1) achieving 120 credits at the BUT Faculty of Business and Management, passing a state exam (consisting of degree project presentation and an oral exam in the theoretical background – both parts in English), 2) meeting the conditions of Nottingham Trent University.
What diploma and diploma supplement are issued and how?	1) The "inženýr" degree diploma along with the supplement is issued by BUT, 2) The Master of Science degree diploma along with the supplement is issued by Nottingham Trent University signed by the rectors of all three participating universities.
Student mobility type	One-semester study stay

d) Accredited degree programmes offered in cooperation with another university seated in the Czech Republic (degree programme title (including master group) and name of the cooperating institution) (Table 3.4)

Table 3.4: Accredited degree programmes offered in cooperation with another university

Brno University of Technology, Faculty of Electrical Engineering and Communication	
Title of degree programme 1	**Biomedical Technology and Bioinformatics**
Master group	B3930
Partner university	Masaryk University in Brno, Faculty of Medicine
Beginning	2007/2008
Length of study (semesters)	6
Programme type (Bachelor's, follow-up Master's, Master's, doctoral)	Bachelor's
Programme organisation including admissions and graduation	Regular full-time three-year study taking place at the Faculty of Electrical Engineering and Communication and MU Faculty of Medicine using the specialised departments of the Teaching hospital at Brno-Bohunice. For admission eligibility, the completion is required of a secondary school and meeting the BTBIO-A admission rules. Completion - by presenting and defending a Bachelor's project and passing a state exam.
Title of degree programme 2	**Biomedical Engineering and bioinformatics**
Master group	N3952
Partner university	Masaryk University in Brno, Faculty of Medicine
Beginning	2010/2011
Length of study (semesters)	4
Programme type (Bachelor's, follow-up Master's, Master's, doctoral)	follow-up Master's
Programme organisation including admissions and graduation	Regular full-time two-year Master's degree study taking place at the Faculty of Electrical Engineering and Communication and MU Faculty of Medicine using the specialised departments of the Teaching hospital at Brno-Bohunice. For admission eligibility a Bachelor's degree is required and meeting the BTBIO-F admission rules. Completion - by presenting and defending a Master's project and passing a state exam.

e) Accredited degree programmes offered in cooperation with a Higher Education College

BUT does not offer such a degree programme.

f) Accredited degree programmes or their parts offered out of town

BUT does not offer such a degree programme.

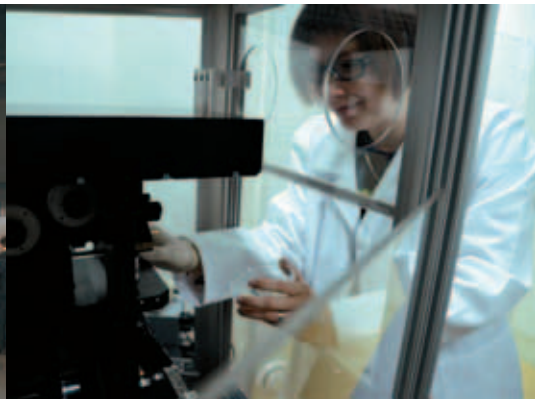
g) Number of accredited degree programmes described by the teaching outcomes methodology in compliance with the National Qualifications Frame for tertiary education

BUT accredited degree programmes are currently not in full compliance with the conclusions of the teaching outcomes methodology according to the National Qualifications Frame. In 2013, we are aiming to regain the ECTS and DS Labels. The newly defined teaching outcomes will now be taken into consideration.

h) Brief description of the credit system

BUT holds the ECTS and DS Labels for the period of 2009–2013. In this year (2013), we are going to defend both the certificates. The assessment system used in all the degree programmes is compatible with ECTS (Local grades). It was certified by the ECTS Label in 2009. The information system allows for an internal conversion to the correct ECTS credit system.


ICT FORUM pre školy



4


STUDENTS

a) Students in accredited degree programmes (numbers in the master groups by study type and form) – global overview for BUT (Table 4.1)

Table 4.1: Students in accredited degree programmes (numbers)

Faculty	Accredited degree programme groups	Bc.		Mgr.		Follow-up Mgr.		Ph.D.	Total
		FT	C	FT	C	FT	C		
FA	technical sciences and disciplines	429	0	0	0	243	0	95	767
FCE	technical sciences and disciplines	4100	431	0	0	1547	131	428	6638
FFA	art and culture sciences and disciplines	163	0	0	1	95	0	20	278
FC	natural sciences and disciplines / technical sciences and disciplines	0/604	0/75	0/0	0/0	0/183	0/64	65/116	65/1042
FEEC	technical sciences and disciplines	2076	239	0	0	935	207	462	3919
FIT	technical sciences and disciplines	1644	0	0	0	628	0	198	2470
FBM	economy	1966	72	0	0	1008	455	86	3587
FME	technical sciences and disciplines	2618	217	0	0	1127	173	471	4606
IFE	technical sciences and disciplines	0	0	0	0	463	0	161	624
Total		13600	1034	0	0	6229	1030	2102	23996

b) Students paying for their studies (numbers in the master groups by study type and form) by faculty or other constituent parts offering an accredited degree programme or its part (Table 4.2)

Table 4.2: Students paying for their studies (numbers)

Faculty	Accredited degree programme groups	Bc.		Mgr.		Follow-up Mgr.		Ph.D.	Total
		FT	C	FT	C	FT	C		
FA	technical sciences and disciplines	0	0	0	0	0	0	0	0
FCE	technical sciences and disciplines	6	0	0	0	1	0	0	7
FFA	art and culture sciences and disciplines	0	0	0	0	0	0	0	0
FC	natural sciences and disciplines / technical sciences and disciplines	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FEEC	technical sciences and disciplines	0	0	0	0	0	0	3	3
FIT	technical sciences and disciplines	0	0	0	0	0	0	0	0
FBM	economy	0	0	0	0	29	0	0	29
FME	technical sciences and disciplines	0	0	0	0	0	0	1	1
IFE	technical sciences and disciplines	0	0	0	0	0	0	0	0
Total		6	0	0	0	30	0	4	40

c) Students over 30 years of age (numbers in the master groups by study type and form) by faculty or other constituent parts offering an accredited degree programme or its part (Table 4.3)

Table 4.3: Students over 30 years of age

Faculty	Accredited degree programme groups	Bc.		Mgr.		Follow-up Mgr.		Ph.D.	Total
		FT	C	FT	C	FT	C		
FA	technical sciences and disciplines	4	0	0	0	4	0	52	60
FCE	technical sciences and disciplines	3	129	0	1	12	25	122	292
FFA	art and culture sciences and disciplines	6	0	0	0	6	0	13	25
FC	natural sciences and disciplines / technical sciences and disciplines	0/0	0/14	0/0	0/0	0/0	0/4	6/22	6/40
FEEC	technical sciences and disciplines	5	77	0	0	5	60	108	255
FIT	technical sciences and disciplines	1	0	0	0	2	0	35	38
FBM	economy	3	22	0	0	3	67	26	121
FME	technical sciences and disciplines	3	67	0	0	3	56	111	240
IFE	technical sciences and disciplines	0	0	0	0	13	0	61	74
Total		25	309	0	1	48	212	556	1151

d) Dropouts from accredited degree programmes (numbers in the master groups by study type and form) (Table 4.4)

Table 4.4: Dropouts from accredited degree programmes (numbers)

Accredited degree programme groups	Master group field code	Bc.		Mgr.		Follow-up Mgr.		Ph.D.	Total
		FT	C	FT	C	FT	C		
natural sciences and disciplines	11 – 18	0	0	0	0	0	0	10	10
technical sciences and disciplines	21 – 39	2431	603	0	0	485	198	251	2968
economy	62, 65	266	13	0	0	116	103	21	519
art and culture sciences and disciplines	81, 82	20	0	0	0	7	0	2	29
Total		2717	316	0	0	608	301	284	4526

e) Measures to reduce the number of dropouts

The relatively high number of dropouts, particularly in the Bachelor's degree programmes, is a recurring problem of the level of technical and natural scientific subjects at secondary schools and the parameters of the school-leaving exam.

BUT is trying to offer supplementary courses for mathematics and physics and, within re-accreditations, also study fields are included for profession Bachelor's students.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5



GRADUATES

a) Graduates from accredited degree programmes (numbers in the master groups by study type and form) – global overview for BUT (Table 5.1)

Table 5.1: Graduates from accredited degree programmes (numbers)

Accredited degree programme groups	Master group field code	Bc.		Mgr.		Follow-up Mgr.		Ph.D.	Total
		FT	C	FT	C	FT	C		
natural sciences and disciplines	11 – 18	0	0	0	0	0	0	7	7
technical sciences and disciplines	21 – 39	2176	145	0	2	1834	121	175	4453
economy	62, 65	401	37	0	0	297	106	7	848
art and culture sciences and disciplines	81, 82	39	0	0	0	39	0	4	82
Total		2616	182	0	2	2170	227	193	5390

b) Cooperation with BUT graduates

BUT cooperates with graduates both in clubs and through a special website of www.vutbr.cz/absolventi.
Former students are informed here about educational, cultural, and sport events taking place at the university. This website also provides interviews with interesting graduates and job offers. A section for graduates is also part of the Faculty of Chemistry website. There are alumni clubs at three faculties – faculties of Civil Engineering, Electrical Engineering and Communication and Information Technology.

c) Graduate employment surveys

BUT carries out graduate employment surveys and surveys on employers of BUT graduates every two years (the last one was carried out in 2011)

d) Cooperation with the future employers of BUT graduates

Offers of on-the-job training, internships, and job vacancies can be found at the BUT and faculty websites by BUT students and graduates. The BUT Institute of Lifelong Learning offers to companies and job-consulting agencies free presentations and workshops for students. The university also co-organizes JobChallenge, the largest Brno job fair. An iKariéra fair organized by IAESTE, a student organization, took place at two faculties.
Every faculty also organizes company presentations offering students internships and jobs. There are also larger presentations participated in by tens of companies. They are organized by the Faculty of Mechanical Engineering (Day of Companies), the Faculty of Chemistry (Day of Chemistry). The Faculty of Electrical Engineering and Communication organized JobFair 2012.

6

DEMAND FOR STUDIES

a) Demand for BUT studies

BUT study applicants (number of applicants for Bachelor's, Master's, follow-up Master's, and doctoral degree programmes) arranged by faculties or other constituent parts offering an accredited degree program or its part and by master group, number of admitted students, number of enrolled students with year-on-year changes in the number of applicants and students admitted (Table 6.1)

Table 6.1: Demand for university studies

Fak.	Accredited degree programme groups	Bc.			Mgr.			Follow-up Mgr.			Ph.D.		
		Applicants	Admitted	Enrolled	Applicants	Admitted	Enrolled	Applicants	Admitted	Enrolled	Applicants	Admitted	Enrolled
FA	technical sciences and disciplines	669	177	98	0	0	0	214	153	102	31	9	9
FCE	technical sciences and disciplines	3445	2728	1644	0	0	0	1385	1050	788	103	86	83
FFA	art and culture sciences and disciplines	413	50	42	0	0	0	88	49	48	16	4	4
FC	natural sciences and disciplines/technical sciences and disciplines	0 1031	0 740	0 502	0 0	0 0	0 0	0 182	0 133	0 122	20 36	18 34	18 31
FEEC	technical sciences and disciplines	1883	1219	1015	0	0	0	770	723	554	106	83	76
FIT	technical sciences and disciplines	1317	695	633	0	0	0	429	313	300	46	35	33
FBM	economy	3691	1942	861	0	0	0	2632	1659	670	30	19	19
FME	technical sciences and disciplines	2604	2586	1356	0	0	0	984	980	599	110	98	96
IFE	technical sciences and disciplines	0	0	0	0	0	0	467	361	236	55	32	32
Total		15 053	10 137	6151	0	0	0	7151	5421	3419	553	418	401

b) BUT entrance exams

BUT has a system of written entrance exams for all the degree programmes in the basic subjects such as mathematics, physics, chemistry, informatics and general study skills and a foreign language. There is also an aptitude test for the artistic and architectural fields. The admission procedure directives of most faculties include entrance exam waivers under precisely specified conditions. Entrance exams are organized by faculties on their own, without external suppliers.

c) Follow-up Master's and doctoral students who graduated from a previous degree programme at another university (Table 6.2)

Table 6.2: Follow-up Master's and doctoral students who graduated from a previous degree programme at another university

BUT	Number of BUT students enrolled in the first year of follow-up Master's and doctoral degree programmes who graduated from a previous degree programme at another university	
	Follow-up Mgr.	Ph.D.
FA	31	1
FCE	71	9
FFA	12	2
FC	38	9
FEEC	69	8
FIT	34	4
FBM	276	2
FME	62	15
IFE	44	7
BUT total	637	57

d) Cooperation of BUT with secondary schools aiming to inform future BUT candidates

BUT presents the studies at each faculty and at foreign partner universities. We also show the students BUT facilities (halls of residence, canteens, sport facilities), options of spending free time and participating in various BUT student projects and organizations (Formula Student, BEST, Students for students etc.).

In 2012 BUT participated in the education fairs in Brno, Prague, Bratislava and Košice and also in the university fair at the Grammar school in Žatec. Apart from that, a delegation of students and External Relations Office staff regularly go to grammar schools and secondary technical schools in Brno and the South Moravian Region to present BUT and its faculties.




REKONSTRUKCE

7



ACADEMICS

a) Teachers

Recalculated numbers (proportion of the total number of hours worked in a given period by all employees to the total yearly working hours per a full-time employee) of academic and research staff structured by the university's internal qualifications system (Table 7.1)

Table 7.1: Teachers and research staff (numbers recalculated)**

BUT	Teachers							Research staff ***	Total
	Total	Professors	Associate professors	Senior assistants	Assistants	Instructors	Research and development staff participating in teaching		
FFA	30,584	4,083	2,583	11,86	12,058	0	0	0	30,584
FCE	325,32	26,087	64,118	172,258	60,723	0	2,134	19,293	344,613
FME	255,244	42,727	66,243	121,264	25,01	0	0	11,92	267,164
FIT	62,346	7,984	16,982	34,016	3,364	0	0	8,209	70,555
FA	42,673	6,735	14,351	13,281	8,306	0	0	0	42,673
FC	63,426	10,222	15,441	36,435	0,328	1	0	9,324	72,75
FBM	77,695	9,465	16,049	38,526	13,655	0	0	0,234	77,929
FEEC	202,85	27,433	62,511	90,645	21,592	0,669	0	18,546	221,396
CSA	18,625	0,7	1,034	5,283	11,608	0	0	0	18,625
IFE	8,818	2,1	2,118	4,6	0	0	0	0	8,818
Total	1087,581	137,536	261,43	528,168	156,644	1,669	2,134	67,526	1155,107

Note: * = Faculty or university constituent part offering an accredited degree programme/field of study

Note: ** = (proportion of the total number of hours worked in a given period by all employees to the total yearly working hours per a full-time employee)

Note: *** = In this case, research staff includes all persons that are not teachers (under Section 70 of Act no. 111/1998 Coll. concerning universities)

b) Age structure of teachers and research staff giving the number of women (structured by the university's internal qualifications system) (Table 7.2)

Table 7.2: Age structure of teachers and research staff (absolute numbers)

Age	Teachers										Research staff***		Total
	Professors		Associate professors		Senior assistants		Assistants		Instructors				
	Total	Fem.	Total	Fem.	Total	Fem.	Total	Fem.	Total	Fem.	Total	Fem.	
up to 29	0	0	0	0	33	5	48	15	1	1	2	0	25
30-39	2	0	57	3	323	58	104	35	0	0	5	1	72
40-49	14	0	49	7	81	25	24	13	1	1	0	0	9
50-59	56	3	73	13	86	43	8	8	0	0	0	0	15
60-69	54	6	91	12	73	37	2	1	0	0	0	0	8
over 70	38	2	32	5	8	1	1	0	0	0	0	0	9
Total	164	11	302	40	604	169	187	72	2	2	7	1	138

c) Teacher numbers by employment proportion and the highest qualification achieved (Table 7.3)

Tab 7.3: Teacher numbers by employment proportion and the highest qualification achieved (absolute numbers)

BUT	Teachers				Total
FFA					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	0	1	0	0	**1**
up to 0.5	1	1	0	12	**14**
up to 0.7	0	0	0	0	**0**
up to 1.0	4	3	3	14	**24**
FCE					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	3	4	1	17	**25**
up to 0.5	3	7	7	15	**32**
up to 0.7	1	2	5	7	**15**
up to 1.0	25	59	144	76	**304**
FME					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	5	10	8	7	**30**
up to 0.5	5	16	7	6	**34**
up to 0.7	7	25	9	2	**43**
up to 1.0	35	30	95	33	**193**
FIT					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	0	1	0	0	**1**
up to 0.5	0	0	2	1	**3**
up to 0.7	0	1	4	0	**5**
up to 1.0	9	15	35	2	**61**
FA					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	0	0	0	0	**0**
up to 0.5	0	0	0	1	**1**
up to 0.7	1	0	0	3	**4**
up to 1.0	6	15	7	12	**40**

FC					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	4	0	1	0	**5**
up to 0.5	3	2	3	0	**8**
up to 0.7	0	3	0	1	**4**
up to 1.0	7	13	36	5	**61**

FBM					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	0	0	0	1	**1**
up to 0.5	0	3	4	6	**13**
up to 0.7	0	1	2	1	**4**
up to 1.0	9	14	37	8	**68**

FEEC					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	3	2	3	1	**9**
up to 0.5	3	4	5	6	**18**
up to 0.7	3	6	5	9	**23**
up to 1.0	23	57	87	18	**185**

CSA					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	0	3	0	2	**5**
up to 0.5	0	1	0	0	**1**
up to 0.7	1	0	0	0	**1**
up to 1.0	0	0	2	13	**15**

IFE					
Employment proportion	Professors	Associate professors	DrSc., CSc., Dr., Ph.D., Th.D.	others	
up to 0.3	0	0	0	0	**0**
up to 0.5	1	0	0	0	**1**
up to 0.7	1	1	1	0	**3**
up to 1.0	1	2	3	1	**7**

Note: * = Faculty or university constituent part offering an accredited degree programme/field of study
Note: the degree shown is the highest received

d) Numbers of teachers from other countries (by faculty or university constituent part offering an accredited degree programme or its part) (Table 7.4)

Table 7.4: Teachers from other countries ** (absolute numbers)

FFA	3
FCE	9
FME	5
FIT	3
FA	0
FC	9
FBM	3
FEEC	9
CSA	0
IFE	0
Total	41

Note: * = Faculty or university constituent part offering an accredited degree programme/field of study
Note: ** = Persons employed by the university

e) Numbers of associate professors and professors appointed in 2012 giving their average age (Table 7.5)

Tab 7.5: Newly appointed associate professors and professors

BUT	Number	Age average of newly appointed
Faculty of Civil Engineering		
Professors appointed in 2012	4	**55**
Associate professors appointed in 2012	5	**37**
Faculty of Mechanical Engineering		
Professors appointed in 2012	4	**54**
Associate professors appointed in 2012	6	**42**
Faculty of Electrical Engineering and Communication		
Professors appointed in 2012	1	**54**
Associate professors appointed in 2012	3	**38**
Faculty of Architecture		
Professors appointed in 2012	1	**64**
Associate professors appointed in 2012	1	**64**
Faculty of Chemistry		
Professors appointed in 2012	0	**0**
Associate professors appointed in 2012	2	**49**

Tab 7.5: Newly appointed associate professors and professors

Faculty of Fine Arts		
Professors appointed in 2012	0	**0**
Associate professors appointed in 2012	2	**48**
Faculty of Business and Management		
Professors appointed in 2012	1	**54**
Associate professors appointed in 2012	2	**37**
Faculty of Information Technology		
Professors appointed in 2012	3	**47**
Associate professors appointed in 2012	1	**37**
Institute of Forensic Engineering		
Professors appointed in 2012	0	**0**
Associate professors appointed in 2012	1	**60**
Total	37	**48**

Note: * = Faculty or university constituent part offering an accredited degree programme/field of study

f) Further education courses for BUT academics (number of courses and number of participants) (Table 7.6)

BUT academic and other staff are offered English, German, French, Russian, and Spanish courses of different advancement levels – from beginners to conversation with native speakers.

In addition to language courses, BUT academics can attend a number of courses to improve their practical skills (computer courses of different specialisations and levels). Offered are also specialised courses developing expertise (marketing, management, project management) or soft skills developing courses. One of the most frequently attended courses developing teaching skills is Complementary Pedagogical Study, which is required for all doctoral students and recommended to all teachers not yet educated in this area. The portfolio of courses offered changes based on the current demand by the university staff and management.

Table 7.6: Further education courses for academic staff *

BUT	Number of courses	Number of participants
Courses developing teaching skills	2	**31**
Courses developing general skills	104	**726**
Specialised courses		
Total	106	**757**

* = These include all further education courses offered by the university or outsourced courses in which the university contributes to the fees paid by the university employees.

g) The university will state whether it has a career structure for its academic staff and whether it has adopted motivation tools for rewarding employees depending on the results achieved

BUT does not have a career structure for its academic staff. Once a year, individual evaluation of the employees' work results is carried out determining the amount of bonuses for the upcoming period. For fulfilling special tasks, extra bonuses are awarded.

8



SOCIAL AFFAIRS OF BUT STUDENTS AND EMPLOYEES

a) Scholarships paid to students listed by number of students who gained them or received regularly in the year given (by the scholarship type) (Table 8.1)

Table 8.1: Scholarships paid to students by the scholarship type (student numbers)

Scholarship type	Number of students
Merit scholarship under section 91, par. 2, letter a)	1402
Scholarship for excellent results in research, development, innovation, arts or creation under section 91, par. 2, letter b)	2449
Scholarship for research, development, and innovation activity under a special legal regulation, section 91, par. 2, letter c)	926
Social scholarship under section 91, par. 2, letter d)	
Social scholarship under section 91, par. 3	276
Scholarship for students in cases requiring special regard under section 91, par. 2, letter e)	
including accommodation scholarship	15102
Support for studies abroad under section 91, par. 4, letter a)	1672
Support for studies in Czech republic under section 91, par. 4, letter b)	9
Doctoral scholarships under section 91, par. 4, letter c)	1456
Other scholarships	106
Total	23398

b) BUT scholarship programmes

Apart from basic scholarship programmes from subsidies, BUT offers , in compliance with the internal regulation, scholarship programmes to support mobility (the mobility scholarship fund), admission of the best applicants to the first year of Bachelor's programmes (a single financial aid of 6000 CZK for 500 best candidates admitted based on the results achieved in the common part of the school-leaving exam), support for students who or whose family cannot cover study expenses due to an exceptional family situation. Other scholarships are awarded by faculties (especially merit or social ones) or by the rector in accordance with the scholarship system.

c) Quality of the counselling services provided at BUT

The student counselling section was started in 2006 and it is part of the BUT Institute of Lifelong Learning. At present, the section's principal activities include professional (group and individual), psychological, and social-legal counselling for students, study support for students with specific needs and cooperation with companies and other organizations. Counselling services may partially overlap. Demand for counselling is greater than the offer. Students are satisfied with the services based on their feedback.

Professional counselling offers:

- Soft-skill-developing group activities (time management, assertiveness, presentation skills, personal efficiency, teamwork etc.) and preparation for job interviews (how to write a CV, preparation for the Assessment Centre), company presentations, JobChallenge fair. These services prepare graduates for entering the labour market and help to increase their chances of finding a job. A total of 59 courses were organized. 500 BUT students participated in the JobChallege fair. There were also lectures by company representatives and various experts.
- Individual activities: setting up a personal professional profile, career counselling (interview rehearsal, CV consulting, etc.), and coaching. There were 66 consultations provided.
- On-line activities: web seminars on soft-skills and preparation for interviews. 1 web seminar took place.
- Enquiries: students are provided with information from graduate employment enquiries, enquiries among companies, and other relevant information sources for improving the chances of getting a good job.

Psychological counselling:

- Provides an opportunity to work on one's personal development by group or individual activities, to deal with difficult situations, study and adaptation problems. There were 244 consultations provided in total.

Study counselling:

- Part of study counselling is informative meetings for first-year students, where they learn about BUT studies, information systems, canteens and also Brno and their schoolmates. There are also courses focused on study efficiency improvement. The following courses were offered and completed: 10 adaptation groups for students called "Vuťákoviny", 2 courses on memory and learning, and 2 courses on speed-reading and speed-learning.

Counselling for students with various types of handicap:

- Counselling for handicapped students offers two types of service: counselling for students with specific educational needs and social and legal counselling. A number of events took place to promote services for handicapped students – there were 51 informative presentations at secondary schools and universities, at the Gaudeamus fair in Brno, which are included in the interview group. Informative brochures on study with SLD were distributed among these students.
- Educational seminars were organized to offer both individual and group counselling. The group activities included 8 educational seminars for socially and economically handicapped students and 4 seminars for students with specific needs.
- Counselling for students with specific needs is targeted at students and applicants with specific educational needs – learning disorders, mental disorders, physical disorders (visual, auditory, movement disabilities) and with chronic physical disorders. In 2012, students were offered: diagnostics of specific learning disorders, diagnostics of functional impact of handicap on education, loans of compensational software tools, individual practice of learning skills. The indicators shown in the table below include the total number of services provided to students with specific needs. They are structured by the type of service provided.
- Social and legal counselling is targeted at socially and economically handicapped students. Information is provided on the social benefits and scholarships available and assistance offered in dealing with the public administration bodies and submitting applications. Users of this type of counselling mostly include students from low-income families seeking a solution to a critical situation. This is often connected with other problems in the family – debts, poor health condition of other family members, a low socio-economic status of parents. For this reason, social counselling often involves social work, too. The indicators shown in the table below include the total number of students who used social and legal counselling individually or in a group.

Other:

- The other activities of the counselling section include carrying out surveys among applicants, students and graduates or teachers, education of university and career counsellors and also providing the EEG Biofeedback service. There were 3 surveys and 2 focus groups carried out. One course for career counsellors was organized. There were also 45 therapies using the EEG Biofeedback method provided for 9 students.

The services provided by the centre are used by:

- BUT students
- new graduates
- BUT study applicants

For more information, please, visit: www.lli.vutbr.cz/poradenstvi, www.presbloky.cz

Counselling offered in 2012

Counselling	Employees/recalculated full-time employments	Number of consultancy hours per week	Number of counselling contacts		
			interview	by phone	by e-mail
Study	2/0,05	2	274	15	30
Psychological	2/0,2	16	244	7	99
Career	2/0,4	16	1341	50	200
For students with various types of handicap	1/0,9 + 2/0,05	16	1903	3	25
Other	3/0,1	1	94	150	1301

*Note: Counselling is provided by three employees (two of them being part-time-employed (0.8) and one is full-time employed) and outsourced experts usually financed from development projects who participate in organizing courses and providing psychological counselling and some services for

handicapped students. Counselling is mostly done in a personal or group interview. For consulting by e-mail or phone, "contacts" are counted (including informative calls or e-mail messages). Counselling services can also be used by employees. The service most frequently used is creating a personality profile and coaching.

d) Work with students with specific needs

Care of students with specific needs is mostly taken individually by faculties that even gain allowances from MEYS for more serious cases. Part of the Lifelong Learning Institute is a counselling centre coordinating the faculties in this sphere and helping by providing expert advice.

e) Work with exceptionally talented students and cooperation with secondary schools concerning this matter

This was the second year of a competition called „Best 500" in which BUT granted single scholarships to the best applicants admitted to the first year of the Bachelor's degree programmes. These 500 students were chosen based on the results achieved in the common part of the school-leaving exam taken in 2013 where the students preferred and awarded were those who chose mathematics and English in the common part. The scholarships are supposed to encourage excellent secondary school students to study the technical fields at BUT. The outcome of this campaign is satisfying because more talented students applied for study in the first year.

After evaluating of where the best students come from, BUT started a closer cooperation with these secondary schools.

It is mainly the faculties that work with the talented students in the higher years of study. The students are awarded merit scholarships, participate in various projects, the position of a research or pedagogical student assistant is being restored.

f) Accommodation and catering services at BUT (Table 8.2)

Table 8.2: Accommodation, catering

Total number of beds at BUT halls of residence	6 857
Number of beds in hired facilities	0
Number of accommodation applications submitted until 31st December 2012	7 592
Number of accommodation applications granted until 31st December 2012	7 592
Number of bed-days in 2012	1 804 034
Number of main meals sold to students in 2012	1 452 988
Number of main meals sold to BUT staff in 2012	114 538
Number of main meals sold to other diners in 2012	95 184

BUT provides all employees with medical care by a company physician. There are training and holiday centres out of Brno to be used by BUT employees. Employees can use the sports facilities of the Centre of sports activities.

g) Care of BUT staff

The employees can take their meals at the BUT canteens, Masaryk University canteens and other catering facilities using meal vouchers. They are provided with a boarding allowance.

The school also contributes to the employees' pension additional insurance and private life insurance. In exceptional social cases, it grants an allowance in the form of irretrievable financial aid.

BUT actively supports language knowledge improvement and enables the employees to increase and improve their qualifications.

9



INFRASTRUCTURE

a) BUT Central Library

The BUT Central Library serves as a coordinating site of BUT libraries providing consulting and recommending methodology.

The BUT Central Library runs and manages Aleph500, a librarian system. In 2012, its efforts continued to make the catalogue more consistent, remove duplicities, check the catalogue entries and correct errors if necessary. 2012 was a year of unifying the partial settings of the library databases in order to pave the way for a more efficient system administration, among others. As the next step important for the system to be more transparent for the users, analyses were conducted and preparations started of new web environment based on the new look of the BUT Portal.

Information education courses have been offered at BUT since 2007, using the Moodle university e-learning system. Information education and literacy courses are organized at six university faculties and one university institute. In 2012, the Central Library launched the pilot operation of a new e-learning course on correct citations, designed mostly for Master's and doctoral students. The putting into operation of Citace PRO, a new citation system also contributed to improved citations. More than 2,800 students completed the e-learning courses in 2012 tutored also by the faculty library staffs.

The BUT users have also access to several tens of specialized and multi-discipline information sources and databases. Much attention was paid in 2012 to revising the Library Portal part dedicated to support for the use of electronic information sources. This included, for example, inserting to each source a reference enabling remote access to the users or suggestion for more efficient work. On this subject, 17 training courses were held for students, doctoral students, and research workers. Almost 500 users took part in these courses. The number of records downloaded from all the information sources available exceeded 460,000.

For several years, Brno University of Technology has been building a digital library as a conceptual solution to providing a general access to the digital content created at the university. In 2012, a transfer was carried out to DSpace, a new open source system. An archive of theses in electronic format is the largest collection with its transfer to the digital library being fully automated. Another major area is making available the R&D results in an open-access mode. In this connection, research workers and the editorial staffs of some BUT research journals are addressed with an offer of archiving their publications.

The BUT Central Library has traditionally joined the open-access support by taking part in the Open Access Week – installing an information stand in selected faculty libraries disseminating detailed information on this type of publishing. Steps were undertaken at the Portal of Libraries to insert more comprehensive information on the support of publishing research results as such.

Table 9.1: BUT University libraries

BUT	Počet
Yearly collection increase	17042
Total collection	230944
Number of periodical titles: – paper form – electronic form (estimate)*	686/98

Note: * = that only the periodical titles subscribed to by the University (or received as a gift or by an exchange) in paper and electronic formats are shown. Not included are other periodic titles that can be accessed by the library users within full-text resource consortia.

b) VUTIUM Press

The VUTIUM Press published three new titles (Mathematics II – two volumes, Structures and Architecture, Jazyk Verlag)
A total of 257 ISBN's were assigned in 2012 including 178 to faculties and constituent parts, 78 at VUTIUM (75 volumes of scientific writings and three VUTIUM's own publications).
Eleven issues were published of the journal BUT News with a yearly edition of 9,900. The number of pages per issue is 32 plus 4 pages cover. The edition of one issue is 900 copies.
In 2012, the VUTIUM Press editorial board met in November to present the titles to be included in the 2013 publishing plan and their order. Some titles with low sales were marked for removal from the publishing plan.
The VUTIUM Press participated in 5 book exhibitions and fairs – Leipziger Buchmesse (March), London Book Fair (April), The World of the Boo Prague (May), Autumn Book Fair Havlíčkův Brod (October), International Frankfurt Book Fair (October). A representative of the Press visited the first Summer Book Fair in Ostrava.

c) Centre of Computing and Information Services

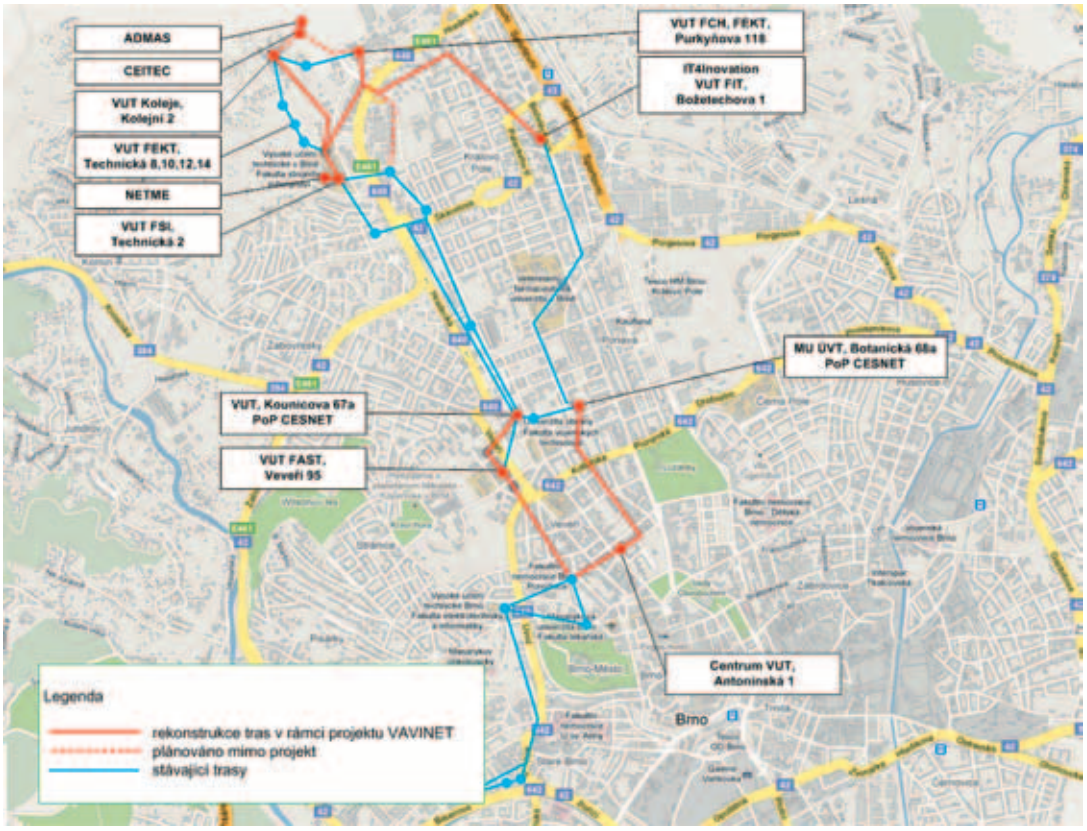
The BUT information system was enhanced in its R&D modules creating an R&D motivation system and tools for result processing, tools for processing the results of state school-leaving examinations, new user interfaces of all the Apollo modules including its study part and transition to a new graphic look of the public part of the web portal. A new model was designed to evaluate the ISO 9000 processes preparing the Centre processes for this certification.

As part of an RDI operative programme, the optical network infrastructure was strengthened by inserting fibres into existing routes to enable a better connection of the research centres and BUT constituent parts to the national optical infrastructure in the following routes:

- Božetěchova 1 (IT4I) – Purkyňova 118 (close to CEITEC and AdMaS)
- Antonínská 1 – Veveří 95 – Kounicova 67a (PoP CESNET)
- Technická 2 (NETME) – Kolejní 2 (near CEITEC)
- Technická 2 (NETME) – Purkyňova 118 (near CEITEC)
- Antonínská 1 – Botanická 68a (PoP CESNET)

The computer rooms at in Antonínská and Kounicova streets were enhanced by a system of inter-rack redundant cooling and a central UPS. A new powerful motor generator was bought for the Božetěchova site as well as a new generation of hardware and virtual servers with a total of 3,000 processor cores, 9,000 GB RAM and 120 TB of extremely fast SSD –accelerated hard disk capacity to help solve the computing tasks faced by the project teams of NETME at the Faculty of Mechanical Engineering, IT4I at the Faculty of Information Technology as well as by the SAP VUT and IS VUT systems. Most of the BUT servers were put to a virtual cloud mode so that they can now be virtually moved between the computing rooms situated in different city parts.
In 2012 the Centre of Computing and Information Services spent 1 million CZK to replace the outdated KolejNet 1 network elements. KolejNet now runs with 6,700 ports, of which 5,000 have already been transferred from 100 Mbit to 1 Gbit. Thus, the planned generation exchange of the active KolejNet elements continues.
Without cooperation with a bank, BUT student ID cards were produced in 2012. The new cards are equipped with a QR code referring to a visiting card.

BUT fibre optic routes and plan of their enhancement as part of the VAVINET project.



10



LIFELONG LEARNING

a) Lifelong learning courses offered by BUT (course numbers in study groups of Master Education Classification programmes) (Table 10.1)

Table 10.1: Lifelong learning courses offered by BUT (course numbers)

Accredited programme groups	Master Education Classification	Profession-oriented courses			Special-interest courses			U3V	Total
		up to 15 lessons	up to 100 lessons	more	up to 15 lessons	up to 100 lessons	more		
natural sciences	11–18							2	2
engineering	21–39	1	21					40	62
agriculture, forestry, veterinary	41, 43								
medicine, pharmacy	51–53							4	4
social sciences and services	61, 67, 71–73			28				2	30
economics	62, 65							1	1
law, public administration	68								
pedagogy, teaching, and social welfare	74, 75			1					1
psychology	77								
culture and art	81, 82							8	8
Total		1	21	29				57	108

b) Lifelong-learning courses offered by BUT with an indication of change on last year of the total student number expressed in percentage points. (Table 10.2)

Table 10.2: Lifelong learning courses offered by BUT (student numbers)

Accredited programme groups	Master Education Classification	Profession-oriented courses			Special-interest courses			U3V	Total	Incl. students admitted to an accredited degree programme pursuant to Section 60 of the University Act
		up to 15 lessons	up to 100 lessons	more	up to 15 lessons	up to 100 lessons	more			
natural sciences	11–18							36	36	
engineering	21–39	39	113					755	907	
agriculture, forestry, veterinary	41, 43									
medicine, pharmacy	51–53							144	144	
social sciences and services	61, 67, 71–73			388				190	578	cca 300
economics	62, 65							13	13	
law, public administration	68									
pedagogy, teaching, and social welfare	74, 75			30					30	
psychology	77									
culture and art	81, 82							851	851	
Total		39	113	418				1989	2559	

c) University of the Third Age

At present, the senior education courses referred to as a University of the Third Age form the main part of lifelong education at all Czech public universities. According to the information system of the Brno based Association of Universities of the Third Age, 23 universities offered a total of 1,036 courses attended by 36,571 senior students in 2012. This important social service provided by public universities received encouragement by 2012 being declared a European Year for Active Ageing and Solidarity between Generations.

In response to the growing importance of senior education, since early 2012, the Ministry of Education, Youth, and Sports has been providing support for this activity within development projects and through direct contribution to each university by the F factor based on the performance as measured by the number of student hours.



11



RESEARCH, DEVELOPMENT, ARTISTIC, AND OTHER CREATIVE ACTIVITIES

a) Research, Development, Artistic, and Other Creative Activities

One of BUT's strategic objectives is to present itself as a research university with all the relevant attributes. This objective is closely related to the requirement of sustainability of the five regional centres built within axis two of the RDI operational programme and two centres within axis one of the RDI operational programme and to the fulfilment of project indicators, to which BUT has committed itself. With its eight faculties and one university institute, Brno University of Technology develops creative activities in a wide range of engineering, science, and artistic fields. In science and engineering, this involves both basic and applied research and innovations. Using the rules of the R&D Council methodology, the ratio of the basic research results to the applied research results achieve is approximately 1:1. The quality of the research conducted at BUT is testified by the fact that two BUT faculties keep being rated among the best 20 organizations of the Czech Republic , faculty of mechanical engineering taking up the 10th position and the faculty of electrical engineering and communication the 12th position.

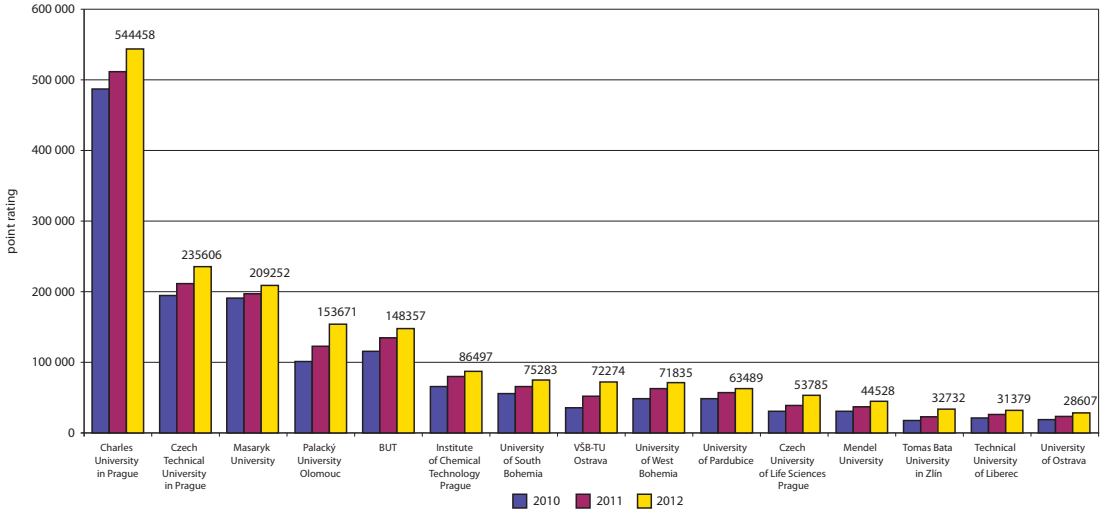


Fig. 1 Point rating of the results of selected public universities according to the methodology of R&D rating in the years 2010, 2011, 2012

Fig. 1 compares the point ratings of the results of selected public universities according to the R&D Council methodology, which favours basic research, see also Table 11.1. Even if heavily concentrating on the outcomes of applied research, BUT is still in the fifth position. However, compared with 2011, this is a drop by one position. If, on the other hand, the results achieved are re-calculated as per one academic, BUT has advanced from position five in 2011 to position three in 2012, see Table 11.2.

Table 11.1: Point rating of the results of selected public universities according to the methodology of R&D rating

University	2010	percentage of change on 2009	2011	percentage of change on 2010	2012	percentage of change on 2011
Charles University in Prague	487,227.18	13.5	513,337.71	5.4	544,458.00	6.1
Czech Technical University in Prague	194,546.77	25	211,795.96	8.9	235,606.00	11.2
Masaryk University	191,666.9	56.6	197,255.59	2.9	209,252.00	6.1
Palacký University Olomouc	101,707.54	40.3	122,834.71	20.8	153,671.00	25.1
BUT	115,882.01	30.7	134,933.71	16.4	148,357.00	9.9
Institute of Chemical Technology Prague	65,174.38	4.8	79,556.49	22.1	86,497.00	8.7
University of South Bohemia	55,585.84	42.2	65,244.23	17.4	75,283.00	15.4
VŠB-TU Ostrava	35,286.54	70.7	52,307.64	48.2	72,274.00	38.2
University of West Bohemia	49,036.45	66.3	62,430.5	27.3	71,835.00	15.1

Table 11.1: Point rating of the results of selected public universities according to the methodology of R&D rating

University of Pardubice	49,097.95	24.2	56,924.88	15.9	63,489.00	11.5
Czech University of Life Sciences Prague	30,097.43	58.2	39,260.67	30.4	53,785.00	37.0
Mendel University	30,721.81	33.2	37,075.97	20.7	44,528.00	20.1
Tomas Bata University in Zlín	17,822.84	83.7	22,529.43	26.4	32,732.00	45.3
Technical University of Liberec	21,217.92	50	25,652.96	20.9	31,379.00	22.3
University of Ostrava	18,683.05	81.1	23,416.61	25.3	28,607.00	22.2
University of Economics Prague	25,529.00	73.1	24,029.97	-5.9	23,553.00	-2.0
University of veterinary and Pharmaceutical Sciences Brno	16,598.89	23.7	18,838.34	13.5	19,244.00	2.2

The present BUT research infrastructure has improved significantly thanks to the five regional applied research centres financed from the second priority axis of the RDI operational programme and the BUT participation in the CEITEC and IT4I projects to build centres of excellence within the first priority axis of the RDI operational programme. One of the commitments under the condition for financing the research centres within the RDI operational programme is the building of an internal system of commercialization. BUT was among the first universities to establish a transfer of technology department. Established in 2002, it had only three employees at that time. From the very beginning it has been the coordinator of a Regional Contact Organizations project, which, in four consecutive project stages has provided the South Moravian Region with information on the current challenges of the Framework Programmes, held seminars, workshops, and working meetings.

Table 11.2: Results rated by the methodology recalculated as per one academic for years 2010, 2011, 2012 at selected universities. Note that academics include: professors, associate professors, teachers)

University	Points recalculated as per one academic 2010	Recalculated number of academics 2010	Results rated by the methodology 2011	Points recalculated as per one academic 2011	Recalculated number of academics 2011	Results rated by the methodology 2012	Points recalculated as per one academic 2012
Charles University in Prague	141.23	3465	513,337.71	148.15	3,528.60	544,458.00	154.30
Czech Technical University in Prague	127.24	1500	211,795.96	141.16	1,484.30	235,606.00	158.73
Masaryk University	129.94	1415	197,255.59	139.41	1,380.90	209,252.00	151.53
Palacký University Olomouc	84.16	1143	122,834.71	107.44	966.60	153,671.00	158.98
BUT	109.82	998	134,933.71	135.26	891.30	148,357.00	166.45
Institute of Chemical Technology Prague	158.77	415	79,556.49	191.93	420.20	86,497.00	205.85
University of South Bohemia	95.20	588	65,244.23	110.96	443.20	75,283.00	169.86
VŠB-TU Ostrava	34.77	1016	52,307.64	51.47	952.50	72,274.00	75.88
University of West Bohemia	55.94	822	62,430.50	75.94	719.20	71,835.00	99.88
University of Pardubice	94.36	513	56,924.88	110.96	462.30	63,489.00	137.33
Czech University of Life Sciences Prague	52.78	586	39,260.67	67.00	587.10	53,785.00	91.61
Mendel University	61.59	507	37,075.97	73.07	485.70	44,528.00	91.68
Tomas Bata University in Zlín	42.05	397	22,529.43	56.82	427.30	32,732.00	76.60
Technical University of Liberec	37.63	550	25,652.96	46.65	533.80	31,379.00	58.78
University of Ostrava	40.53	447	23,416.61	52.41	433.20	28,607.00	66.04

Table 11.2: Results rated by the methodology recalculated as per one academic for years 2010, 2011, 2012 at selected universities. Note that academics include: professors, associate professors, teachers)

University of Economics Prague	43.68	583	24,029.97	41.25	569.50	23,553.00	41.36
University of veterinary and Pharmaceutical Sciences Brno	67.83	259	18,838.34	72.65	250.20	19,244.00	76.91

Owing to the TT Point BUT project, the staff number could be raised to fifteen in 2010. The project made it possible for the department to extend the services offered by a patent representative, legal services on intellectual property, and professional managers of technology transfer at BUT faculties. Within the region, the Technology Transfer Department coordinates cooperation in the innovation voucher projects. Traditionally, it has served as the first contact point, meeting representatives from industries interested in making contacts and initiating cooperation with the university.
BUT has devised numerous ways of support for the creative activities of its staff such as organizing a competition for R&D workers called TOP10 VUT, rewarding innovators, inventors, authors of utility patterns and other industrial property objects. As part of a development programme in 2012, authors of papers published in impacted journals were rewarded.

b) Linking creative activities with teaching

BUT employs several methods to link creative activities with teaching: making every effort to engage talented students in research and development as members of research teams, applying a system of motivation encouraging the young scientists to apply for associate professor and professor tenures as soon as possible and attracting experts from industrial and commercial spheres to cooperate with BUT via projects of the science for competitiveness operational programmes.

c) Bachelor's, Master's, and doctoral students' involvement in the creative activities at the university

Master's, doctoral, and some Bachelor's students are getting involved in the creative activities vie various research projects. This also includes assigning the themes of degree and doctoral projects for the students to have an opportunity to participate in research supervised by experienced researchers. Specific research projects have an important role providing money to cover the costs related to students' research.

d) Targeted research, development, and innovation funding

Table 11.3: Subsidies

Targeted RDI NIV subsidies	847 568 th. CZK
Subsidies – transfer from main solution provider outside BUT	292 136 th. CZK
Subsidies – transfer to solution co-providers	-74 317 th. CZK
Returns	-1 340 th. CZK

e) Scientific conferences (co-)organized by BUT in 2012 (Table 11.4)

Table 11.4: Scientific conferences (co-)organized by the university (numbers)

Faculty	Total number	Including those with 60 or more participants	Including those with international participation
civil engineering	3	3	2
mechanical engineering	7	7	6

Table 11.4: Scientific conferences (co-)organized by the university (numbers)

electrical engineering and communication	11	11	7
architecture	3	3	2
chemistry	1	1	1
business and management	9	1	7
information technology	6	4	4
institute of forensic engineering	2	2	2
Total	42	32	31

f) Support for doctoral students and staff in post-doctoral positions

Doctoral students receive a motivation scholarship in third and fourth years for defending their theses. Next they receive scholarships on a yearly basis based on the number of credits gained for their activities over the academic year. These include publishing in impacted journals, papers published in journals listed as reviewed periodicals or dedicated journals. Next, papers published in proceedings of conferences contained in the Thomson Reuters database or national and international conferences, and publications of monographs. Credits can also be obtained for stays abroad, participation in teams working various projects. Many doctoral students come for combined studies from research teams of companies or institutes involved in research. This creates cooperation links and faculties offer such students opportunities to use their experimental facilities. Doctoral graduates winning post-doctoral positions receive support from faculties' other funding resources.

In 2012 BUT won two projects of the Education for Competitiveness operational programme, "Support for establishing excellent team of interdisciplinary research at BUT" and "Excellent young scientists at BUT" making it possible to pay 80 post-doctoral positions with only five positions remaining uncovered.

g) Participation of application sphere designing and implementing degree programmes

The intensity and ways of application sphere participation in designing and implementing degree programmes differ across faculties. The most frequent way is the participation of external experts in doctoral boards, scientific boards, state-examination boards and thesis-defence boards. External experts also give lectures at BUT. Their participation is especially intensive at the Faculty of Information Technology where they sit on the industrial board participating in the implementation of degree programmes and being regularly informed on the introduction of new courses in terms of its methods, criteria, and timing.

Cooperation includes the following activities:

- exchange of information on the needs of the commercial and academic spheres,
- direct research cooperation – use of the academic potential by industries,
- coordinated approach to winning research funding from the government and EU budgets,
- preparation of conditions favourable to better use of the research potential, joint departments, transfer of technologies.

h) Cooperation with the application sphere on facilitating and transferring innovations

- BUT cooperates with a number of companies on joint applied-research projects – such as with Škoda Auto Mladá Boleslav, through both Škoda and the research of VW, Honeywell, Tescan, FEI, Microsoft, Bosch Diesel Jihlava, Evektor, AŽD Praha, and others. Important is cooperation with the regional chamber of commerce, which create conditions favourable to publishing BUT offers in their publications. Every year, new cooperation agreements are signed thanks to BUT participating in the innovation-voucher projects both in the South Moravian Region and outside it such as in Zlín, Olomouc, Liberec, Karlovy Vary, etc. Another form of cooperation with the application sphere takes place based on the demand of companies for particular technical solutions to manufacturing technology problems. The knowledge acquired in these projects are protected and can subsequently be licensed according to the agreements signed and BUT internal rules.
- In 2012, BUT submitted a total of 6 projects of the RDI operational programme, call 6.3 to support pre-seed activities, three approved projects were launched in October 2012. Innovative outcomes of the projects will be offered to the industrial partners in subsequent years.

i) Number of agreements with the application sphere concerning the use of the R&D results and innovations

Table 11.5: Number of agreements with the application sphere concerning the use of the R&D results and innovations

Year in which agreement was signed	Number of licence agreements	Partner
2010	2	FEI Czech republic, s. r. o.
		Lingea s. r. o.
2011	7	Comenius University in Bratislava
		TESCAN, a. s.
		Northwestern College
		Universita di Palermo
		BD SENSORS s. r. o.
		University of Zagreb
		Masaryk university Brno
2012	5	Wilhelm Kachele GmbH
		Universidad de los Andes
		Freescale Polovodiče Česká republika s. r. o.
		NAFIGATE Corporation, a. s.
		Institute of Orthopaedic Research and Development
Total	14	

j) External experts teaching in accredited programmes** table 11.6)

Table 11.6: Application experts teaching in accredited programmes** (numbers)

BUT	Number of persons
Faculty of Civil Engineering	22
Faculty of Mechanical Engineering	20
Faculty of Electrical Engineering and Communication	27
Faculty of Architecture	35
Faculty of Chemistry	12
Faculty of Business and Management	14
Faculty of Information Technology	37
Institute of Forensic Engineering	19
Total	186

Note: * = Faculty or other BUT constituent part offering an accredited programme/study field.
Note: ** = Persons teaching in at least one course of the academic year

k) Number of study fields requiring at least one-month on-the-job internships (Table 11.7)

Table 11.7: Number of study fields requiring at least one-month on-the-job internships (numbers)

BUT	Number of study fields
Faculty of Civil Engineering	3
Faculty of Electrical Engineering and Communication	6
Faculty of Business and Management	1
Total	10

l) Income from licences sold by the university in 2012

Table 11.8: Income from licences sold by the university in 2012

year of agreement	number of licence agreements	Partner	Income (CZK) 2011	Income (CZK) 2012
2010	2	FEI Czech republic, s. r. o.	0.00	0.00
		Lingea s. r. o.	0.00	0.00
2011	7	Comenius University in Bratislava	25 000.00	0.00
		TESCAN, a. s.	0.00	0.00
		Northwestern College	6 536.70	0.00
		Universita di Palermo	2 574.00	0.00
		BD SENSORS s. r. o.	0.00	0.00
		University of Zagreb	0.00	103 200.00
		Masaryk university Brno	67 500.00	0.00
2012	5	Wilhelm Kachele GmbH	0.00	8 781.50
		Universidad de los Andes	0.00	6 720.30
		Freescale Polovodiče Česká republika s. r. o.	0.00	0.00
		NAFIGATE Corporation, a. s.	0.00	500 000.00
		Institute of Orthopaedic Research and Development	0.00	2 006.65
Total	14		101 610.70	620 708.45

m) Income from contracts of contracted research and development*

That is, concerning activities carried out by the university for application sphere customers against payment, without discriminating between the money received from a customer being of a public or private origin.

* Contracted research is based on cooperation (interaction) specifically tailored to the research needs of application sphere customers with a higher-education institution conducting research to meet the requirements of a customer and the customer paying for such research. Typically, this involves large projects, original research and a written report. Contracted research is usually demanded by a particular external organisation (to meet its needs). It is not relevant whether the money paid by the customer for contracted research come from public or private funds. The case of a university receiving a targeted subsidy for applied research cannot be considered contracted research.

Table 11.9: Income from contracted research and development

South-Moravian-Region innovation vouchers	2009		2010		2011		2012	
	Submitted	Approved	Submitted	Approved	Submitted	Approved	Submitted	Approved
FCE	11	6	26	12	49	9	33	11
FEEC	7	1	7	3	7	2	17	5
FIT	7	2	4	2	6	3	8	2
FC	13	2	7	4	10	1	25	5
FME	50	11	22	11	39	11	26	7
FBM	2	2	1	1	0	0	1	0
CEITEC	0	0	0	0	0	0	2	1
BUT Total	90	24	67	33	111	26	112	31

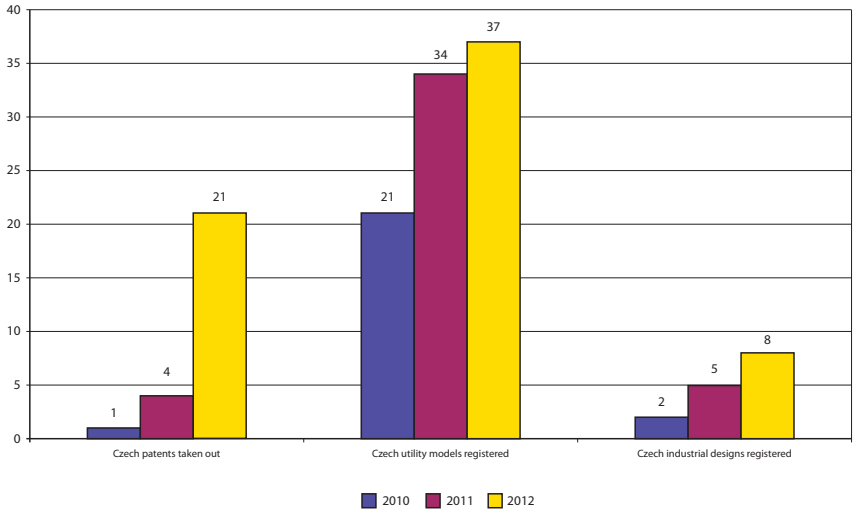
In 2012, BUT received 35 million CZK in contracted research.

n) Commercialization policy

For a long time, BUT has maintained a unified approach to the protection of industrial rights, that is, safeguarding the ownership rights to all its research and development results and preferring licensing to property-right transfers in commercialising the results. Co-ownership of the results by a third party, particularly in joint projects, is considered separately for each case depending on the particular result. Contracts signed on the use of such results concentrate on governing the ownership rights, sharing the costs of legal protection, and splitting the revenues from the use of the results. Each result generated is protected by BUT according to its nature and based on an internal assessment of its commercial potential. The policy in each particular case is determined by the Technology Transfer Department. The result nature permitting, application for an invention, utility or industrial model is recommended. A usual procedure involves filing a Czech application for a Czech invention, and/or utility model. Within 12 months, the university decides, whether the protection should be extended on an international scale. This is mostly done via the European Patent Office or a Patent Cooperation Treaty. The protected results are published through the international EEN database (http://www.european-business-support-network.eu/search-business/een-database) or at the BUT portal.

Table 11.10: BUT Intellectual property portfolio worked on by the Department of Technology Transfer from 2010 to 2012

Year	2007	2008	2009	2010	2011	2012
Employee inventions submitted	8	29	28	49	36	94
European invention applications submitted	0	0	1	0	4	3
International patent applications submitted	0	1	3	0	5	1
Czech invention applications submitted	4	11	11	22	20	25
Czech utility model applications submitted	2	8	21	34	35	37
Czech registered trade mark applications submitted	0	0	0	2	0	0
Industrial design applications submitted	0	0	1	4	9	4
Czech patents taken out	0	1	3	1	4	21
Czech utility models registered	0	4	14	21	34	37
Czech industrial designs registered	0	0	0	2	5	8



Patents taken out and industrial designs registered from 2010 to 2012

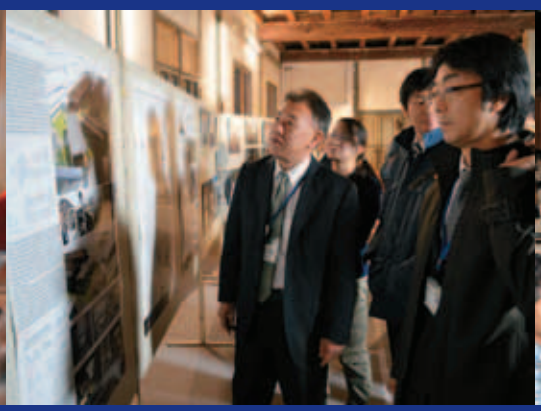
o) Characteristics of BUT activity in and outside the region

- in the region:
  - BUT is a co-author of RIS
  - BUT cooperates with universities and firms (not only) in the region

- outside the region
  - centres of excellence
  - regional centres to guarantee research, development, and innovations in the Czech Republic and, perhaps, in the central European region, too
  - basic research results (publications in impacted journals and other journals with international renown indexed in the SCOPUS, WoS, etc. databases)
  - applied research results, patents (world-wide, European, Czech)
  - research cooperation with dominant manufacturers in the Czech Republic (these are international concerns including Siemens, Škoda Auto Mladá Boleslav, through both Škoda and the research of VW, Honeywell, Tescan, FEI, Microsoft, Bosh Diesel Jihlava, Evektor, AŽD Praha, and others)



12


INTERNATIONALIZATION

a) BUT internationalization strategy, priority areas

The key objective of the Ministry of Education's planning for the years 2011 to 2015 is to redirect the development efforts from quantity towards quality. As internationalization is among BUT's strategic plans, the university management decided to concentrate on concrete areas. Priorities were set in the university strategic plan and its amendments and in the strategic plan of international relations . The first aim is to increase the number of Master's students mostly those speaking a Slavonic language. The aim is to have them stay at the university in doctoral programmes, get involved in the RDI operational programme projects. Next aim is to establish contacts with those Asian universities that have a research potential, recruit Slovak students as well as self-paying students from abroad for courses taught in English.

When recruiting international students, the university as a whole and its faculties, while offering all levels of programmes, concentrate on winning good Master's and doctoral students from abroad. Last year, too, the services and assistance offered by the South Moravian Centre for International Mobility were used to the full. In 2012, the Centre granted 25 one-year starting scholarships.

In last year, we continued to support talented students from abroad studying at BUT. In 2012, 3,264,000 CZK was paid in regular scholarships to 57 students. This subsidy for the scholarship programme for BUT international students was a major boost for BUT research internationalization. Concerning the above summaries, the demographic structure of the scholarship target groups is worth noticing. The scholarships were paid to students from the Russian Federation, Ukraine, Serbia, Belarus, Sudan, Syria, and Kazakhstan.

Also mentioned should be the participation of BUT in SoMoPro, a project coordinated by the South Moravian Centre for International Mobility aiming to increase the number of leading domestic and foreign scientists working or staying at Brno universities. BUT activities at international educational fairs were also important. BUT participated in GAUDEAMUS, a traditional international educational held in Brno and Prague, next in a fair organized by the European Association of International Education (EAIE) held in Copenhagen last year. In line with the priorities of international cooperation, BUT, for the first time, participated in educational fairs in Asia, particularly in Kuala Lumpur, and George Town. Participation in the ACADEMIA fair held in Bratislava is also desirable because of the geography, language similarity and the high numbers of Slovak students studying at BUT. Last year for the second time, BUT took part in the PRO EDUCO fair at Košice.

New teaching and research cooperation agreements were signed with the following universities: Technical University of Varna, Bulgaria, M. Auezov South Kazakhstan University, Kazakhstan, S. Seifullin Kazakh Agro Technical University, Kazakhstan, Kookmin University, South Korea, and Izhevsk State Technical University, Russia.

The university is also an active member of international organizations such as the European University Association (EUA), Conference of European Schools of Advanced Engineering Education and Research (CESAER), and, newly, EUniverCities.

b) University involvement in international educational programmes including mobilities (Table 12.1)

Table 12.1: University involvement in international educational programmes

BUT	EU Educational and Vocational Programmes												Total
	Erasmus	Comenius	Grundtwig	Leonardo	Jean Monnet	Erasmus Mundus	Tempus	Oth-ers	Ceepus	Aktion	ME Develop. progr.	Others	
No. of projects	3	0	0	0	0	0	1	0	4	1	10	0	19
No. of out-students*	686	0	0	0	0	0	0	0	5	2	131	0	824
No. of in-students**	546	0	0	0	0	0	0	0	6	0	20	62	634
No. of out-teachers***	176	0	0	0	0	0	0	0	4	8	4	8	200
No. of in-teachers****	49	0	0	0	0	0	8	0	1	8	2	6	74
No. of other in-persons	70												70
No. of other out-persons	4												4
Subsidy in thousand CZK	27735								101	127	2780	110	30853

Note: * = Out-students – students staying abroad in 2012, included are also students beginning their stay in 2011. Only students with stay-length longer than 4 weeks are included. If a university has another study-stay-length, this is noted below the table.

Note: ** = In-students – students staying at the university in 2012, included are also students beginning their stay in 2011. Only students with stay-length longer than 4 weeks are included. If a university has another study-stay-length, this is noted below the table.

Note: *** = Out-teachers – teachers staying abroad in 2012, included are also teachers beginning their stay in 2011. Only teachers with stay-length longer than 5 days are included. If a university has another study-stay-length, this is noted below the table.

Note: **** = In-teachers – teachers staying at the university in 2012, included are also teachers beginning their stay in 2011. Only teachers with stay-length longer than 5 days are included. If a university has another study-stay-length, this is noted below the table.

c) University involvement in international research and development programmes including mobilities (Table 12.2)

The amount of funding granted for international RDI projects is among the key indicators for projects implemented in priority axes one and two of the RDI operational programme. Through international projects BUT is promoted in the European research space pursuing the Horizon 2020 strategy. BUT's strategic aim is to increase the proportion of international projects of the total number of RDI projects. Table 12.2 and the below diagram illustrate the numbers of international projects comparing them with the 2011 numbers.

Table 12.2: University involvement in international research programmes

Grants, research projects	2011	2012
Kontakt (ME, LH)	11	13
Mobility (MEB)	14	5
EUREKA (OE, LF)	1	2
INGO (LA, LG)	3	3
COST (OC, LD)	13	15
EUPRO (OK, LE)	1	1
PMS support from MEYS	24	26
AKTION 1 4	1	4
6th framework programme, mobility (7AMB)	0	3
7th framework programme	26	26
EOARD	0	0
Transatlantic cooperation (EC EU)	1	1
Total	95	99

The above data indicate that the number of such projects has increased by about five percent compared with last year.

d) Student and teacher mobility by country (Table 12.3)

Table 12.3: Student and teacher mobility by country

Country	Outgoing students	Incoming students	Outgoing teachers	Incoming teachers
Afghanistan		1		
Argentina	1			
Australia		1		
Belgium	29	5	7	2
Bulgaria	5	28	6	5

Table 12.3: Student and teacher mobility by country

Monte Negro	3	2	1	
Denmark	63	1	3	2
Estonia	4	4	4	2
Finland	52	2	12	2
France	42	71	16	2
Croatia	2	2	1	
India	1			
Indonesia	1			
Ireland	5		1	
Iceland	5			
Italy	20	1	4	
Israel	1			2
Japan	1	2	1	1
Jordan	1			
Canada	1			
Kazakhstan		5	3	
Columbia	1			
Korean Republic	1			
Liechtenstein	2			
Lithuania	11	28	3	3
Latvia	6	3	4	3
Luxembourg	2			
Hungary	2	3	2	1
Macedonia	2			
Malaysia	2			
Malta	2		3	
Mauritius	1			
Mexico		2		
Moldavia		1		
Germany	81	21	2	4
the Netherlands	24		3	
Norway	23		1	5
New Zealand	1			
Poland	4	6	5	1
Portugal	46	68	6	
Austria	78	5	23	9
Rumania	2	3	2	
Russia	6	16		3
Greece	16	62	9	1

Table 12.3: Student and teacher mobility by country

Slovakia	30	19	26	1
Slovenia	21	1	4	3
United Kingdom	79	15	11	2
USA	7	3	1	1
Serbia		2		8
Spain	55	140	22	3
Sweden	37		4	
Switzerland	27	21	1	
Thailand		2		
Thai Wan		19		2
Turkey	16	66	9	5
Ukraine	2	3		1
Total	824	634	200	74

Note: * = Out-students – students staying abroad in 2012, included are also students beginning their stay in 2011. Only students with stay-length longer than 4 weeks are included. If a university has another study-stay-length, this is noted below the table.

Note: ** = In-students – students staying at the university in 2012, included are also students beginning their stay in 2011. Only students with stay-length longer than 4 weeks are included. If a university has another study-stay-length, this is noted below the table.

Note: *** = Out-teachers – teachers staying abroad in 2012, included are also teachers beginning their stay in 2011. Only teachers with stay-length longer than 5 days are included. If a university has another study-stay-length, this is noted below the table.

Note: **** = In-teachers – teachers staying at the university in 2012, included are also teachers beginning their stay in 2011. Only teachers with stay-length longer than 5 days are included. If a university has another study-stay-length, this is noted below the table.



13


EVALUATION OF ACTIVITIES CARRIED OUT

a) Internal evaluation of the quality of education

As required by the University Act and the BUT Statutes, systematic evaluation is carried out of the quality of teaching at all BUT Faculties. This evaluation is done by Subject-Area Boards. In addition, an assessment is carried out of the contents of courses, teaching methods, and the teacher performance by sitting in on lectures and classes, organizing targeted pedagogic meetings and experience-exchanges. The results of such assessment are used to innovate and modernize the course curricula, improve the teaching methodology and to enhance the teachers' competences.

Once or twice a year, surveys are undertaken at faculties among students to record their opinions on the quality of teaching using electronic or paper questionnaires, focusing on the content of the courses, the teaching methods and approach by the teachers . Organized by faculties in cooperation with the student chambers of academic senates, these enquiries are taken to be integral parts of teaching quality assessment. The results are taken into consideration when assessing the teachers and checking on their teaching activities. In the future, the student evaluation is expected to be integrated and a unified approach is planned to the use of its results.

b) External quality evaluation at BUT in 2012

Over the year, the new and innovated degree programmes were monitored by the Accreditation Committee; no problems were encountered during cooperation.

An enquiry is made among BUT graduates on a regular basis (once a year or biennially) to record the level of their education, knowledge and skills and the jobs they were offered. Results of such enquiries are regularly taken into consideration in creating BUT educational policy and incorporated in the relevant strategic documents, used to improve degree programmes and course curricula. Moreover, teachers of faculties' departments are often in personal contact with the graduates when consulting, directly cooperating with them on research, development, and innovation projects; this cooperation, too, helps to fathom the effects of student education.

The external evaluation of the quality of teaching and its results is also much helped by regular contacts with companies employing BUT graduates. Every year, Days of Companies are held at faculties offering cooperation and jobs to students before graduation; presented are also the profile and competence requirements of the company HR officers, who also give tips on the improvement of the current BUT graduates 'quality. Direct cooperation between BUT students and teachers and the commercial and social sphere is also useful for experience exchange.

c) Financial audits carried out at BUT in 2012

A system of internal inspection was introduced at BUT in 2004 as required by Act no. 320/2001 Coll. concerning financial audits. Described by internal rules and guidelines, it received the status of a control inspection and independent internal audit. In 2012, an amendment was issued to the statutory instrument, bursar's directive no. 62/2004, to specify in more detail, the delegating of obligations, authorities. This created control mechanisms to check on the spending to achieve the fulfilment of the BUT Strategic Plan.

In 2012 the internal financial audit was continued focussing on the efficiency and adequacy of managing projects of the RDI operational programmes based on an annual plan set up in view of the evaluation of the BUT risks.

On a continual basis, serious findings of the internal audit and the measures recommended to maintain the functionality of the system of internal inspection were discussed by the BUT top management and by the rector's advisory bodies, that is, identification and evaluation of the risks carried by the University Risk Management Board and by the rector's advisory focussing on risk management for RDI projects.

d) Information on the certification processes at BUT

Implementing the quality management system, the following activities were carried out by the BUT Quality Department:

1. **Determination of steps to be taken to harmonize the quality assurance system at the rector's office and other constituent parts except Accommodation and Catering Services with the ČSN EN ISO 9001:2009 standard**

Based on this analysis, steps were planned to ensure compliance consisting of the following changes in or amendments to old and publishing of new documents:

- Quality assurance policy – a new document – see Rector's Decision no. 6/2012 concerning quality assurance policy. Here the top management defines official lines for quality assurance. Set in conformance with ČSN EN ISO 9001:2009. Document to be revised annually and updated as needed by BUT management.

- Quality objectives for 2012 – a new document – see Rector's Decision no. 7/2012 concerning quality objectives. The document aims to ensure continuity and direction given by the BUT strategic documents (such as Mission Statement) implemented into particular objectives of relevant employees. Defined for 23 organisational units of the rectorate and other constituent parts except Accommodation and Catering Services. The objectives are revised on a regular basis and updated for further periods if necessary. Document defined as Rector's Decision to be reissued on an annual basis (a new version is for the next calendar year such as RECTOR'S DECISION NO. 7/2012 QUALITY ASSURANCE OBJECTIVES FOR 2012). This document is created as complying with ČSN EN ISO 9001:2009.

- Internal audits of the quality management system – new and system-compliant. Six internal auditors were trained for quality management system. A plan of 12 internal audits of quality management was designed for 23 organizational units and in one calendar year. According to the plan, each organizational unit was audited once in the calendar year 2012. Two new reports were written: QUALITY MANAGEMENT SYSTEM INTERNAL AUDIT REPORT and NON-COMPLIANCE REPORT – QUALITY MANAGEMENT SYSTEM. A new methodological framework was written of questions for QMS internal auditors. The system of internal audit management is officially defined and approved by the parties in the control document, Rector's Guideline no. 1/2012 concerning quality management system internal audit. Suggestions from internal audits are reported to the university management (three times a year) to be used for setting quality objectives for the year YYYY. This document has again been written to be ČSN EN ISO 9001:2009 compliant. The system approach to the management of internal audits is checked every year.

- Communication at BUT – a new control document describing the communication service processes at the rectorate and other constituent parts except Accommodation and Catering Services. Generally, this directive sets rules of quality communication. It describes specialised terminology, communication process at BUT, satisfaction with communication at BUT, BUT communication monitoring and measurement, data analysis, BUT communication trouble shooting and remedial and preventive measures.

- Management of documents at BUT – the Creation and Management of Document directive was updated. This control document has already been updated twice to achieve ČSN EN ISO 9001:2009 compliance.

- Quality Manual – a document defining the quality management system at the rectorate and other constituent parts except Accommodation and Catering Services. It is new and provides answers to the following system requirements of ČSN EN ISO 9001:2009: 4. Quality management system, 4.1 General requirements, 4.2 Documentation requirements (4.2.1 Generally, 4.2.2 Quality manual, 4.2.3 Document management, 4.2.4 Record management), 5. Organisation management responsibility, 5.1 Management activity and commitment, 5.2 Customer orientation, 5.3 Quality policy, 5.4 Planning (5.4.1 Planning objectives, 5.4.2 Quality management system planning), 5.5 Responsibility, authority, and communication (5.5.2 Management representative, 5.5.3 Internal communication), 5.6 Management system revision (5.6.1 Generally, 5.6.2 Revision input, 5.6.3 Revision output), 6. Resource management, 6.1 Provision of resources, 6.2 Human resources (6.2.1 Generally, 6.2.2 Competence, training and importance awareness), 6.3 Infrastructure, 6.4 Working environment, 7. Product implementation, 7.1 Product implementation planning, 7.2 Customer related processes (7.2.1 Determining product related requirements, 7.2.2 Revising product related requirements, 7.2.3 Customer communication), 7.3 Design and development (7.3.1 Design and development planning, 7.3.2 Design and development input, 7.3.3 Design and development output, 7.3.4 Design and development revision, 7.3.5 Design and development verification, 7.3.6 Design and development validation, 7.3.7 Design and development change management), 7.4 Purchase (7.4.1 Purchase process, 7.4.2 Information for purchase, 7.4.3 Verification of the purchased product), 7.5 Manufacturing and service provision (7.5.1 Management of manufacturing and service provision, 7.5.2 Validation of processes for manufacturing and service provision, 7.5.3 Identification and trackability, 7.5.4 Customer property, 7.5.5 Product saving), 7.6 Monitoring and measuring equipment management, 8. Measurement, analysis and improvement, 8.1 Generally, 8.2 Monitoring and measurement (8.2.1 Customer satisfaction, 8.2.2 Internal audit, 8.2.3 Process monitoring and measurement, 8.2.4 Product monitoring and measurement), 8.3 Non-compliant product management, 8.4 Data analysis, 8.5 Improvement (8.5.1 Continual improvement, 8.5.2 Remedial steps, 8.5.3 Preventive measures).

- Evaluation and development of employees – a control document is being written called Rector's Directive for Evaluation and development of employees. Document have been collected for a tender to provide software for a regular support of the implementation of evaluation and development of employees (co-organized by the HR Department and Quality Department).

- BUT quality management documents shared at www.vutbr.cz – http://www.vutbr.cz/official-notice-board/quality-management are inserted and regularly updated. In this way information can be made available for targeted groups (different authorisation level for viewing documents via www.vutbr.cz).

- Data analysis – the quality of communication is rated using a defined communication quality table. Data are analysed from the following communication routes:
  - control communication via BUT internal rules;
  - control communication in meetings;
  - generally, all communication taking place at BUT;
  - internal audits of the quality management system.

The data analysis is configured for assessing from the highest hierarchical management position. This is given by the first new configuration of quality measurement. Using key performance indicators, in the future, the measurement of processes must be extended to relevant hierarchical management levels of the rectorate and other constituent parts except Accommodation and Catering Services.

2. Quality management system audit prior to an external certification audit

Before a certification audit by an independent and accredited certification body, an internal system audit was held of the first and second degrees. This was because perfect system preparedness was desired before the actual certification process, which means that an audit was organized to achieve a 100 percent compliance with ČSN EN ISO 9001:2009.

Also meetings were scheduled for the top management, senior employees, selected employees, and other employees. Presentations were held for these target groups. The aim was to inform the employees as much as possible on the certification process at the rectorate and other constituent parts except the Accommodation and Catering Services. Each employee taking part in the certification audit received a list of the audit themes. He or she was instructed on these themes to be able to distinguish between the terms used by quality management and those used by a tertiary-education institution.

3. Inviting tenders for an external independent and accredited certification body

Tenders were invited pursuant to the legislation and BUT internal standards currently in force. All documents relevant for this competition are available in an archive file of the Quality Department (application documents, accompanying e-mails, quotations, quotation report, etc.).

4. Certification audit by an external independent and accredited certification body

The winning bid was determined of an external and independent accredited organization. The certification audit took place on 13th and 14th December with three external certification auditors (as required by a methodological directive of the Czech Institute for Accreditation). Based on a certification audit, the certification body drew up the following documents: Report on first and second degree audits. The certification audit was successful proving a 100-percent compliance of the management system at the rectorate and other constituent parts except Accommodation and Catering Services with ČSN EN ISO 9001:2009. A certificate was issued with a three-year validity. No system non-compliance was detected. Among others, the report lists weaknesses of the management system specifying suggestions for improvement. After analyzing the report, the BUT top management set tasks to be implemented to remove the weaknesses, taking into the comments and recommendations for improvement. All the documents have been archived at the Quality Department.

e) Benchmarking BUT against domestic and foreign universities of a similar type

BUT systematically participates in work on national quality-related projects. Decentralized and centralized development projects implementing the themes of the MEYS development programme could be taken as examples as well as an individual national project, Quality Assurance and Assessment in the tertiary education system implemented as part of the Education for Competitiveness operational programme, the priority axis of the system framework of lifelong learning, whose results are to be used to amend the university act in the Czech Republic and to help implement other large projects financed from EU funds.

Also BUT's participation in work on international quality-related projects:

- At present, they include no case of benchmarking, as there is no such project either on a national or international scale at present. From 2013, another round will be started of U-Multirank investigation, for which BUT has registered as a technical university.
- For the years 2011 to 2013, BUT is involved as a pilot university in the international project, Identifying Barriers in Promoting the European Standards and Guidelines for Quality Assurance at Institutional Level. This project receives funding from the EC funds and is coordinated by CSVŠ, v. v. i., ČR. Solution co-providers are universities and research institutions from six European countries. Cooperation takes place in nine thematic areas.

- From 2010 to the end of 2012, BUT served as a pilot university in a QUESTE_SI international project managed by the European Commission focussed on the concept of responsibility and sustainability in the social, economic, and environmental sense. Five BUT faculties and BUT as a whole participated in the project. The activity involved internal evaluation such as writing a self-evaluation report, next an external evaluation by international auditors and the project was finished by certificates being given with graded evaluation depending on the audit results. BUT received five certificates. The general project result consisted in describing the situation at European technical universities, rating their quality with the above aspects being taken into consideration.

f) Self-evaluation of educational activities carried out outside BUT's campus (consulting centres, distant-learning centres, etc.)

Teaching at consulting centres and distant-learning centres is managed by the relevant BUT faculties, monitored on a continual basis, and modified if and as needed.



14



UNIVERSITY'S NATIONAL AND INTERNATIONAL EXCELLENCE

a) BUT membership in international associations, organizations, and societies

Table 14.1: BUT membership in international associations, organizations, and societies

International organizations	Country	Status
Academy of International Business	USA	member
Academy of Materials and Manufacturing Engineering – Poland		
ACM	USA	member
Advisory Group for Aeronautics in FP6, Brussels		
AEEA-EAAE (Association europeenne pour l'enseignement de l'architecture- European Association for Architectural Education,		
AESOP – Association of European Schools of Planning		
AIB – Academy of International Business	USA	member
Air Infiltration and ventilation centre ECBCS IEA		
American ceramic Society,	USA	
American vacuum Society		
APA, division 35 Society for the Psychology of Women	USA	member
ASM – American Society for Materials	USA	
ASME	USA	member
Berkeley Initiative in Soft Computing	USA	member
British Sociological Association	UK	member
CEWS – Center of Excellence Women and Science	Germany	member
CESAER – Conference of European Schools for Advanced Engineering Education and Research	USA	member
CIB – Conseil International du Bâtiment / International Council for Building		
Cisco Networking Academy	USA	CCNA and CCNP instructor
COST Action 615, Action G3, Action 633, Action P20, Action 0806 Particles		
Danube Rectors Conference	Austria	
DOCOMOMO International Documentation and Conservation Modern Movement		
EACES	UK	member
ECBCS International Energy Agency (IEA)		
ECSB – European Council for Small Business) EU (touring selected EU countries)	Finland	vice-president for CR
EIASM – European Institute for Advanced Studies in Management	Belgium	member
EIBAĘ – The European Business Academy	Belgium	member
Electrochemical Society	USA	
EMAC – The European Marketing Academy		member
EPWS – European Platform of Women Scientists	Belgium	member
European Association for Language Testing and Assessment, Lancaster University	UK	
European Biometrics Forum	EU	member
European League of Institutes of the Arts – ELIA		member
European Quality Association for Recycling e.V. (EQAR)		
European Society for Artificial Organs		
European Society for Engineering and Medicine – ESEM		

Table 14.1: BUT membership in international associations, organizations, and societies

European Structural Integrity Society		
Europäische Vereinigung für Unfallanalyse und Unfallforschung e.V. – European Association for Accident Research and Analysis		
FIB – Fédération internationale du béton / International Federation for Structural Concrete		
Gesellschaft für Informatik	FRG	member
GBATA (Global Business and Technology Association)	USA	board member
Heat Transfer Education Committee ASME		
IABSE – International Association for Bridge and Structural Engineering		
IASS – International Association for Shell and Spatial Structures		
ICAS – International Council of the Aeronautical Science		
IEEE – Institute of Electrical and Electronics Engineers USA	member	
IFToMM – International Federation for the Promotion of Mechanism and Machine Science		
International Association for Cross-Cultural Psychology	USA	member
International Institute of Forecasters	USA	member
International Journal of General Systems	USA	editorial board member
International Journal of Applied Research in Business Administration and Economics	Australia	editorial board member
International Project Management Association		
Journal of Enterprise Resource Planning Studies	USA	editorial board member
Journal of Global Business and Technology	USA	editorial board member
International board for Summer Conferences on Topology and Applications		
International union for vacuum sciences, technologies, and applications (IUVSTA)		
PRIME Networking	Belgium	founding member
Rehva – Federation of European Heating and Air-conditioning Association		
SIETAR UK – Society for Intercultural Training, Education and Research United Kingdom	UK	member
Society of Computational Economic	USA	member
Society for Materials Research	USA	
The International Society of Difference Equations	USA	member
The Society for the Psychological Study of Social Issues	USA	member
Transformation in Business and Economics	Latvia	editorial board member
UIC – Union Internationale des Chemins de Fer / International Union of Railways		
UNESCO/UIA – Validation Committee for Architectural Education		
WTA – International Wissenschaftlich-Technische Arbeitsgemeinschaft für Bauwerkserhaltung und Denkmalpflege		

b) BUT membership of professional associations, organisations, and societies

Table 14.2: BUT membership of professional associations, organisations, and societies

Professional organisation	Stát	status
ACM	USA	member
Association of University Libraries	CR	executive committee member
AMSAT-DL		
AMSE		
AS-International		
Association of Moravia Designers in Union of Artists of CR		
Association of mechanical engineers		
Association of forensic engineers of the Czech Republic		
Centre for research of information systems, specialised sections of Czech Society for System Integration	CR	předseda
CESNET z.s.p.o.	CR	member, supervising board chairman
Cisco Networking Academy	USA	CCNA a CCNP instructor
CIRED		
Czech Concrete Society	CR	member
Czech Physical Society	CR	member
Czech Logistic Association	CR	
Czech Marketing Association	CR	member
Czech Foundry Society	CR	FBM collective membership
Czech Chemical Society	CR	
Czech Society for Quality	CR	member
Czech Society for Quality	CR	member, QA certification(Quality Auditor) and QM (Quality Manager)
Czech Society for Cybernetics and Informatics	CR	founder of specialised group for creation and innovations, chairperson
Czech Society for mechanics	CR	
Czech Society of environmental technology	CR	
Czech Welding Society	CR	
Czech Vacuum Society	CR	
Czech Society for New Materials and Technologies	CR	
Czech-Moravian Psychological Society	CR	
Czech Normalisation Institute	CR	member
Czech Chamber of Authorised Engineers and Technicians Active in Building	CR	member
Czech Society for Non-Destructive Testing	CR	member
Czech and Slovak Society for Soil Mechanics and Geotechnical Engineering	CR	
ČNDT – Česká společnost pro nedestruktivní testování	CR	
Czech and Slovak Society for Soil Mechanics and Geotechnical Engineering	CR/SR	executive committee member, member
Czech Union for Civil Engineers	CR	
Czech Union of Scientific and Technological Societies	CR	

Table 14.2: BUT membership of professional associations, organisations, and societies

DeviceNet Organization		
DILIA	CR	collective member
EMAC – The European Marketing Academy	Belgium	member
ESA – European Space Agency		
ETAP Network – European Taxation and Accounting in Practice	France	founding member
EUNIS-CZ z.s.p.o.	CR	committee member
European Biometrics Forum	EU	member
Gesellschaft für Informatik	Germany	member
ICOM – The International Council of Museums		
IEEE (Institute of Electrical and Electronics Engineers)	USA	member
IEEE (Institute of Electrical and Electronics Engineers)	CR	IT manager of Czech-Slovak section
IFAC		
IGeLU - The International Group of Ex Libris Users	international	member
IMAPS Czech and Slovak chapter		
International Association for Cross-cultural Psychology	Germany	member
International Society of Electrochemistry - ISE		
International Solar Energy Society – ISES		
International Union of Radio Science		
Engineering academy of the Czech Republic		
Union of Czech Mathematicians and Physicists		
LonWorks Association		
Moravian Association of Female Entrepreneurs and Managers	CR	chairperson of honour
National Association of AKTOP Experts and Institutions in Knowledge and Technology Transfer		
P-Net		
Working Group for the Preparation of the ISO 26 000 International Standard	CR	member
SKIP	CR	member
SPIE Europe – International Society for Optics and Photonics		
Society for Project Management	CR	X
Society for Radioelectronic Engineering		
SUAleph	CR and SR	chairman
Union of Czech Booksellers and Editors	CR	member
Technical Commission of the International Normalisation Organisation		
Technological Platform of Energy Security		
Association of Accountants and Tax Advisers	CR	board member
Society for Ethics in Economy	CR	board member
Society for Project Management	CR	member
Association for Rehabilitation of Concrete Structures	CR	member
Society for Environmental Technology	CR	člen
Union of Czech Booksellers and Editors	CR	člen

c) BUT's national and international awards in 2012

From the European Commission, Brno University of Technology received ECTS Label a DS Label prestigious certificates for 2009–2013 in appreciation of its quality as an institution of higher education. BUT is repeatedly included in QS University Rankings.

d) BUT evaluation by a team of international experts

After a follow-up visit of EUA in 2011, some of EUA's recommendations continue to be implemented concerning the university's competitiveness. Unfortunately, some of the recommendations cannot be adopted as the Czech higher-education model has a much decentralised system of management, decision-making, and authorities having a negative impact on efficient university management.

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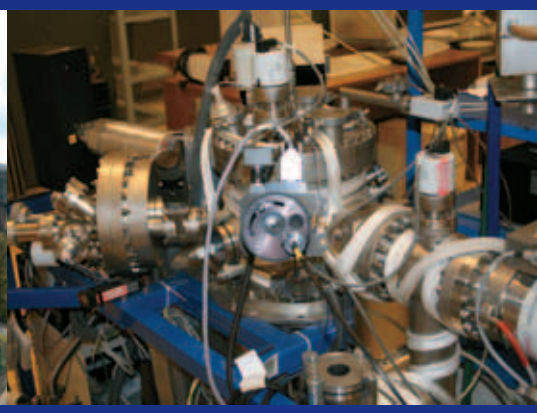

BUT DEVELOPMENT

a) BUT involvement in MEYS centralized development projects

Table 15.1: University involvement in MEYS centralized development projects in 2012

Programme	No. of projects approved	Funding received in thousand CZK	
		Capital	Ordinary
Support for university cooperation	9	2000	3496
Support for cooperation between domestic and foreign universities			
Support for openness of universities			
Equal opportunities for Prague-based universities			
Total			

b) BUT institutional development plan, its evaluation and achievement of goals in accordance with the 2012 Declaration of Development Programme for Universities (Table 15.2)

Table 15.2: University institutional development plan for 2012

BUT	Funding received in thousand CZK		Fulfilment of the set objectives/indicators	
	Capital	Ordinary	Initial status	End status
Institutional development plan				
Finishing and putting into operation of BUT integrated quality internal management		6988	zero	Successful ČSN EN ISO 9001:2009 certification at the rectorate and other constituent parts except Accommodation and Catering Services
Implementing at BUT the EUA recommendations in line with the preparations of the reform of Czech universities		750	zero	Areas were selected in which EUA recommendations were implemented: risk analysis (mostly for BUT projects), increased responsibility of faculty and constituent-part officials for fulfilling BUT strategic objectives, changes in university management system, establishment of office for strategy
Support for BUT publishing excellence		16300	200 impacted publications	325 impacted publications
Support for intellectual property rights protection at BUT		1800	45 employee inventions registered	94 employee inventions registered
Support for first-year students		3000	zero	
Support for talented students		1250	70 students received support	217 students received support
Support for External Relations Office		1000	550 employers addressed, 5,500 students taking part in a survey	809 employers addressed, 5,000 students taking part in a survey
Extending the activities of the Centre of Support for Projects for the academic community		1600	75 projects submitted	133 projects submitted
Support for activities of the Lifelong Learning Institute for the academic community		2400	750 members of BUT staff completing LLI courses	810 members of BUT staff completing LLI courses

Table 15.2: University institutional development plan for 2012

Support for activities for establishing a new faculty		1000	zero	task force established to design transition of a university institute to a faculty in current conditions, balance sheet worked out not guaranteeing economic self-sufficiency given the current student numbers and courses
BUT participation in QUESTE-SI project		739	zero	6 certificates for BU
Support for university internal inspection system		1250	zero	• new basic internal reform designed concerning an internal audit system (IAS) – draft of a rector directive • amendment made to rector's directive, 62/2004, on financial audit at BUT • based on general in-house rules, the IAS procedures were modified for RDI projects to be integrated on a continual basis into internal standards issued to projects depending on the particular requirements of project-targeted funding
Support for BUT marketing and presentation at home and abroad		2750	participation in 2 domestic and 2 international fairs	participation in 2 domestic and 5 international fairs
Support for joint master degree programmes at BUT		2500	0 students receiving support	22 students receiving support
BUT cooperation with elementary, secondary, and vocational schools		1000	3 competitions	6 competitions
Support for BUT international cooperation		4050	20 bilateral agreements, 30 partial and master agreements	21 bilateral agreements, projects implemented within 30 master agreements with mobility for 33 students and teachers
Support for BUT teacher mobility		2100	5 incoming/outgoing teachers	45 incoming/outgoing teachers
Support for BUT student mobility		4711	380 studentmonths	400 studentmonths
Support for handicapped BUT study applicants		1000	600 students using LLI services	3869 students using LLI services
Support for U3A at BUT		750	1950 students completed courses	2088 students completed courses
Establishing Office for Strategy at BUT		1000	zero	office established
Development of study computing network and main data centre	2000	2700	student card produced and delivered in 10 working days, 40 processor cores, 14,000 documents in electronic form, 12,000 IPv6 devices connected to BUT student, rectorate, and backbone networks	student card produced and delivered in 4 to 8 working days, 3,000 processor cores, 95,708 documents in electronic form, 5,500 IPv6 devices connected to BUT student, rectorate, and backbone networks
Total	2000	60638		

c) BUT involvement in University Development Fund (Table 15.3)

Table 15.3: BUT involvement in University Development Fund in 2012

BUT		Funding received in thousand CZK	
Thematic area	Number of projects approved	Capital	Ordinary
A	17	25908	0
B	0	0	0
C	0	0	0
E	0	0	0
F	58	0	12795
G	75	0	11170
Total	150	25908	23965

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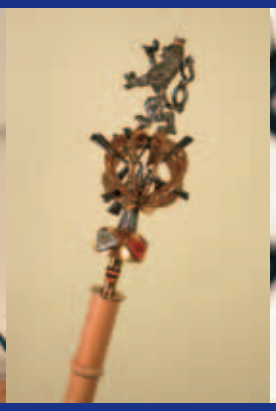

BUT ACADEMIC SENATE ACTIVITIES

In 2012, BUT Academic Senate (BUT AS) convened in nine regular and one special meetings. The topics discussed in 2012 included the standard areas of legislation, economics, teaching, and creative activities. Concerning legislation, BUT AS held a number of debates on the approval of changes in the internal rules of the university, its faculties and university institutes and on a number of documents related to the activities of university institutes. As every year, the relevant documents included Rules for the Distribution of Contributions and Subsidies at BUT in 2012. In compliance with BUT's long-term strategy, BUT AS gave opinions on thirteen property issues mostly concerning the purchase and sale of real estate, their gratuitous acquisition and related easements. Also in 2012, BUT AS discussed and approved BUT 2011 annual report and a 2013 update of the BUT Long-Term Plan. All topics were analyzed as usual on permanent BUT AS working committees, whose activities fully support the decisions made by BUT AS. As before, the BUT AS activity was given support by the BUT AS Office.

Legislation committee in 2012 convened five times from January to September, discussing in detail an amendment to BUT internal rules, faculty internal rules and legal rules at university institutes, issuing recommendations to be approved by BUT AS. Concerning activities at university institutes, the LC discussed in detail a request for BUT AS to give its opinion on the proposal of procedure to be used to implement changes in the organisational status of academics at BUT constituent parts.

Economic committee in 2012 convened twenty times. Due to the continuing austerity measures bringing about budget cuts at all universities, EC sought the best and most economical solution possible, arriving at it based on compromises achieved. Like every year, EC discussed and recommended for approval by BUT AS rules for setting up BUT's 2012 budget and, subsequently, BUT 2012 budget and 2011 annual report. Next, it approved and recommended for approval by BUT AS issues concerning property rights.

Pedagogic committee convened seven times in 2012; discussing mostly the ways of measuring the teaching load, cross-faculty courses, preparation and organization of a competition for the best BUT teacher. Other activities were directed towards cooperation with the BUT AS legislation committee on discussing BUT internal teaching related rules. Close cooperation existed with the BUT AS Student Chamber.

Committee for creative activity in 2012 convened eight times; discussed were mostly problems in submitting results to RIV, the TOP evaluation, particularly concerning products. In late 2012, together with the EC members, intensive debates were held between the committee and the BUT vice-rector for creative development concerning the research funding in 2012, particularly the position of cross-faculty projects. The debates resulted in cross-faculty projects being governed by legislation rules for receiving funding for specific research.
In a special meeting held at a hotel in Lednice in June 2012, the following issues were discussed:

Economics: Annual Report, analytic aspect of the relationship to the budget; HR and payroll analysis for 2011; outlook, rules, budget and data from MEYS and R&D Council 2013; continuing discussion on the reduced limit of subsidized students admitted.
Creative activities: issues of technology transfer at BUT and Technology Transfer Department; specific research and amendment to the specific research directive; problems of the Apollo information system in terms of the R&D methodology; Institutional development – data for points.
Economics along with creative activities: VKM indicators; continuing discussion on projects and their funding.
Teaching: TOP 10 academics; problems of teaching load; accreditation.
Teaching: problems of CEITEC academic staff; limited student numbers.
Marketing at BUT.

Through its representatives on the University Board, the new political situation in CR was closely followed in view of discussions on the new university bill prepared by the Ministry of Education, Sports, Youth, and Sports. RNDr. Popela, BUT AS member, chairman of the UB working committee for strategy and development, took part in all discussions of a working committee nominated by MEYS on the new university bill. BUT AS chairman doc. Hanáček also participated in the meetings of the UB working group – chairmen of university academic senates, who gave opinions on the new university bill. UB delegates who are also members of BUT AS continually took part in the discussions on the above new university bill informed BUT AS on these discussions regularly. BUT AS representatives on UB informed BUT AS regularly on all events held by UB in which they participated.

Student Chamber of BUT AS was concerned with the evaluation of specific research at BUT. Together with the AS PC a draft was created of a Best BUT Teacher competition and problems were discussed of degree programme accreditation. Next, SC representatives met the QUESTE-SI quality evaluators. In 2012, the SC was also interested in the quality of services provided by the Accommodation and Catering Services, and through its representatives at the ACS supervising board, it made every effort to improve the quality of accommodation and meals. For the academic year 2012/2013, SC AS reissued a First-Year Student's Guide planning to improve on it further. Together with representative of other faculties' student chambers, CS representatives participated in a meeting with the coordinator of the City Council for cooperation with universities to improve the quality of stay at Brno universities of commuting students.

The most important documents discussed in BUT AS meetings held from January to December 2012:

Legislation issues:
- New organisational rules for Accommodation and Catering services – January
- New version of the CEITEC Statutes – February
- CEITEC request for BUT AS opinion on the proposal for procedure used to implement changes in the organisational status of academics at BUT constituent parts – January, February
- Amendment no. 1 to the Rules of Procedure of the FFA Artistic Board – March
- New BUT Scholarship Rules – March to May
- Directive of the director of Institute of Forensic Engineering on IFE admissions – June, September

Economic issues:
- Rules for distributing contributions, subsidies, and other funding for 2012 – January, February
- Amendment no. 1 to Rules for distributing contributions, subsidies, and other funding for 2012 – submitted in March, revoked – April
- BUT 2012 budget – April, May
- Request by FFA for 2 million CZK from the undistributed part of BUT 2012 budget – BUT AS special meeting, June
- Supplement no. 1 to BUT 2012 budget – September
- Issues of Department of Technology Transfer and Centre of Computing and Information Services – release of blocked funding from the approved BUT 2012 budget – September
- Supplement no. 2 to the BUT 2012 budget – October
- Discussing Rules of Distribution of Contributions, Subsidies, and other Funding for 2013 – November, December

Creation issues:
- Discussion of cross-faculty specific research projects – February
- Approval of CEITEC Scientific Board – February
- Student petition on specific research – April
- Meeting of Committee for creative activity and Economic Committee on 27th November 2012 and decisions adopted on the establishment of a new research journal and issues of specific research – November, December



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CONCLUSION

Despite the continuing economic stagnation and political instability negatively affecting the atmosphere in society, we can say with full responsibility that Brno University of Technology was heading in the right direction. The high standard of all the processes occurring at the university was maintained. Success was scored in many activities.

University officials made every effort to improve the strategic and operative management of the university to ensure balanced approach of the self-governing and other bodies, efficient communication, and cooperation in the entire academic community. Emphasis was placed on the development of human resources, especially in the lower age bracket, on the management of changes and risks, on building a good quality assurance and management system, on strengthening marketing processes, on enhancing performance and quality in all areas of university life – this all to improve the university's prestige and competitiveness.

BUT takes up a leading position in tertiary education and research while achieving excellent results in the commercial sphere, which is the result of painstaking attention given to cooperation with industries.

In order to recruit the best secondary-school graduates, under the motto, "the best study at BUT", BUT offered 500 scholarships for the best secondary students admitted to study at BUT. This is a targeted support for the effort to educate very good graduates that can find jobs at the centres built at BUT with the assistance of the EU structural funds and in the commercial sphere.

For a long time, BUT has been among the four Czech universities ending up in good positions of the prestigious QS World University Rankings.

BUT has won over 8 billion CZK from the EU structural funds, which brought it among the most successful Czech universities. This money will be spent on improving the research infrastructure focusing on materials technology and the building of Europe's top research teams. While in 2011, some of the regional centres had already been build such as NETME, in 2012 the construction of its pavilions continued. In June, the building was launched of a CEITEC BUT centre of excellence at the Pod Palackého vrchem campus. Also, Centre of Sensor, Information, and Communication Systems (SIX), and Materials Research Centre were put into operation and foundation stones were laid for the Advanced Building Materials, Structures and Technologies (AdMaS) centre at the BUT campus.

Traditionally, cooperation with industries was among BUT's strengths. Thanks to the Education for Competitiveness operational programme, very close links were established with South Moravian companies (about 170 agreements with companies of different sizes). Owing to the balanced 2012 budget and operative measures adopted on an as-needed basis, a surplus was achieved while maintaining average wage increase in all categories and meeting all operation costs. Despite a stagnation of the scale salary of BUT employees, there was an increase in the total payroll sum as compared with 2011 with the average salary annually increased by 10.54 percent.

Next, a co-financing was found of the projects receiving funding from the RDI operational programme as well as of pre-financing of the projects prepared within a new call of priority axis 4 of the operational programme.

In 2012, all major construction work planned was implemented in the required scope.

In 2012, standard activities took place in education. The number of admitted students was relatively stabilized without major drops on previous year. The problem with the date of secondary-school- leaving-exams still continues. Most of the students come to entrance exams without knowing the results of their school-leaving exam, which entails more clerical work. If such a student is successful in passing the entrance exam, he or she cannot be enrolled immediately – this can be done only after submission of a school-leaving-exam certificate.

Building and launching new research infrastructures financed from the RDI operational programme is one of the most important factors in creation. To achieve sustainability of such infrastructures, it will be necessary to raise funds both from the public and private resources – in this case, via contracted research. Regarding the public resources, the eight-year programme (2012–2019) of the TAČR Centre of Competence may be seen as an important component in this respect. BUT was very successful in the Centre of Competence programmes participating in nine of them.

In external relations, strengthening internationalization remains one of the BUT priorities focusing on establishing contacts at Asian universities to cooperate in research and recruit private students for courses taught in English. With its marketing strategy, BUT has long concentrated on secondary-school

applicants with the aim to encourage their interest in engineering fields of study. Attention is also paid to other target groups such as BUT students and graduates that provide an important feedback.

The BUT information system was enhanced in its R&D modules, creating a research motivation system, tools to process the results of nationwide school-leaving-exams, new user interface of all Apollo modules including the study part and change to a new visual style of the public part of the web portal. A new module was written to deal with the ISO 9000 processes and prepare the BUT Centre of Computing and Information Services for its certification.

As part of a VAVINET project of the RDI operational programme, the fibre optic network infrastructure was enhanced by inserting fibres into the existing routes strengthening the backbone elements, data rooms were reconstructed and a new generation of hardware and virtual servers was bought with a capacity of over 3000 cores, 9 000 GB RAM and 120 TB of very fast SSD-accelerated disk capacity. KolejNet provides 6,700 student connections including 5,000 at 1 Gbit/s.

For the library system, the year 2012 brought unified settings of the partial databases of libraries. Preparations also started of a new web environment based on the BUT Portal graphical look.

Over 2,800 students attended internet literacy e-learning courses in 2012. A new pilot course was launched on correct citations. Another support for correct citing is the launching of a new Citace PRO citation system.

In 2012, much effort was devoted to promote electronic information sources. A total of 17 training courses were held for students, doctoral students, and researchers attended by over 500 users. The number of records downloaded from all the information sources available exceeded 460 thousand. For several years, Brno University of Technology has been building a digital library. Apart from offering electronic versions of theses, the R&D results are made available in an open-access mode. In this connection, research workers as well as the editorial staffs of some BUT specialised journals are being offered archiving of their publications.

In 2012, VUTIUM Press published three new titles including volume two of Mathematics for Understanding and Practical Purpose and assigned 257 ISBN's. Eleven issues were published of the journal BUT News with an edition of 9,900 copies (a special double-format holiday issue is published). The journal concept was changed, a bimonthly returning to a monthly again, which is better suited to its mission. However, the number of pages per issue was reduced to 32 pages plus 4 cover pages. The edition per issue remains 900 copies. VUTIUM Press participated in five book exhibitions and fairs.

This annual report looks back at the closed year 2012. The academic management, the self-governing bodies, and the entire academic community are already at work on the challenges and projects of 2013, a year bringing economic and political conditions similar to those of its predecessor. Let us hope that, in this year, too, Brno University of Technology will maintain the high standards of the years past or even push them a little higher for the years to come.


Gameful
Gameful

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