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2007

ANNUAL REPORT

BRNO UNIVERSITY OF TECHNOLOGY

ANNUAL REPORT ON THE ACTIVITIES

OF BRNO UNIVERSITY OF TECHNOLOGY IN

2007

The Brno University of Technology 2007 Annual Report is submitted as required by Act no. 111/1998 Coll. on universities. It has been set up on the basis of the 2007 University Guidelines published by the Ministry of Education, Youth, and Sports. It presents a wider public with data and substantial outcomes of all the activities related to Brno University of Technology as part of the Czech and international educational and research space.

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1. INTRODUCTION

1. 1. Full name of the public higher-education institution, acronym used, address, names and addresses of all its faculties

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

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,
Údolní 244/53, 602 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

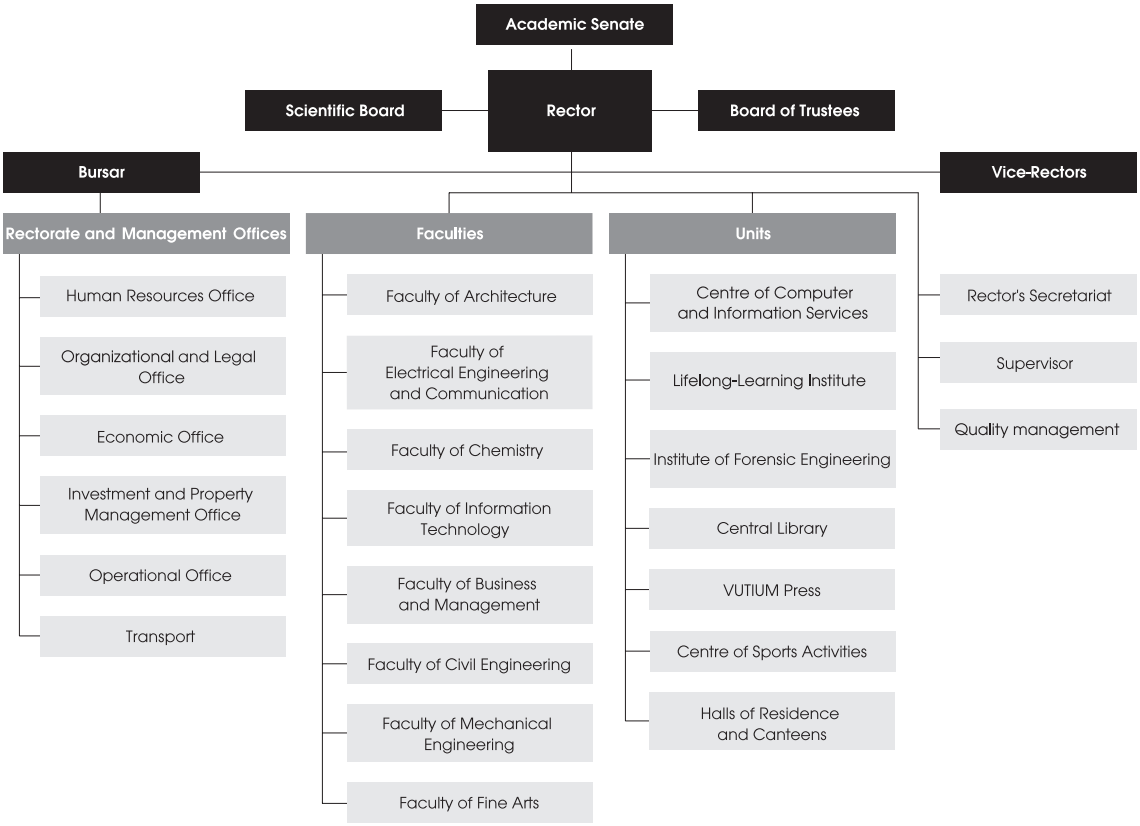
BUT Faculty of Business and Management, BUT FBM,
Kolejní 2906/4, 612 00 Brno
http://www.fbm.vutbr.cz

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

1. 2. BUT Organizational Chart



1. 3. BUT Scientific Board, Academic Senate and other BUT bodies

BUT SCIENTIFIC BOARD

Name	Position, workplace	Field of research
prof. RNDr. Vladimír Aubrecht, CSc.	vice-dean, BUT FEEC	physics of plasma
prof. Ing. Vladimír Báleš, DrSc.	rector, Slovak Technical University	chemical engineering
prof. Ing. Jan Bujňák, CSc.	rector, University of Žilina	steel and concrete structures
prof. RNDr. Milan Češka, CSc.	vide-dean, BUT FIT	information technology
Ing. Ivan Dobiáš, DrSc.	Czech Academy of Sciences, Institute of Thermomechanics	non-linear dynamic systems
Ing. Jaroslav Doležal, CSc.	Honeywell, s. r. o.	management automation
prof. Ing. Rostislav Drochytka, CSc.	vide-dean, BUT FCE	construction materials engineering
prof. RNDr. Miloslav Druckmüller, CSc.	BUT FME	applied mathematics
prof. Ing. Jaroslav Fiala, CSc.	vice-rector, BUT	materials sciences and engineering
Ing. Josef Hájek	Skanska DS, a. s.	design and transport sciences
prof. Ing. Jan M. Honzík, CSc.	vide-dean, BUT FIT	information technology
Ing. František Hrnčíř	ABB Lummus Global, s. r. o.	power and process plants
Mgr. Tomáš Hruda	Constantia Privatbank	project manager
prof. Ing. Tomáš Hruška, CSc.	dean, BUT FIT	information technology
prof. RNDr. Josef Jančář, CSc.	BUT FC	macromolecular chemistry
prof. Ing. Pavel Jura, CSc.	vice-rector, BUT	cybernetics, automation, and measurement
RNDr. Petr Kantor	AutoCont CZ, a. s., Brno	mathematical informatics and theoretical cybernetics
prof. Ing. Jiří Kazelle, CSc.	BUT FEEC	electrical and electronic technology
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
prof. RNDr. Miroslav Liška DrSc.	BUT FME	applied physics

doc. RNDr. Petr Lukáš, CSc.	director, Academy of Sciences, Institute of Materials Physics	materials physics
prof. Ing. Ladislav Musílek, CSc.	vice-rector, Czech Technical University in Prague	experimental physics
prof. Ing. arch. Alois Nový, CSc.	vice-rector, BUT	architecture
prof. Ing. Drahomír Novák, DrSc.	BUT FCE	structure mechanics, reliability of structures
prof. Ing. Ladislav Omelka, DrSc.	vide-dean, BUT FC	physical chemistry
prof. Ing. Emanuel Ondráček, CSc.	advisor to rector of BUT	mechanics of solids, computer mechanics
prof. Ing. Karel Rais, CSc., MBA	rector, BUT	business and management
prof. Ing. Petr Sáha, CSc.	rector, Tomas Bata University in Zlin	materials engineering
prof. PhDr. Jan Sedlák, CSc.	BUT FFA	architecture
prof. RNDr. Eduard Schmidt, CSc.	Masaryk University in Brno, Faculty of Science	solid state physics
prof. Ing. Vladimír Smejkal, CSc.	forensic engineer, Prague	business and management
prof. Ing. Jana Stávková, CSc.	dean, Faculty of Business and Economics, Mendel University of Agriculture and Forestry in Brno	statistics
prof. Ing. Petr Stehlík, CSc.	BUT FME	process engineering
prof. Ing. arch. Jilji Šindlar, CSc.	BUT FA	architecture
prof. Ing. arch. Vladimír Šlapeta, DrSc.	dean, BUT FA	architecture
prof. PhDr. Vladimír Špaček	Academy of Fine Arts, The University of Johannes Gutenberg, Mainz, D	photography
prof. RNDr. Ing. Petr Štěpánek, CSc.	dean, BUT FCE	concrete structures
prof. Ing. Petr Vavřín, DrSc.	BUT FEEC	cybernetics, automation, and measurement
prof. Ing. Radimír Vrba, CSc.	dean, BUT FEEC	electrical and electronic technology
prof. RNDr. Ing. Jan Vrbka, DrSc.	BUT FME	mechanics of solids

BUT MANAGERIAL BOARD

until 1st September, 2007	from 1st September, 2007
Ing. Vladimír Jeřábek, MBA – chairperson	Ing. Jiří Bělohlav
Ing. Stanislav Juránek	Valentin Girstl
Ing. Petr Karas, CSc.	Ing. Miroslav Hošek
PhDr. Martin Profant	RNDr. Barbora Javorová
Ing. Helena Šebková, CSc.	Ing. Vladimír Jeřábek, MBA
Ing. Jiří Škrla	Ing. Jiří Škrla
doc. Ing. Jiří Volf, CSc.	Ing. Michal Štefl
Ing. Jiří Bělohlav	Roman Onderka – chairperson
Valentin Girstl	Ing. Pavel Suchánek
Ing. Miroslav Hošek	RNDr. Věra Šťastná
Ing. Michal Štefl	PhDr. Miroslava Kopicová

BUT ACADEMIC SENATE

doc. RNDr. Josef Dalík, CSc.	chairperson
doc. Dr. Ing. Petr Hanáček	vice-chairperson and chairperson of the Chamber of Academics
Bc. Veronika Donthová	vice-chairperson and chairperson of the Student Chamber (until 16th October 2007)
Petr Donth	vice-chairperson and chairperson of the Chamber of Students (from 11th December 2007)

Chamber of Academics

doc. RNDr. Josef Dalík, CSc. (FCE)
doc. Ing. Eva Gescheidtová, CSc. (FEEC)
doc. Dr. Ing. Petr Hanáček (FIT)
Ing. Helena Hanušová, CSc. (FBM)
doc. ing. Jana Korytárová, Ph.D. (FCE)
RNDr. Vlasta Krupková, CSc. (FEEC)
doc. Ing. Jiří Kunovský, CSc. (FIT)
doc. MgA. Petr Kvíčala (FFA)
doc. Ing. Zdeňka Lhotáková, CSc. (FA)
Ing. arch. Ladislav Mohelník, Ph.D. (FA)

doc. Ing. Miloslav Pekař, CSc. (FC)
RNDr. Pavel Popela, Ph.D. (FME)
Ing. Jan Roupec, Ph.D. (FME)
PhDr. Jana Spoustová (FFA)
Ing. Stanislav Škapa, Ph.D. (FBM)
prof. RNDr. Milada Vávrová, CSc. (FC)

Chamber of Students
Ing. Daniela Čechová (FME)
Petr Donth (FCE)
Bc. Veronika Donthová (FBM)
Petr Dub, DiS. (FFA)
Ing. arch. Martin Kareš (FA)
Jakub Mahdal (FIT) – until 21st September 2007
Rastislav Piovarči (FIT) – from 30th October 2007
Petra Zedníčková (FC)
Ing. Petr Polách (FEEC)

BUT AS Working Commissions
LEGISLATION COMMISSION:
Petr Donth
Bc. Veronika Donthová (until 16th October 2007)
doc. Ing. Eva Gescheidtová, CSc.
doc. Ing. Jiří Kunovský, CSc. (from 24th April 2007)
doc. Ing. Zdeňka Lhotáková, CSc. – chairperson
doc. Ing. Miloslav Pekař, CSc.
Ing. Pavel Roupec, Ph.D.
prof. RNDr. Milada Vávrová, CSc.

ECONOMIC COMMISSION:
Bc. Veronika Donthová (until 16th October 2007)
doc. Dr. Ing. Petr Hanáček
Ing. Helena Hanušová, CSc.
doc. Ing. Jana Korytárová, Ph.D.
RNDr. Vlasta Krupková, CSc.
doc. MgA. Petr Kvíčala
Jakub Mahdal – until 21st September 2007
Ing. arch. Ladislav Mohelník, Ph.D.
RNDr. Pavel Popela, Ph.D. – chairperson
prof. RNDr. Milada Vávrová, CSc.

PEDAGOGIC COMMISSION:
Ing. Daniela Čechová
Ing. Helena Hanušová, CSc.
RNDr. Vlasta Krupková, CSc. – chairperson
doc. Ing. Jiří Kunovský, CSc.
PhDr. Jana Spoustová
Ing. Stanislav Škapa, Ph.D.
Petra Zedníčková – from 16th October 2007

BUT REPRESENTATIVES ON THE UNIVERSITY COUNCIL

doc. Ing. Eva Münsterová, CSc. – UC presidium member
prof. RNDr. Milada Vávrová, CSc. – UC congress member for BUT
Petr Dub, DiS. – UC Chamber of Students
Martin Hrubý – UC Chamber of Students – substitute

1. 4. BUT as represented in international and professional organizations

See Appendix 1, Table 1. 4., page 58.

1. 5. Women in university academic bodies

1. 5. Women at BUT

Fac.	Deans' Advisory Board number of women/number of members	The Academic Senate number of women/ number of members	Scientific Board number of women/ number of members
FA	3/15	0/13	2/12
FCE	0/10	16/50	3/45
FFA	3/12	4/11	4/23
FC	2/11	5/13	6/32
FEEC	3/12	7/19	2/29
FIT	0/14	0/13	0/27
FBM	3/15	9/18	2/24
FME	4/11	12/33	0/36

2. QUALITY AND EXCELLENCY OF ACADEMIC ACTIVITIES

2. 1. The Academic Senate

In 2007, the BUT Academic Senate (BUT AS) convened at 11 regular and one special sessions. The following were the main topics discussed in 2007: modifying the internal regulations at faculties to meet the requirements of the 2006 amendment of the University Act and the previously amended BUT internal regulations, monitoring and commenting on the preparation of a new law on tertiary education and the important business issues of the year plus efforts to help BUT be well prepared for the upcoming changes in the method of financing used by the Ministry of Education and for work on the EU operative programmes. The BUT AS activities were fully supported by the AS secretariat in 2007.

Most of the BUT AS work was carried out by its permanent working committees where all issues were analysed in detail. The work done in the committees is decisive for the BUT AS competency.

During its 15 sessions and several short meetings, the BUT AS Legislation Committee (LC) concentrated mostly on the above-mentioned amendments of the faculty internal regulations of which 12 were successfully submitted for approval by the BUT AS. In doing so, the new methodology of discussing the faculty internal regulations was used. Other important topics discussed by the LC included the amendment of the BUT Constitution, BUT Labour Code and an amendment to the Rector's Office Organisational Chart that put the finishing formal touch to the BUT Rector's Office reorganization. The LC put in a great deal of effort to prepare legislation for the creation of an independent Institute of Forensic Engineering at BUT. In view of the elections of a new BUT AS and new faculty academic senates to take place in 2008, the LC made every effort to unify the conditions of the elections at the faculties and those of the BUT AS elections. The LC placed emphasis on strict separation of the academic and student chamber elections at faculties. In 2007, the coming of Mrg. Pavlíková from the Rector's Office Administrative Section initiated by the BUT AS began to have a positive impact of the LC work. Not only did this cooperation provide the LC with valuable legal opinions, but it also helped improve communication of the BUT AS with the Rector's Office Administrative Section.

The BUT AS Economic Committee (EC) was traditionally a great help for the BUT management. In 2007, the EC continued its active approach of the previous years and, with all its members present, conscientiously prepared documents and opinions for the BUT AS sessions. At its 21 meetings, the Committee passed a number of resolutions, of which a majority had been fulfilled. The permanent resolutions were formulated as exceeding a period of one year. All the EC members continued their work in the rector's advisory and working groups passing on suggestions from the BUT academic community. The EC meetings were regularly attended by BUT bursar Ing. Kotek.

The EC devoted most of its attention to discussing in detail the BUT 2006 Annual Management Report, the 2007 Budget Rules and to setting up and approving the BUT 2007 Budget along with the related 2008 rules. Success was marked in effectively responding to the changes in the financial flows from the Ministry of Education and to the impacts of the current restructuring of the

Rector's Office. In cooperation with the BUT Board of Trustees, the preparation was trigerred of the budgetary funding and suitable land for the future EU programmes' competitions. What has long been a serious problem of the BUT budget inhibiting the development of human resources is the necessity to exchange the investment financing for non-investment one every year. In cooperation with the BUT AS and the BUT management, success was achieved in setting a trend of annual reductions in the amounts to be swapped, which, in comparison with other universities, proves BUT's responsible and professional approach. As agreed with the bursar, more inspections were put in place of the construction costs, and, in the presence of an EC member, analyses of the preparation of construction work were improved. The EC also initiated analyses to be carried out of the potential increase in the wage funds and payment scales.

Major activities of the BUT AS Pedagogic Committee (PC) in 2007 centred around the procurement of the underlying documents necessary for teaching-related proposals: an enquiry was prepared to appraise the methods used at faculties to check on the students' progress, information was collected on the amount and methods of funding inter-faculty courses, and preparation continued of a methodology to be used to ascertain the workloads of teachers at different BUT faculties.

Next in 2007, BUT AS discussed and approved an Amendment to the BUT 2008 Mission Statement, repeatedly provided its opinions on BUT's intention to purchase land and also discussed proposals to set up BUT spin-off companies. On a continual basis, BUT AS members were interested in the preparation of a White Book of Tertiary Education, in developing a new methodology to evaluate research and development results in the Czech Republic, and in creating conditions for proposing and working on EU operative programmes as the outcomes of such activities will be crucial for BUT's position in the near future. BUT AS members openly and with sound reasoning passed on their findings in a number of committees including those of the Council of Higher Education Institutions and in discussions of chairpersons of the academic senates of Brno universities. A special session of the BUT AS was held at Tři Studně attended by the BUT management, representatives of the Council of Higher Education Institutions and the Government Council for Research and Development, which proved to be productive providing many opportunities for devoted opinion exchanges between the attendants on numerous topics of the reform. Among the outcomes of this session is the upcoming rectification of methodological errors in the calculations evaluating the research activities in the Czech Republic detected at the BUT AS. Emphasized should be the fact that the analysis of major changes in the methodology for evaluating research and development actively promoted by the BUT AS allowed BUT to respond to the development forecasts thus preventing catastrophic consequences of the changes in the methodology.

From was said above, it is clear that, by their pro-active approach to and concern for dealing with problems connected with the reform of tertiary education, members of the BUT AS provided a number of remarkable examples of the unique role played by the academic senates in the management of a university.

2. 2. Access to Education, Permeability, Lifelong Education

A total of 56 full-time and combined degree programmes with 290 fields of study were accredited at BUT in 2007. The degree programmes cover a wide spectrum of classical fields of engineering and science as well as interdisciplinary fields combining engineering with science or business. Also architectural and artistic degree programmes are accredited. Table 2. 2. provides an overview of the active programmes; Table 2. 2.a_1 lists the accredited degree programmes by faculties. Tables 2. 2.b and 2. 2.c present data on lifelong learning at BUT.

Table 2. 2.a Active accredited degree programmes

Programme Groups	Degree Programmes						
	Bachelor's		Master's		follow-up Master's		Doctoral
	FT	C	FT	C	FT	C	
Natural Sciences	0	0	0	0	0	0	2
Engineering	13	5	8	5	10	6	16
Economics	2	2	0	0	1	1	1
Artistic and Cultural Sciences	1	0	0	0	1	0	1
Total	**16**	**7**	**8**	**5**	**12**	**7**	**20**

Table 2. 2.a_1 Active accredited degree programmes by faculty

Faculty	Bachelor's	Master's	follow-up Master's	Doctoral	Total progr.
FA	1	1	0	1	3
FCE	4	1	2	3	10
FFA	1	1	0	1	3
FC	3	4	4	4	15
FEEC	2	1	1	2	6
FIT	1	1	0	1	3
FBM	2	1	0	1	4
FME	2	2	1	7	12
Total	**16**	**12**	**8**	**20**	**56**

Table 2. 2.b Numbers of university lifelong-learning courses

Programme Groups	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								
Engineering		18					35	53
Agriculture, Forestry, and Veterinary								
Health Care, Medicine, Pharmacy							5	5
Social Sciences and Services	13							13
Economics			1				1	2
Law, Public Administration	6	11						17
Pedagogy, Teaching, Social Care		2	1					3
Psychology Fields								
Artistic and Cultural Sciences							3	3
Total	**19**	**31**	**2**				**44**	**96**

Note: U3A – University of the third age.

Table 2. 2.c Student numbers of university lifelong-learning courses

Programme Groups	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								
Engineering		166					616	782
Agriculture, Forestry, and Veterinary								
Health Care, Medicine, Pharmacy							127	127
Social Sciences and Services	114							114
Economics							9	9
Law, Public Administration	65	241						306
Pedagogy, Teaching, Social Care		26	25					51

Psychology Fields								
Artistic and Cultural Sciences							344	344
Total	**179**	**433**	**25**				**1 096**	**1 733**

2. 3. Interest in study at BUT

Long term statistics show that the interest in studying at BUT is constantly growing. The number of applications submitted exceeded 18,500 in 2007. The percentage of the students actually enrolled out of the total of those admitted is growing. This means that, of all the applications submitted to different universities, the candidates are likely to choose the one submitted to our university. Table 2. 3. shows the interest of candidates in individual degree programme groups.

Table 2. 3. Candidates interested in study at BUT

Programme Groups	Numbers				
	Applications submitted	Applications registered	Candidates eligible	Candidates admitted	Candidates enrolled
Natural Sciences	16	16	16	16	16
Engineering	13 843	11 875	10 042	9 258	7 584
Economics	4 340	3 342	2 606	1 565	1 294
Artistic and Cultural Sciences	509	505	93	93	87
Total	**18 708**	**15 738**	**12 757**	**10 932**	**8 981**

2. 4. Students in accredited degree programmes

In recent years, there has been a moderate but steady increase in enrolled student numbers. Maintaining the excellence of the students admitted is the university's long-term policy. Table 2. 4. shows the student numbers on 31st October 2007 arranged by degree-programme groups and levels of tertiary education. It is mostly at the Faculty of Civil Engineering that students are still studying the long Master's degree programmes with most of them finishing their studies in the academic year 2007/2008. No more students are admitted to the long non-follow-up Master's programmes with their numbers dropping rapidly and the proportion of students enrolled to follow-up Master's programmes growing. Table 2. 4. 1. lists total student numbers including suspended studies by programme groups while in Table 2. 4. 2. these are grouped by programme types, in Table 2. 4. 3. by faculties and programme types, and in Table 2. 4. 4. by degree programmes. Table 2. 4. 5. lists international student numbers.

Table 2. 4. Student numbers in accredited programmes on 31st October 2007

Programme Groups	Students in the programme								Total students
	Bachelor's		Master's		follow-up Master's		Doctoral		
	FT	C	FT	C	FT	C	FT	C	
Natural Sciences	0	0	0	0	0	0	39	31	70
Engineering	11 485	1 196	1 619	122	2 620	238	833	1 120	19 366
Economics	1 352	53	0	0	713	473	40	82	2 754
Artistic and Cultural Sciences	151	0	0	0	103	0	9	0	289
Total	**12 988**	**1 249**	**1 619**	**122**	**3 436**	**711**	**921**	**1 233**	**22 479**

Table 2. 4. 1. Student numbers including suspended studies arranged by programme group

Programme Groups	master group code	Students in programmes				Total students
		Bc.	Mgr. nav.	Mgr.	Ph.D.	
Natural Sciences	14	12 681	1 741	2 858	1 953	19 366
Engineering	23 until 39	151	0	103	9	289
Economics	62	1 405	0	1 186	122	2 754
Artistic and Cultural Sciences	82	0	0	0	70	70
Total		**14 237**	**1 741**	**4 147**	**2 154**	**22 479**

Table 2. 4. 2. Student numbers arranged by programme type

Programme type		Study form		
		full-time	combined	Total
Bc.	Bachelor's	12 988	1 249	14 333
Ing./Mgr.	follow-up Master's	3 436	711	4 248
Ing./Mgr.	Master's	1 619	122	1 741
Ph.D.	Doctoral	921	1 233	2 157
Total		**18 964**	**3 315**	**22 479**

Table 2. 4. 3. Student numbers arranged by faculty and programme type

Faculty	Bachelor's	Master's	follow-up Master's	Doctoral	Total
FA	417	0	171	86	674
FCE	4 436	1 061	53	636	6 186
FFA	177	0	103	9	289
FC	626	144	145	163	1 078
FEEC	2 784	6	1 147	384	4 321
FIT	1 768	0	611	156	2 535
FBM	1 405	0	1 227	122	2 754
FME	2 720	530	791	601	4 642
Total	**14 333**	**1 741**	**4 248**	**2 157**	**22 479**

Table 2. 4. 4. Student numbers arranged by faculty and programme

Fac.	Progr. code	Title	Men	Women	FT	C	Total
FA	N3501	Architecture and Town-Planning	105	66	153	0	171
FA	B3501	Architecture and Town-Planning – Socrates/Erasmus	198	219	409	0	417
FA	P3501	Architecture and Town-Planning	47	39	37	49	86
FCE	P3607	Civil Engineering	392	152	181	363	544
FCE	B3503	Architecture of Building Structures	66	78	144	0	144
FCE	B3609	Building	138	42	180	0	180
FCE	N3646	Geodesy and Cartography	26	27	53	0	53
FCE	B3607	Civil Engineering	2 839	1 039	3 405	441	3 878
FCE	P3646	Geodesy and Cartography	12	5	10	7	17
FCE	P3917	Forensic Engineering	43	32	21	54	75
FCE	M3646	Geodesy and Cartography	42	31	73	0	73
FCE	M3607	Civil Engineering	722	266	877	111	988
FCE	B3646	Geodesy and Cartography	130	104	234	0	234
FFA	P8206	Fine Arts	1	8	9	0	9
FFA	B8206	Fine Arts	73	104	151	0	177
FFA	N8206	Fine Arts	47	56	103	0	103

FC	N2901	Chemistry and Food Technology	9	65	57	17	74
FC	M2901	Chemistry and Food Technology	12	38	44	6	50
FC	N2805	Environmental Chem. and Technol.	8	22	25	5	30
FC	B2825	Public Protection	50	30	80	0	80
FC	M2805	Environmental Chem. and Technol.	12	28	37	3	40
FC	N2806	Consumer Chemistry	5	14	18	1	19
FC	B2801	Chemistry and Chemical Technology	153	236	357	31	389
FC	N2820	Chemistry, technology, and material properties	13	9	19	3	22
FC	P1405	Macromolecular Chemistry	18	8	14	12	26
FC	M2808	Chemistr. and Technology of Materials	17	6	22	1	23
FC	P1404	Physical Chemistry	16	28	25	19	44
FC	B2901	Chemistry and Food Technology	23	134	140	17	157
FC	P2805	Environmental Chemistry and Technology	19	38	35	22	57
FC	P2820	Chemistry, technology, and material properties	23	13	19	17	36
FC	M2806	Consumer Chemistry	7	24	31	0	31
FEEC	B2643	Electrical Engineering, Electronics, Communic. and Control Technology	2 634	63	2 318	376	2 697
FEEC	P2643	Electrical Engineering, Electronics, Communic. and Control Technology	208	7	69	146	215
FEEC	P2613	Electrical Engin. and Communication	161	8	139	30	169
FEEC	M2612	Electrical Engineering and Informatics	5	1	6	0	6
FEEC	B3930	Bio-medicinal Technology and Bio-informatics	58	29	87	0	87
FEEC	N2643	Electrical Engineering, Electronics, Communic. and Control Technology	1 122	25	1 076	51	1 147
FIT	P2646	Computing Technol. and Informatics	146	10	98	55	156
FIT	N2646	Information Technology	598	13	606	0	611
FIT	B2646	Information Technology	1 706	62	1 742	0	1 768
FIT	M2612	Electrical Engineering and Informatics	0	0	0	0	0
FBM	N6208	Economics and Management	687	540	713	473	1 227
FBM	B6208	Economics and Management	318	416	692	42	734
FBM	P6208	Economics and Management	80	42	40	82	122

FBM	B6209	Systems Engineering and Informatics	571	100	660	11	671
FME	N3901	Applied Sciences in Engineering	127	35	162	0	162
FME	P3920	Metrology and Testing	32	17	13	36	49
FME	B3901	Applied Sciences in Engineering	202	60	262	0	262
FME	P2303	Manufacturing Technology	52	16	23	45	68
FME	P3901	Applied Sciences in Engineering	79	4	30	53	83
FME	P3917	Forensic Engineering	23	1	7	17	24
FME	P3913	Applied Natural Sciences	30	8	11	27	38
FME	M2301	Mechanical Engineering	480	50	529	1	530
FME	P3910	Physical and Material Engineering	76	9	37	48	85
FME	P2302	Machinery and Equipment	234	20	103	151	254
FME	B2341	Mechanical Engineering	2 330	128	2 127	331	2 458
FME	N2301	Mechanical Engineering	581	48	451	161	629
Total			**17 806**	**4 673**	**18 964**	**3 315**	**22 479**

Table 2. 4. 5. International-student numbers

Programme type		**international students**
Bc.	Bachelor's	1 294
Ing./Mgr.	follow-up Master's	400
Ing./Mgr.	Master's	35
Ph.D.	Doctoral	124
Total		**1 853**

2. 5. BUT graduates, jobs offered to graduates – degree programmes evaluated in view of this offer, BUT cooperation with its graduates

Every year, the BUT graduate number is higher. With the last long Master's degree programme students finishing gradually their studies, the number of students graduating from Bachelor's and Follow-Up Master's programmes is increasing. The numbers arranged by programmes and degrees of tertiary education are shown in Table 2. 5., Table 2. 5. 1. lists 2007 graduates by faculty and programme. Table 2. 5. 2. lists details of doctoral graduates including their supervisors and the titles of their theses. Table 2. 5. 2. can be found in Appendix 2 on page 62.

Table 2. 5. Graduates from accredited degree programmes from 1st January 2007 to 31st December 2007

Degree programme groups	Graduates from degree programme								Total graduates
	Bachelor's		Master's		follow-up Master's		Doctoral		
	FT	C	FT	C	FT	C	FT	C	
Natural Sciences	0	0	0	0	0	0	1	4	5
Engineering	1 479	87	1 220	32	548	40	24	86	3 516
Economics	303	48	0	0	220	103	0	6	680
Artistic and Cultural Sciences	37	0	0	0	50	0	0	0	87
Total	**1 819**	**135**	**1 220**	**32**	**818**	**143**	**25**	**96**	**4 288**

Table 2. 5. 1. Graduates from accredited degree programmes from 1st January 2007 to 31st December 2007 arranged by faculty and programme

Fac.	Programme	Men	Women	including international students	Total
FA	B3501	34	27	4	61
FA	P3501	2	2	0	4
FA	N3501	34	33	3	67
FCE	P3607	16	3	0	19
FCE	B3646	22	17	5	39
FCE	M3646	29	18	1	47
FCE	B3609	4	1	0	5
FCE	M3607	413	119	13	532
FCE	P3646	0	1	0	1
FFA	N8206	24	26	4	50
FFA	B8206	18	19	2	37
FC	M2808	16	8	2	24
FC	N2820	2	3	0	5
FC	P1404	1	1	0	2
FC	M2805	13	15	1	28
FC	P2805	0	3	0	3
FC	P1405	2	1	0	3

FC	B2901	6	39	3	45
FC	B2801	21	37	2	58
FC	N2901	0	6	0	6
FC	P2820	3	0	0	3
FC	M2901	5	29	0	34
FC	N2806	1	0	0	1
FC	N2805	0	1	0	1
FC	M2806	3	7	1	10
FEEC	N2612	3	0	0	3
FEEC	N2643	283	9	12	292
FEEC	M2612	111	3	7	114
FEEC	B2643	605	13	74	618
FEEC	P2643	35	2	2	37
FIT	N2646	96	4	12	100
FIT	B2646	263	4	51	267
FIT	N2612	1	0	0	1
FIT	M2612	80	5	6	85
FIT	P2646	8	0	0	8
FBM	P6208	4	2	0	6
FBM	B6209	88	47	9	135
FBM	N6208	155	168	7	323
FBM	B6208	80	136	9	216
FME	N3901	22	2	4	24
FME	P3910	6	3	0	9
FME	P3901	8	0	0	8
FME	M2301	352	25	17	377
FME	P2302	11	0	0	11
FME	B2341	375	29	10	404
FME	P2303	4	4	0	8
FME	B3901	53	16	6	69
FME	P3913	0	2	0	2
FME	N2301	80	6	2	86
Total		**3 392**	**896**	**269**	**4 288**

Jobs for graduates

Traditionally, an enquiry was held at BUT late in 2007 on jobs offered to graduates. The enquiry feedback showed a marked turn in favour of the BUT graduates as compared with the results of the last enquiry held in the years 2003 – 2005. The percentage of unemployed graduates had dropped to an absolute minimum of one per cent with the time-to-first-job being significantly reduced, too. More than one half of the graduates find their jobs even before the graduation. Also half of the students can start working on qualified jobs while still studying, which is the same finding as in the last two enquiries.

An overwhelming majority of 83% of the graduates are employed. The average unemployment duration of the enquiry respondents was about 1.3 months at the time of the enquiry. This figure is down on the last enquiry, which was 2.4 months. There is every indication that the BUT graduates are in great demand in the labour market. The most frequent answer to the unemployment duration question is zero: a typical BUT graduate swiftly embarks the labour market to stay.

The Czech private firms are the typical employer offering jobs to almost half of the graduates with foreign and international companies being in the second place. A relatively high percentage of graduates find their jobs in the R&D sector. Two thirds of the employed respondents take up a position corresponding to their university qualification in the field of their study. A total of 86.7% of the graduates are satisfied with their current jobs.

The enquiry outcomes clearly show that the graduates point out various deficiencies in some of the fields of their professional education. They see as the most questionable their capacity to raise funding – this is what almost sixty percent of students think to be poorly prepared for. Next, more than half of the students lack managerial skills, with only a little less than fifty percent being equipped with sufficient practical and language skills.

Being familiar with the software used in jobs, on the other hand, is generally the graduates' least concern and the same is true for sufficient theoretical background in their industry.

This is an outspoken improvement as compared with the previous enquiry – then, the qualification deficiency was most blatant in language skills, which now occupy the fourth place. As the language skill requirements by the employers seem to be more, rather than less, strict, these results are likely to indicate an improvement in language teaching at BUT.

BUT cooperating with its graduates

BUT cooperates with it its graduates in many different ways. Some graduates maintain contacts with the faculty departments (FME, FIT, FBM, FA, FFA). They contact experts to consult with them. In doing so they also help make contacts with other businesses and research institutes. Some former student classes meet with their teachers and the faculty officials, who provide them with the latest information on the current events at and development of the faculty.

The Faculty of Chemistry has already been working with its graduates for several years. As a result, a database of contacts has been set up to be used for circulating enquiries, invitations to faculty events, etc. Through a questionnaire published at the faculty's website, information is collected on new graduates, their views on the teaching content and its quality.

At the Faculty of Electrical Engineering and Communication, cooperation with the graduates concentrates on specialized issues.

Cooperation with T-Mobile CZ and T-Mobile International (Research and Trials Group) may be taken as an example – with work on research projects (measuring the GSM network of all the mobile carriers for the entire Czech Republic was among the largest), assignments of Master's and Bachelor's degree projects, on-the-job training, sponsoring of the Radioelektronika 2007 international conference and of the Student FEICT 2007 (and 2006) contest.

Cooperation with AMI Semiconductor is another example – work on research projects (analyses of integrated-circuit designs), assignments of Master's and Bachelor's degree projects, on-the-job training, sponsoring of the Radioelektronika 2007 international conference and of the Student FEICT 2007 (and 2005, 2006) contest.

At the Faculty of Civil Engineering, cooperation takes place on an individual basis with SAB-FAST, a FC-Graduate Club, established. In addition, a number of graduates are directly engaged in cooperation with institutes (external expert teachers, assigning Master's degree projects and Ph.D. theses, participating in Ph.D. thesis reviews). There is still further cooperation in research and complementary activities with a number of graduates being involved in research activities cooperating on generating the problems to be solved in final university projects and on their assessment.

2. 6. Dropouts at BUT, measures leading to reducing the number of dropouts

The relatively high number of dropouts, particularly during the first years of Bachelor`s degree programmes, is a common problem of technical universities. Even in this regard, a gradual improvement can be observed – mostly due to the transition to a structured study system. Table 2. 6. lists students that dropped out in 2007.

Table 2. 6. Dropouts from accredited degree programmes from 1st January 2007 to 31st December 2007

Programme Groups	Dropouts in the programme								Total
	Bachelor's		Master's		follow-up Master's		Doctoral		
	FT	C	FT	C	FT	C	FT	C	
Natural Sciences	0	0	0	0	0	0	6	2	8
Engineering	2 113	442	107	15	147	63	58	105	3 051
Economics	98	2	0	0	60	108	1	3	272
Artistic and Cultural Sciences	5	0	0	0	3	0	0	0	8
Total	**2 216**	**444**	**107**	**15**	**210**	**171**	**65**	**110**	**3 339**

2. 7. Credit system, diploma supplements

BUT makes a full use of the European Credit Transfer and Accumulation System (ECTS) and all its instruments in all the Bachelor`s and Master`s degree programmes. A module of the information system recommended by the EU has been installed. At the earliest possible date, an application will be filed for ECTS Label certification. All the graduates from Bachelor's and Master's degree programmes are given a free English-Czech diploma supplement with the recommended form and content. In 2006, Brno University of Technology obtained a Diploma Supplement Label certificate.

2. 8. Specialized cooperation between BUT and the region, links between theory and practice and cooperation with customers

In 2007, the Technology Transfer Unit focused on building a comprehensive system of commercialising the R&D results, which includes searching for commercialised results achieved at BUT, intellectual property protection, establishing technology-oriented companies (including spin-off ones), support for implementing ideas until their commercial use, funding, placing a company in an incubator, etc. as well as consulting in specialized areas. A partial outcome included the "Conditions of Commercialising the BUT Intellectual Property – Establishing Spin-off Companies" and "Intellectual Property Rights Application and Protection" rector's guidelines coming into force in 2007. A team of major industry experts was established at the BUT Technology Transfer Department as part of a BUT development programme. These work in their departments being continually trained on issues of commercialising new applicable knowledge. As part of the EUPRO Ministry of Education project, a South Moravia regional contact organization is operating at the Technology Transfer Department being mostly concerned with consulting and support for the EU 7th Framework projects of the regional institutions including small and medium enterprises. Education for BUT staff and those interested from industries and other institutions on technology transfer is among the department's permanent activities.

2. 9. Qualification and age structure of academic staff

Table 2. 9a Age structure of BUT staff

Age	Academic staff										Research staff	
	professors		sen. lecturers		sen. assistants		assistans		instructors			
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
up to 29 years	-	-	-	-	60	6	136	31	-	-	6	2
30–39 years	1	-	27	1	193	33	73	28	1	1	19	6
40–49 years	13	1	50	6	94	39	24	13	-	-	4	-
50–59 years	45	3	89	10	131	59	4	1	-	-	5	-
60–69 years	64	4	102	11	68	18	3	2	-	-	11	1

70 years and more	24	-	21	2	3	-	1	-	-	-	6	-
Total	**147**	**8**	**289**	**30**	**549**	**155**	**243**	**75**	**1**	**1**	**51**	**9**

Table 2. 9b Academic staff numbers on 31st December 2007.

Staffing	Total	Professors	Sen. lecturers	others	DrSc.	CSc.	Dr., Ph.D., Th.D.
Academic staff workload	1 280	147	292	841	38	417	427
up to 30 %	55	15	12	28	7	39	21
up to 50 %	63	13	19	31	4	32	19
up to 70 %	36	10	10	16	4	27	17
up to 100 %	1 126	109	251	766	24	319	370

2. 10. Advancements of research, development, artistic and other creative activities at BUT and strengthening the links between such activities and education

The research and creative activities of BUT academic staff were on the rise in 2007. Also the percentage of doctoral students involved in such activities increased. The creative activity of the BUT academics cover a number of fields of science and engineering, economics, and art providing also a natural platform for the new interdisciplinary activities. The good interim rating of the research plans in 2007 along with a SWOT analysis of the creative activities at BUT, and a forecast of the development of industries in the region, Czech republic, and the EU, confirmed the strategic research areas included by BUT in its last year's priorities. A rather important goal was to establish closer ties with related industries. Last year, as in the preceding period, the research and creative activities of the BUT academic staff received funding from four main sources. The first source was institutional research funding for universities receiving subsidies mostly from the Science and Research Support programme of the Ministry of Education, Youth, and Sports of the Czech Republic. In 2007, there were 11 research plans, 9 research centres and 3 basic research centres at BUT as shown in Tables 2. 10. 1. and 2. 10. 2.

Table 2. 10. 1. BUT involvement in work on research plans

Name of research plan	Funding received in 2007 (CZK thousand)
Progressive building materials based on secondary raw materials and their influence on the service life of structures	16 224

Waste and biomass processing systems and their control in terms of environment protection and power balance	17 414
Synthetic-polymer- and biopolymer-based multifunctional homogeneous and heterogeneous materials	22 013
Electronic communication systems and technologies of new generations (ELKOM)	24 282
Inorganic nano-materials and nano-structures: creation, analysis, properties	20 749
New trends in microelectronic systems and nano-technologies	22 090
Simulation and modelling of mechatronic systems	18 721
Energy resources, accumulation, and optimal use in the sustainable development conditions	14 883
Progressive, reliable, and durable bearing structures	14 700
Research of information technology and its safety	26 700
Intelligent systems in automation	13 300
Total	**211 076**

Table 2. 10. 2. 1M Research Centres

Fac.	Centre Name	Solution provider	Owner
FME	Centre of Integrated Design of Progressive Building Structures	Píštěk Antonín, prof. Ing. CSc.	Czech Technical University in Prague
		Solution co=provider	
FCE	Centre of Integrated Design of Progressive Building Structures	Melcher Jindřich, prof. Ing. CSc.	Czech Technical University in Prague
FCE	Centre of Integrated Research of Inorganic Composites	Štěpánek Petr, prof. RNDr. Ing. CSc.	Research Institute of Building Materials
FME	Josef Božek Research Centre of Combustion Engines and Automobiles II	Píštěk Václav, doc. Ing. CSc.	Czech Technical University in Prague
FME	Ecological Centre of Applied Research of Non-Ferrous Metals	Podrábský Tomáš, prof. Ing. CSc.	VUK Panenské Břežany, s. r. o.
FME	Research Centre of Manufacturing Technology	Kolíbal Zdeněk, prof. Ing. CSc.	Czech Technical University in Prague
FME	Centre for Production Quality and Reliability	Karpíšek Zdeněk, doc. RNDr. CSc.	Czech Technical University in Prague

FEEC	Data, Algorithms, Decision-Making	Jan Jiří, prof. Ing. CSc.	Czech Academy of Sciences, Institute of Information Theory and Automation
FEEC	Centre of Applied Cybernetics	Vavřín Petr, prof. Ing. CSc.	Czech Technical University in Prague

LC Programme Centres of Basic Research

Fac.	Centre name	Solution provider	Owner
FME	Structures for Nanophotonics and Nanoelectronics	Šikola Tomáš, prof. RNDr. CSc.	BUT
FEEC	Centre for Quasioptical Systems and Tetrahertz Spectroscopy	Raida Zbyněk, prof. Ing. CSc.	Institute of Chemical Technology, Prague
FIT	Centre of Computer Graphics	Zemčík Pavel, doc. Dr.	Czech Technical University in Prague

BUT was the owner of two centres and participated in the programmes of another two ones. A major part of the institutional funding goes to specific research at universities as provided by the Act no. 130/2002 Coll. The second source was targeted research funding covering projects submitted within grant systems such as GA ČR and the grant agencies of the Czech Academy of Sciences and ministries, particularly the Ministry of Industry and Trade. Here, BUT has long been among the most successful universities with the proportion of its successfully submitted applications exceeding the national average. The third source of research funding was the participation in international projects supported by grants such a COST, EUREKA, INGO, CONTACT, 5th FP, and 6th FP. In view of research internationalisation, the participation in international projects is of key importance. Finally, applied research funded through contracts with domestic and foreign industrial enterprises also forms a major part of research activities.

The funding received for creative activities from the institutional sources in 2007 increased to 261 million CZK. Interim assessment was performed of those research plans that started on 1st January 2005. Based on the interim assessment, all the research plans at BUT started on 1st January 2005 were assigned to category A (according to the input decision on research plan funding, only two research plans were category A ones), which means that all the research plans receive 100 percent institutional funding support. The total amount of the institutional support for the research plans amounts to 13.4 million CZK.

The total funding from all four resources received at BUT for research and creative activities exceeded 663 million CZK, which is about 31 percent of the university budget. This means a 20 percent increase on 2006. Despite the growing tendency achieved, BUT should seek comparison with rival universities such as Czech Technical University in Prague and Masaryk University in Brno. In this respect, BUT achieved a higher growth rate. This was also reflected in higher subsidies of targeted research calculated for 2008 as compared with the 2007 subsidies (by 5 percent) with BUT thus marking one of the highest specific research subsidy increases among universities.

Table 2. 10. 3. lists the numbers of grant projects received at BUT and the total volume of funding from grant competitions supported by targeted resources.

Table 2. 10. 3. Grants, research projects, and other creative activities at BUT

Name of grant, research project, patent, etc.	Source	Thousands of CZK in funding
GA Standard Projects	B	88 065
GP Post-Doctoral Projects	B	14 000
GD Doctoral Projects	B	11 657
Eurocores	B	462
INE	B	127
Ministry of Education Research Plans	C	226 195
1K Initial R&D Research Support	C	2 429
1M Research Centres	C	80 725
LC Programme Centres of Basic Research	C	8 919
NPV II National Research Programme II	C	21 490
1E Information Society (National Research Programme TP2)	C	10 695
IA Grants of Distinctive Research Character Targeted at Current Research Done Mostly in the Czech Academy of Sciences	C	2 546
1Q Support for Targeted Research Projects (National Research programme)	C	1 949
KJ Junior and Research Projects	C	2 670
KA Nanotechnology for Society	C	3 489
KSN	C	1 362
FI-IM IMPULS	C	20 797
FT-TA TANDEM	C	34 356
1H-PK PROGRESS (National Research programme)	C	3 891
2A	C	4 257
1F Safe and Economical Transport (National Research programme)	C	1 939
CG	C	2 274
1G Use of Natural Resources	C	520
QH	C	448

1R Landscape of Future – 4 (National Research programme)	C	535
WB Research and Development Serving the Needs of the Region	C	355
Ministry of Culture	C	80
NBU – ST	C	1 087
MV VD	C	1 650
COST (OC)	C	5 303
EUPRO (OK)	C	500
EUREKA (OE)	C	2 611
INGO (LA)	C	527
KONTAKT (ME)	C	1 336
EU 5th and 6th Framework Programme (5FP, 6FP)	A	32 747
Marie Curie – as part of a research project	A	1 591
European Programme of Support for Coal and Steel Research (UIC)	A	0
Transatlantic Cooperation	A	87
ASO	A	265
AKTION – Research Project	AIP ČR	89
8 Bilateral International Cooperation projects	AIP ČR	136
Total		**594 161**

Table 2. 10. 4. BUT industrial property ownership portfolio (patents in force, etc.) on 31st December 2007

Industrial Ownership Category Protected under Special Regulations	Subject-matters in force	Patent applications published
Domestic Patent	3	2
Foreign Patent	0	0
US Patent	0	0
EPO Patent	0	0
Japanese Patent	0	0
PCT Application Published	0	1
Domestic Utility Model	16	0
Foreign Utility Model	0	0

Domestic Industrial Model	1	0
OHIM Registered Industrial Model	0	0
Domestic Trade Marks	17	0
OHIM Trade Marks	0	0

Compared with 2006, the number of national grants and research centres is up from 343 to 349, while the total funding volume has risen from 294 million CZK to 333 million CZK, which is a 17 percent increase. Also the funding of international projects has grown from 38.6 million CZK to 45 million CZK, that is, by about 13 percent. It should, however, be stressed that there are still great differences between faculties. These result from the actual sizes of faculties as well as from the substantial differences in the structure of funding in the average grant volumes and, above all, in the proportion of the researchers who are the owners of grant projects. In this regard, the best situation is at the faculties of mechanical engineering and electrical engineering with the most project owners. Contracts with national and international businesses brought a total of 69 million CZK to finance applied research. BUT shows a high percentage of funding won from departmental applied research grant agencies, in particular from the Ministry of Industry and Trade. This testifies to the growing efforts to apply the basic research outcomes in the industrial practice. The highest success rate, as in the previous years, has been reached with the Ministry of Industry and Trade and the Ministry of Transport and Communication. Here, the faculties of mechanical engineering, civil engineering, electrical engineering, and chemistry should be mentioned as achieving the best results.

Table 2. 10. 5. Senior lecturers (doc.) appointed in 2007

Faculty	Name	Field	Appointment Date
FCE	Motyčka Vít, Ing. CSc.	building structures	16. 7. 2007
FCE	Vořechovský Miroslav	theory and construction of buildings	16. 7. 2007
FME/ Czech Technical University in Prague	Granja Carlos, Ing. Ph.D.	applied physics	22. 10. 2007
FME	Hlinka Jiří, Ing. Ph.D.	construction and process engineering	4. 12. 2007
FME/UTB	Lapčíková Barbora, Mgr. Ph.D.	materials science and engineering	5. 6. 2007
FME	Pospíšil Jiří, Ing. Ph.D.	construction and process engineering	7. 3. 2007

FIT	Vojnar Tomáš, Ing. Ph.D.	computing technology and informatics	6. 6. 2007
FEEC	Blaha Petr, Ing. Ph.D.	technical cybernetics	18. 4. 2007
FEEC	Lattenberg Ivo, Ing. Ph.D.	electronics and communication technology	22. 11. 2007
FEEC	Mišurec Jiří, Ing. CSc.	electronics and communication technology	18. 4. 2007
FA	Kynčl Jakub, Ing. arch. Ph.D.	architecture	20. 3. 2007
FA	Zavřel Zdeněk, Ing. arch. Ir.	architecture	20. 3. 2007

Table 2. 10. 6. Professors appointed in 2007

Faculty	Name	Field	Appointment Date
FCE	Fridrichová Marcela, doc. Ing. CSc.	physical and building materials engineering	5. 11. 2007
FME/FC	Čech Vladimír, doc. RNDr. Ph.D.	applied physics	16. 4. 2007
FEEC	Bartušek Karel, doc. Ing. CSc.	theoretical electrical engineering	5. 11. 2007
FEEC	Dědková Jarmila, doc. Ing. CSc.	theoretical electrical engineering	5. 11. 2007
FEEC	Sigmund Milan, doc. Ing. CSc.	electronics and communication technology	5. 11. 2007
FEEC	Wilfert Otakar, doc. Ing. CSc.	electronics and communication technology	5. 11. 2007

Table 2. 10. 7. Doctor Honoris Causa awards

prof. Munecazu Tacano

professor at Meisei University in Tokyo, Japan
renowned expert in the physics of semiconductors

prof. Reimund Neugebauer

professor at the Faculty of Mechanical Engineering of TU Chemnitz, Fraunhofer Institut IWU Chemnitz, D
renowned expert in machine-tool and forming-machine design

prof. Jozef Vanneuville

professor at IMEC/Associated Laboratory KHBO, Belgium
renowned expert in microelectronics

Table 2. 10. 8. BUT First Degree (Gold) Medals awarded in 2007

prof. Ing. Petr Sáha, CSc.	
	for distinguished services in developing Tomas Bata University in Zlín and cooperating with BUT
prof. Ing. Jan Maximilián Honzík, CSc.	
	for distinguished services in developing BUT and the Faculty of Information Technology

2. 11. BUT infrastructure (material, technical and information background), access to information and information infrastructure development

Material background

As foreseen in the BUT 2006-2010 Mission Statement and its 2007 amendment and in the programme of property reproduction no. 233340 as approved by the Ministry of Education, Youth, and Sports, the following activities were carried out in 2007. The objective of every such activity was:

- to build new material infrastructures in order to provide state-of-the-art background for teaching, research and development making the activities carried out at BUT comparable with those carried out at leading domestic and international universities;
- to repair, reconstruct, and upgrade selected parts of the existing BUT infrastructure creating conditions for BUT to be competitive.

The following were the major activities carried out to enhance the material infrastructure:

- finishing the reconstruction and construction of the BUT FIT campus in Božetěchova Street;
- reconstructing the building at Rybkova 1 needed to increase the teaching capacity of the Faculty of Civil Engineering;
- finishing the locker room building adjoining a multi-purpose hall and athletic stadium;
- opening the construction of new laboratories of the Faculty of Chemistry as an addition to the existing faculty building;
- continuing the construction of fibre-optic computer networks;
- repairing and reconstructing the yard and cellar of the Faculty of Architecture;
- buying out land as foreseen in the BUT General Development Plan to be able to build new research laboratories as required by the EU operative plans;
- also the following preparatory work was done:
  - planning the cladding reconstruction of building A1 of the Faculty of Mechanical Engineering;
  - planning the construction of the BUT Central Archives;

- conducting a study of using the Curie Square (also known as Academic Square) for the final placement of the Faculty of Architecture, Faculty of Fine Arts, and the BUT Institute of Forensic Engineering;
- planning an orientation system of the Pod Palackého vrchem campus.

These activities are described in detail including the financial issues in the BUT 2007 Annual Management Report.

BUT Central Library

The BUT Central Library serves as a coordinating centre of all BUT libraries. It provides consulting services and issues methodological guidelines.

The Central Library manages the BUT Libraries Portal and the central librarian servers. The 2007 activities focused on the putting into operation of CL`s portal, which is used above all to enable internal communication of the library staff. In the first phase, the portal's primary objective will be to support the Aleph500 library system and informational education.

The Central Library runs and administers the Aleph500 library system. The main tasks of 2007 included providing the BUT libraries with access to the National Authority Files/Names. In the first phase, a local copy was made available to provide authority headers needed for cataloguing bibliographic records. A special training course was offered to library staff by experts from the National Library.

By the end of the year, the second phase was started – uploading the names of new authors directly into the National Authority Files. Work also continued on removing duplicates, clearing registries, and preparing for the connection to the Master Catalogue of the Czech Republic.

Some parts of the system were adjusted in order to unify the existing library processes.

As foreseen in the Plan of Library System Integration into the University Information Server, a central authentication login system was made available to the users.

Already in 2006, a working group was established by the Central library committed to design and put into operation a new model of informational education based on state-of-the-art teaching methods to help increase computer literacy of the BUT students.

Early in 2007, the curriculum was prepared of a new course for first-year students and negotiations were conducted with the competent academic officials to incorporate such courses in the university curricula. To achieve maximum efficiency, the preference was unanimously given to an e-learning course run under LMS Moodle.

The first courses were launched at the faculties of chemistry, electrical engineering and communication, and information technology in the winter semester. Based on the student feedback, the course seems to be well-designed and suitable for the curricula.

Following a new guideline by the rector concerning the form and submission of and access to university qualification projects, a new information system module was designed in cooperation with the Centre of Computer and Information Services to collect data on university qualification projects and enable automatic transfer of metadata with a subsequent import into the library

system. The value added by the module is the generating of the final project templates (title page, license agreement ...).

A project of building a BUT Digital Library was also submitted to the University Development Fund. In its first phase, the university qualification projects should be made available to a wider public in line with the above guideline.

In cooperation with VUTIUM Press, negotiations were started on opening a sales gallery of specialized and technical literature situated on the Central Library premises.

Table 2. 11. University libraries, library-information services

Yearly collection increase	22 166
Total collection	324 468
Number of periodical titles: – paper form – electronic form (estimate)[4]	 968 100
Opening hours in a week [1] (physical)	66
Number of loans to be studied at home [2]	85 441
Number of users [3]	29 136
Number of study seats	1 069
Number of volumes available for free selection	95 202

1) The opening hours of the library department with the longest opening hours. The opening hours of individual departments do not add up! 2) Including loan period extensions.
3) Users registered by 31st December 2007 are listed, that is, natural persons or legal entities registered by the library authorized to borrow collection documents (to be studied either in a study room or at home) and have not been newly registered or re-registered over the period in question.
4) Only the periodical titles are listed subscribed by the library itself (or received as a donation or exchange) in paper or electronic form are included; other periodicals with full-text access by the users within consortia are not included.

VUTIUM

The VUTIUM Press participated in 4 exhibitions of books published by BUT and in cooperation with BCES (the Quantum edition series) – World of Books, Prague – May, Autumn Book Fair, Havlíčkův Brod – October, the Frankfurt Book Fair, Frankfurt am Main – October, Libri Olomouc – November.

Three new titles were published (Basics of the technology of microelectronic circuits and systems by Ivan Szendiuch, Organic Chemistry, and Developing Essential Study Skills) and four reprints (The Soul of Brno, Structural Analysis of Building Structures I, Structural Analysis of Building Structures II, The Relativity Theory). A total of 212 ISBN's were assigned. This number includes publications brought out by all BUT faculties. Eleven issues of the BUT News journal were brought out with a yearly number of copies of 17,600. VUTIUM Press also participated in the preparation of the BUT 2008 Calendar.

The most remarkable books published by VUTIUM Press included the long awaited Czech translations – Organic Chemistry, a university textbook by John McMurry in cooperation with the Institute of Chemical Technology Prague and Developing Essential Study Skills by Elaine Payne and Lesley Whittaker.

In 2007 the VUTIUM Press editorial board met in February and late in November. At the November session, a list of titles to be included in the 2008 publishing plan was submitted to the board to decide about the order of their publishing.

CENTRE OF COMPUTER AND INFORMATION SERVICES (CCIS)

In 2007 there was an intensive development of the Apollo information system for staff and the Studis portal for students. Many of the tasks to be completed resulted from the BUT IS development priorities:

- installing tools to simplify the administration of charge payments;
- extending the doctoral study module;

As part of centralizing the BUT IS, the information system of the Faculty of Electrical Engineering and Communication was replaced by a central one which necessitated an extension of the BUT IS by the following new modules and processes:

- introducing a full electronic registration by students for the study in a particular year including the choice of a specialization, signing up for classes, and signing up for a particular course in a student's individual schedule;
- working out a new transparent method of automatic study monitoring using a new approach consisting in viewing a students' individual schedule as a list of duties. Being first tested at the Faculty of Mechanical Engineering, this method was then adopted by the faculties of chemistry, business and management, architecture, fine arts, and electrical engineering and communication;
- rewriting the final-state-project module to include the announcement of and signing up for Bachelor's and Master's degree projects;
- rewriting the examination date registration module;
- recording specialized electrical qualification of students, which was extended at the end of the year to include an option to register and track any particular qualification of staff. The qualifications are transferred from SAP.

A new technology was implemented to handle the registration peaks, which now allows for thousands of students being served simultaneously. Even at the faculty of Electrical Engineering and Communication, with the full electronic enrolment offering options of selecting the specialization and a particular course in the schedule, the information system ran smoothly with quick response.

The database was transferred to a 64-bit Oracle 10g server. An RAC cluster for the FibreChannel technology was bought late in 2007 to upgrade the Central Database making it more robust in 2008. If a single database server fails, the others should take over the entire load. This will replace the last non-doubled BUT IS component thus eliminating future system bottlenecks. A DB documentation module was established in the Apollo IS to improve the DB documentation. A Wiki-technology-

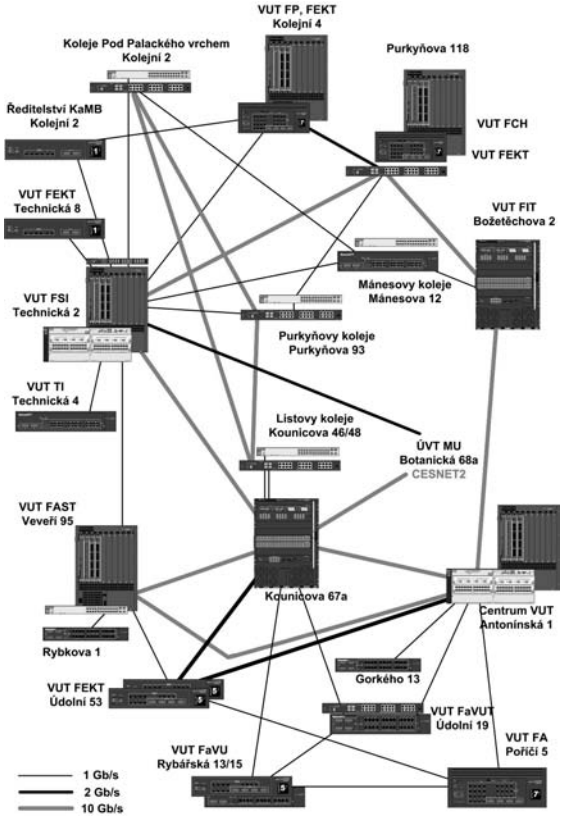
based publishing system was built to store analyses and the CCIS working space. Hundreds of articles have been created on this system with new descriptions still coming in and new information processes discussed. In 2007 the SAP system was upgraded to ECC 6 being now called ERP2005. This is a 64-bit ORACLE-10g-based version. The CCIS staff working on economic systems were transferred to the rector's office. CCIS also provides maintenance for the SAP servers, operating system, databases, and the SAP BC module. A new SafeQ central printing server was implemented in 2007 used to produce printouts and copies for students paid for from their canteen credits. This server was first used in 2007 by the faculties of mechanical engineering, electrical engineering and communication, the FCE library, joined by the faculty of business and management later on. A total of 476 electronic courses including 328 entirely new ones were created in the BUT e-learning system. The remaining 148 courses were created by copying the previous-academic-year courses with only topical updates. This e-learning systems also started to be used at the Faculty of Architecture. The Moodle project was also joined by the BUT libraries with their staff preparing nine IVIG courses now used at all faculties. Having been part of CCIS since 2005, the KolejNet student computer network grew from 5,750 connections to 6,060 connections. Another 300 connections were repaired and reconstructed to achieve a rate of 1 Gb/s. This brings the total number of connections built and reconstructed to 670. Next, some costly backbone active components were replaced bringing the KolejNet backbone transfer rate to 10Gb/s. KolejNet CCIS in cooperation with Cesnet and lawyers from the rector's office offered a very interesting lecture on the impacts of the copyright law on the BUT network user behaviour. CCIS also organized a lecture by Louis Palmer on his tour of the world in a Solartaxi solar electro-mobile and a lecture by Douglas Merill, vice-president of Google. In line with the long-term strategy, the development of the backbone network in 2007 focussed on installing equipment to support a 10Gb/s transfer rate, on completing the numbers of 1Gb and 10Gb ports to meet the local needs, on the network safety, development of the network administration information system and building of fibre-optic cable routes depending on the construction of BUT campuses. New Hewlett-Packard L3 10 Gb/s switches were installed in the backbone. The 10Gb backbone network now reached the Kolejní 4, Údolní 19, and Rybářská 13 nodes. The equipment of the nodes was upgraded on a continual basis if necessary to handle the increased traffic (BUT halls of residence at Veveří 95 and Purkyňova 118). The BUT Pod Palackého vrchem, Purkyňovy, and Listovy halls of residence were equipped with new switches with a larger number of ports to enable a 10 Gb/s connection between campus blocks. Having been tested in the FME network as part of a pilot project, Hewlett-Packard hp6200, a new 10Gb L3 switch type, was upgraded. In 2007, the number of its ports was significantly increased. As part of a UDF project, the newly built faculty backbone was connected to the metropolitan network.

The connection of BUT to the CESNET network was changed during the summer holidays of 2007. Primarily, BUT is connected through a 10 Gb/s route from the Antonínská 1 node to the CESNET – Botanická 68a node. At present, the traffic along this route is monitored with undesired traffic barred by an HW firewall. A backup 10 Gb/s connection is implemented from the Kounicova 68a node. The following fibre-optic cable routes were strengthened in 2007:

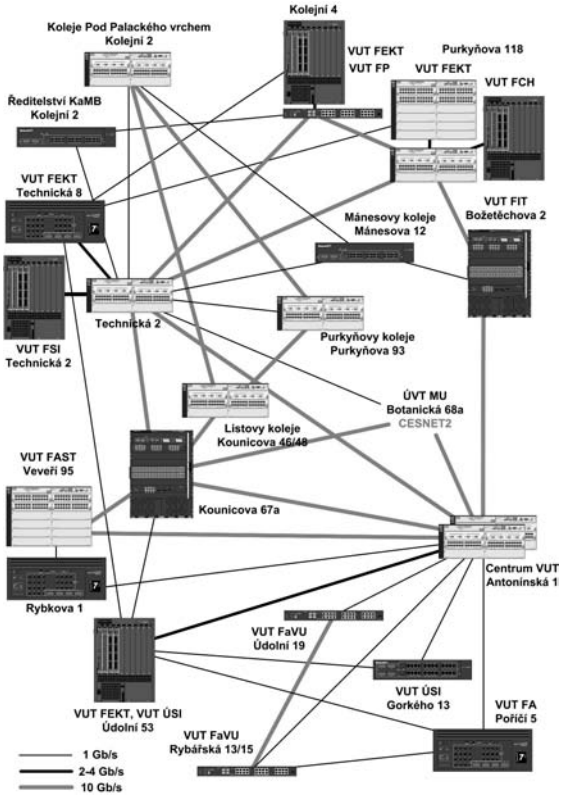
- Purkyňova 118 – Kolejní 4 – Kolejní 2 underground route (950 m, strengthened by 72 single-mode fibres)
- Božetěchova 1/2 – VFU Palackého 1–3 underground route (1500 m, strengthened by 78 single-mode fibres)

Diagram of the BUT gigabit backbone network

Beginning of 2007



Beginning of 2008



3. QUALITY AND CULTURE OF ACADEMIC LIFE

3. 1. Social affairs of students and employees

Under the University Act, Brno University of Technology awards 600 social scholarships and 12,000 accommodation scholarships monthly. These scholarships are paid from the targeted resources of the Ministry of Education, Youth, and Sports.

Social benefits of employees

The employer pays:

- a contribution to the pension and life insurance of the employees
- a contribution to meals for employees

The employer also supports:

- sports activities of the employees through BUT Centre of Sports Activities, also offering seminars and training courses
- further education of employees through the Institute of Lifelong Learning offering various educational courses
- recreation of employees at the BUT Ramzová and Vříšť holiday resorts

3. 2. Disabled candidates/students at universities

All the faculties put in a great deal of effort to promote the study of disabled students at the Gaudeamus education fair, when visiting secondary schools and at other events to provide information. Only at the Faculty of Chemistry, the study of disabled students is more difficult as work in a chemical laboratory requires good health. Computer rooms are barrier free. The Faculty of Chemistry prepares a new distant-study degree programme in information technology for which also disabled students could sign up.

Barrier free access is also ensured at all other faculties except the Faculty of Fine Arts. The study conditions are adapted to the individual needs of students. Faculties set up individual timetables offering cooperation with the tutor as needed in a particular course and assistance in cooperation with the Student Chamber of the BUT AS or the Union of Students. Electronic textbooks and other aids of a multimedia nature are available at most of the faculties; at FEEC, students may follow a laboratory lesson from virtual laboratories, FIT students are offered on-line lectures.

E-learning support for language classes was built at the Faculty of Mechanical Engineering to make up for the unattended lessons, students may remotely access all information sources available at incoming servers including e-mail, and a close cooperation exists with Para-CENTRE.

4. INTERNATIONALISATION

4. 1. BUT strategy in international cooperation, key priorities

BUT's long-term strategy is to achieve its internationalisation. An internationalisation requirement is also included in the university's mission statement and as such receives a great deal of attention from BUT's management. The reason is that BUT set itself a long-term objective to become a prestigious research university recognized as such all over the world becoming a major part of the European educational and research space. The management's all-year effort helped fulfil this objective. In September 2007, after some preparations, the rector was invited to the Bologna University. BUT made the necessary steps to strengthen its image and position by meeting the conditions required for signing the „Magna Charta Universitatum" document. The final act of signing this document took place after the meeting of University Management of Integrity, a Bologna annual conference organized by Magna Charta Observatory late in September 2007. BUT also took an active part in the autumn EUA conference held in Wroclaw from 25th to 27th October 2007. At present, BUT participates in the preparation of and discussion on amendments to the European Association of Universities constitution. Representatives from BUT participated in an Education in 21st Century – Diversity programme organized by Dublin Institute of Technology. Negotiations were conducted with the rector and other officials on future cooperation with the Brno universities resulting in the programme of a seminar to be held by BUT in 2008.

Important were BUT activities undertaken within the Conference of European Schools for Advanced Engineering Education and Research (CESAER) with participation in a discussion on accreditation at technical universities and in several workshops concerned, above all, with the preparation of a document on the basic conditions of doctoral study at European technical universities.

In November 2007, the Institut für Donauraum (IDM) and the Czech Embassy in Vienna invited BUT and Masaryk University to a joint meeting of Vienna universities. At the end of the visit, a master cooperation agreement was signed by BUT and TU Wien with negotiations on further cooperation on particular EU projects. It was also agreed that Professor Peter Skalicky, rector of TU Wien would be a joint candidate of both universities for the European Research Area Board.

A number of other important activities were carried out as part of the Socrates/Erasmus programmes (top academic-staff-mobility rating among the Czech universities), Leonardo da Vinci, TEMPUS II, CEEPUS and other programmes.

The university`s efforts to recruit international students, particularly doctoral ones were of equal importance. In 2007 BUT continued to make use of the contacts made previously to win, in cooperation with other Brno universities, international students (mostly from the former Soviet Union and Yugoslavia as well as from other countries such as Egypt, Syria, and Venezuela). An important role was played by the South Moravian Centre of International Mobility, an organization created by

3. 3. Exceptionally talented students

Table 3. 3. 2007 Awards for students and graduates

Best Graduate Rector Award		
	FCE	Miloš Braťka
	FME	Karel Martišek
	FEEC	Michal Pokorný
	FC	Kateřina Hynštová
	FFA	Andrea Braunová
	FIT	Martin Žádník
Josef Hlávka Award		
	FCE	Miloš Braťka
	FME	Karel Martišek
	FIT	Jan Kupčík
	FC	Lenka Rábová
	FFA	Lukáš Karbus
Siemens Award		
	FEEC	Petr Drexler
	FME	Pavel Kukula
PRECIOSA Foundation Prize		
	FEEC	František Burian
		Petr Kejík
	FC	Ivona Hynková
		Soňa Lichovníková
	FIT	Jiří Tobola
	FME	Radim Bublík
		Jan Slunský

Other awards for exceptionally talented students

FME

- Ing. Karel Martišek – 2nd place in the final round of the 2007 Czecho-Slovak Student Research Competition
- Bc. Hana Druckmüllerová – Scholar-Leaders 2007 scholarship awarded by GE Foundation and Institute of International Education
- Pavel Čoupek – Student Design Prague 2007 award in the Excellent Student Design 2007 category
- Bc. Martin Nečas – Student Design Prague 2007 award in the Excellent Student Design 2007 category
- Tomáš Říha – Student Design Prague 2007 award in the Excellent Student Design 2007 category
- Jakub Lekeš – Student Design Prague 2007 award in the Good Student Design 2007 category
- Lukáš Brza – 2007 semester project (Social Poster), short-listed for an exhibition of the winners of Triennale of Poster, Hong Kong 2007
- Ing. Miloš Matoušek – ČEZ 2007 award, 2nd place in a degree project competition
- Eva Molliková – JMK Scholarship as part of the „System of Support for Talented Students"
- Jaromír Dvořák, Jana Dvořáková – scientific paper receiving an award at an DAAAMS Junior 2007 conference

FBM

- EHP Norska – the scholarship received by 2 students for the summer semester of 2006/2007: Vojnová Petra, Semorádová Petra and 5 students for the summer semester of 2007/2008: Bilavčík Martin, Eliášová Klára, Juřenčáková Jana, Klabačková Kateřina, Richtr Jiří
- ETAP – in an international accounting competition (in Lille and St. Petersburg), the following six students put on an excellent performance: Růžičková Kamila, Valentová Andrea, Bělová Zuzana, Janoušková Petra, Fojtíková Kristina, Česal Zdeněk
- Euroweek 2007 in Bo, Norway – 16 participants with 5 projects receiving awards: Milichovský František, Voráčová Monika, Vlk Tomáš, Vlčková Klára, Divoký Tomáš, Hladiš Lukáš, Štok Peter, Pekár Martin, Novotný Tomáš, Pohl Jan, Crha Pavel, Polak Michal, Učeň Michal, Vastušková Valéria, Svoboda Petr, Zapletal Václav

FEEC

- Dřínovský Jiří – Emila Škoda Award in 2007 for the best doctoral project
- Mikšík Ondřej – prize-winner of the Czech Head 2007 – Hope competition, Poštovní spořitelna prize

FIT

- Ing. Petr Schwarz, Ing. Pavel Matějka, and Ing. Lukáš Burget – BUT Silver Medal for excellent results in the research and applications of automatic speech recognition, particularly in identifying the language and the speaker
- Ondrej Martinský – 2nd place in the ACM Student Research Competition 2007, organized by the Czech ACM Chapter and sponsored by Microsoft Česká republika
- Zdeněk Vašíček and Michal Bidlo – prof. Jan Hlavička prize for excellent achievements in doctoral study
- GE Foundation Scholar-Leaders Program 2007 for the Czech Republic (GE Foundation – General Electric foundation), 3 scholarships – Jan Koriťák, Vlastimil Košař and Ondřej Lengál
- Tobola Jiří – Degree Project of 2007 – a special prize of the Profinit company
- Bc. Aleš Šturala – 1st place in the Czech and Slovak finals of Microsoft Imagine Cup 2007 for his Silent Books project. In the finale of Imagine Cup held from 6th to10th August 2007 in Soul, South Korea, he ended up among the world's 12 best. There were 344 students from 59 countries taking part.
- Ondrej Martinský – 1st place in the Degree Project of 2007, in Informatics
- Ing. Radek Kubíček, Ing. Roman Juránek, and Bc. Rostislav Jadavan – an honourable mention in the AFCEA 2007 student competition
- the dean of the faculty of Civil Engineering awarded SIGNUM PROSPERITATIS medals to 7 graduates for their extraordinary achievements in study (awards won in the faculty and international rounds of the Student Research competition, representing the faculty at study stays at domestic and foreign universities, etc.)
- on the occasion of the 17th November anniversary, the dean of the faculty of Civil Engineering awarded SIGNUM PROSPERITATIS medals to 4 doctoral students for their extraordinary achievements in study, for representing the faculty during study stays at domestic and foreign universities, and for providing perfect organizational and social services during the JUNIORSTAV conference

Also on this occasion, another 4 students of the Architecture of Building Structures were given Arnošt Wiesner awards.

FFA

- Jakub Sanitrák, student of the Studio of Graphic Design, 1st place in a competition to design a logo of the Student Chamber of the University Council
- Jana Malíková, student of the Studio of Graphic Design, 1st place in a competition for the visual design of the M.O.R. radio
- Jana Malíková, student of the Studio of Graphic Design, 2nd place in a MOBITEX 2008 BVV new visual style competition
- Jaroslav Gereg, student of the Studio of Product Design won a Good Student Award in a

Student Design competition
- Jaroslav Juřica, student of the Studio of Product Design, cooperation with Prefa Brno on implementing a Beto furniture
- Lukáš Hájek, student of the Multimedia Studio, participated in the finale of EXIT, a national design competition of artistic university students in Ústí nad Labem
- Lukáš Karbus, student of the Painting Studio 2, Hlávka Award for his degree project
- Lukáš Veverka, student of the Graphic Studio, participated in the new visual style of the ČT 1 and ČT 2 Czech TV programmes
- Marek Jelínek, student of the Graphic Design Studio, 1st place in a competition for he facade design of the houses in Nábřeží Járy Cimrmana Street in Lipník nad Bečvou
- Jakub Raffael, student of the Graphic Design Studio, 2nd place in a competition for he facade design of the houses in Nábřeží Járy Cimrmana Street in Lipník nad Bečvou
- Marek Jelínek, student of the Studio of Graphic Design, 1st place in a MOBITEX 2008 BVV new visual style competition
- Michal Krysl, graduate from the Performance Studio, participated in the finale of EXIT, a national design competition of artistic university students in Ústí nad Labem
- Peter Harach, student of the Studio of Product Design, cooperation with the LUCIS company, design and implementation of a lamp
- Zuzana Lahutová, student of the Graphic Design Studio, 1st place in a competition to design a logo of the BUT International Student Club
- Zuzana Lahutová, student of the Studio of Graphic Design, 2nd place in a competition for the visual design of the M.O.R. radio

3. 4. Accommodation and catering at BUT

Table 3. 4. Student care – accommodation and meals

Total number of beds at BUT halls of residence	7 018
Number of beds in hired facilities	0
Number of accommodation applications submitted until 31st December 2007	9 278
Number of accommodation applications granted until 31st December 2007	6 968
Percentage of approved accommodation requests	75

Composition of the bed-per-month price				
Subsidy by the Ministry of Education on student meals and accommodation	other funding	price for students	price for BUT staff	price for others
		17,50–30,00	20,00–33,00	

Composition of the main-meal price				
Subsidy by the Ministry of Education on student meals and accommodation	other university funding	price for students	price for BUT staff	price for others
21,10		19,00 & 26,50 *)	19,00 & 26,50 *)	

Number of main meals sold in 2007		
Total	**2 051 745**	
including		
students	university staff	others
1 722 886	116 380	162 479

**) until 30th June 2007, limit catering with two-tier pricing, from 1st July 2007, non-limit catering*

4. INTERNATIONALISATION

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the Brno Centre of European Studies and the South Moravian Region. The South Moravian Centre of International Mobility also provided the international students with a „starting scholarship". In conformance with the scholarship rules of the centre, nine international students for whom one-year scholarships had already been paid out were given further one-year scholarships beginning on 1st September 2007. For the academic year 2007/2008, BUT won for its candidates 15 out of the 25 starting scholarships offered by the South Moravian Centre for International Mobility. This is a proof of BUT's good marketing skills with international students coming not only from Russia but also from Serbia, Monte Negro, Bosnia, Herzegovina, and Iraq.

The studies offered by BUT to international students were presented during trips of BUT staff abroad as well as during events organized by the South Moravian Region (Kharkov, Chanty-Mansiysk, Banja-Luka, Kraguyevac and others). Apart from these activities, traditional cooperation had been going on with the State Technical University of Izhevsk (Russian Federation) with the greatest number of students studying at BUT (more than 25 in 2007).

Two Czech courses have already been completed at the State Technical University of Izhevsk for those interested in study at BUT. The four-week classes took place in June 2007 and October-November 2007 with 25 students in each. The BUT lector in charge of the classes brought back suggestions for further cooperation in teaching as well as agreements for further international students to study at BUT. For better integration of international students, in each semester, courses were offered in basic and technical Czech.

BUT signed a total of forty-five teaching and research cooperation agreements with leading European and non-European universities. It is in these agreements and their more comprehensive fulfilment that the BUT management sees an area to be concentrated on in the near future.

4. 2. BUT involvement in international educational and R&D programmes

There is a fully accredited follow-up Master's joint-degree programme at BUT called Economics and Management with a European Business and Finance study field. This programme is a joint one with The Nottingham Trent University, UK and the Economic University of Karol Adamiecki, Katowice, Poland participating. Further joint programmes are being prepared within the existing cooperation agreements. Another two joint-degree programmes were prepared for accreditation in 2007.

Three 7th-Framework-Programme projects were approved in 2007 (REGPOT-2007-3, EU-7FP-IST, and FP7-NMP-2007-SME-1) for BUT to cooperate on. The total financial participation by BUT in these projects amounts to 34 million CZK. Another two 26-million-CZK 7th FP projects in which BUT is to participate are likely to be approved, too.

4. 3. Student and teacher mobility

Table 4. 3. 1. Participation of the university in international teaching cooperation programmes – EU programmes for teaching and vocational training

Table 4. 3. 1. Participation of the university in international teaching cooperation programmes – EU programmes for teaching and vocational training

Programme	LLP (Socrates)							
	Erasmus	Comenius	Grundtvig	Lingua	Minerva	Leonardo	Jean Monnet	Erasmus Mundus
Number of projects	1							
Number of out-going students	456					24		
Number of in-coming students	235							
Number of out-going academics	186							
Number of in-coming academics	119							
Subsidy (thous. CZK)	**19 790**					**2 737**		

Tab. 4. 3. 2. Participation of the university in international teaching cooperation programmes – other programmes

Programme	Ceepus	Aktion	Others
Number of projects	8		
Number of out-going students	9		
Number of in-coming students	11		
Number of out-going academics	7		
Number of in-coming academics	1		
Subsidy (thousand CZK)	**346**		

Tab. 4. 3. 3. Participation of the university in international teaching cooperation programmes – other study stays abroad

Programme	Government scholarships	Direct inter-university cooperation / including Development Programmes	
		Europe / including Development Programmes	outside Europe / including Develop. Programmes
Number of out-going students		293	15
Number of in-coming students	9	52	
Number of out-going academics		8	
Number of in-coming academics		9	

4. 4. Courses taught in foreign languages, joint programmes

BUT offers a range of programmes accredited for teaching in a foreign language. However, only a small percentage of students sign up for an entire degree programme. An amendment to the University Act, under which a degree programme taught in a foreign language has to be paid for, has done away with a much sought for programme, which was also attended by a numerous group of Czech students in addition to international students paying for their studies. As the BUT Mission Statement foresees an increasing proportion of courses taught in English, all the faculties are trying to teach at least some of the courses in the Czech degree programmes in English. Table 4. 4. lists degree programmes accredited in English.

Table 4. 4. Degree programmes accredited in English

Programme groups	Degree programmes							
	Bachelor's		Master's		follow-up Master's		Doctoral	
	English	language	English	language	English	language	English	language
Total	**6**	**–**	**1**	**–**	**13**	**–**	**6**	**–**

5. ENSURING THE QUALITY OF ACTIVITIES CARRIED OUT AT BUT

5. 1. General principles and approaches

For BUT, quality assurance is a matter of strategic priority. Regarding this area, BUT conforms with national and international documents, such as the current recommendation by OECD experts provided for the Czech higher education institutions not only for quality management. The aims and objectives of long-term quality-assurance have been incorporated in the BUT 2006-2010 Mission Statement with particular tasks specified by annual MS amendments and implemented within Ministry-of-Education Development Programmes. Attention is directed to quality maintenance and improvement as well as to its evaluation – both based on the concept of quality as fitness for a purpose. The fulfilment of quality assurance tasks was mostly supervised by the BUT management, Academic Senate and a BUT quality assurance task force. Both internal and external resources were used to carry out the activities required as well as cooperation and exchange experience with other higher-education institutions including the Ministry of Education Centre for International Services – the Bologna Experts programme; Czech Conference of Rectors; University Council; Centre for Higher-Education Studies; Masaryk University, Janacek Academy of Music, West-Bohemian University, Technical University of Ostrava, and others).

5. 2. Internal quality assurance

In 2007, the internal quality assurance tasks were incorporated in the BUT Framework Programme, which received funding from the Ministry of Education. The aim was to provide support for university quality management as well as for assuring the quality of its main activities, that is, teaching, student-oriented services, research and development, and cooperation with industries. Based on the quality-as-fitness-for-purpose underlying principle with quality assessed by the goals achieved, attention was concentrated on processes enabling such achievements in terms of their directness, smoothness, efficiency, and resources. Methods of qualitative and quantitative analysis were used to inspect the processes.

a) Control and decision-making processes. The results of the process analysis triggered particular measures to improve the existing or introduce new activities and processes identified as not-yet sufficiently supported by BUT or missing – such as change and risk management, human resources management, and marketing. As a result, some areas are being restructured in terms of their organization, placement, and human resources support.

b) In education, the integration, interdisciplinarity, and internationalisation dimensions receive full support. The structures of educational programmes are beginning to concentrate on their outcomes – based on enquiries and recommendations from graduates in cooperation with the practice and considering the progress made in processing the European and national qualification framework. At the BUT faculties, students continue to be asked to assess teaching with

the results being used; efforts were put in place to integrate the system and methodology of the student assessment within BUT as a whole. The following changes were made concerning student-related matters: student associations and activities (ACSA, BEST) were given firm organizational base being managed by one of the BUT vice-rectors. The services provided for BUT students were improved by providing more opportunities to use ICT both in study rooms and halls of residence. Accommodation, catering, health care, cultural and sports events are being evaluated together with students.

c) In the R&D area, the primary focus was on two issues: European operative programmes (their planning in terms of the risks involved and the project/process management) and the R&D evaluation methodology (both general and focused on the possible impacts on BUT rating and planning). These activities resulted in setting up project teams for European operative programmes including internal and external specialists, next in an approved change in the existing assessment method and, last but not least, in encouraging BUT R&D workers to carry out their activities in a more efficient manner and to provide more detailed reports on the R&D outcomes. As part of the required changes in the BUT organization, a task force was set up to conduct quantitative and qualitative analyses in support of control and decision-making processes.

d) to conform to the social practice, more attention was paid to the BUT Technology Transfer Department, its cooperation with the R&D and marketing areas, to the application of R&D outcomes and practical innovations. An enquiry was conducted at BUT to evaluate the experience and job opportunities of BUT graduates with its results being used to improve the degree programmes and manage the development of BUT human resources.

5. 3. External quality assurance

No external activity and environment quality assessment was made in 2007, save for the accreditation and re-accreditation of degree programmes. However, an internal audit was made of the implementation of recommendations and conclusions of external BUT assessment reports (EUA and Centre of Higher-Education Studies in 2006) in preparation for the expected follow-up visits to BUT of experts from both institutions. More efforts were also made to see to it that the implementation of selected recommendations is more prompt and strict.

5. 4. Internal and external quality assurance through benchmarking

In 2007 a BUT quality assurance working group continued to take part in the ESMU Benchmarking working seminars, specialised reports, comparative studies, institution self-assessments (to determine an institution`s own position concerning the selected processes among the universities involved), analysis of the project final report and recommendations related to BUT, designing measures to be taken for improvement and the beginning of their implementation. The cooperation on the project continues.

5. 5. Data on financial audit

• Setting up and maintaining an efficient internal audit system.

Instruction no. 32/2004 issued by the BUT rector under Act no. 320/2001 Coll. On Financial Audits serves as a basis for maintaining an internal BUT audit. Due to the strict adherence to this instruction, conditions are created for economical and purpose-fitted spending while implementing the BUT Mission Statement. The Rector Instruction concerning the implementation of financial audits is complemented by a code of practice issued by the BUT bursar under serial no. 62/2004. It provides for preliminary, regular, and follow-up audits of financial transactions carried out at BUT. Amendments to this in-house regulations are updated on a regular basis in conformance with the changes in the list of persons responsible for carrying out particular levels of financial audits (a list of mandators and transaction owners).

The internal audit system also involves the identification and evaluation of risks resulting from carrying out the tasks set and achieving the objectives approved. A new IS was introduced in 2007 for setting up a risk map for each BUT faculty and department to be then used to evaluate a BUT overall risk map. Thus the risk map was processed both by the BUT management and a BUT internal audit.

Based on an analysis of areas with the greatest risk potential, a BUT internal audit plan was made. Internal audits were concerned mostly with the way the funding allotted was spent in selected subsidy chapters and educational, research and science projects. In addition to the plan as approved, extraordinary audits were carried out in 2007 according to the current needs of the BUT faculties. In connection with a particular area being audited, the functionality of the BUT internal audit system was tested.

The BUT internal audit system is incorporated in the BUT information system containing all the information on BUT, assets, liabilities, and transactions made. In 2007 the existing information system was upgraded improving the quality of the internal audit system settings.

Information on suspected and proved cases of corruption.

In connection with the audit methods, there were no cases of corruption proved at BUT.

6. BUT DEVELOPMENT

In 2007, BUT made more effort to strengthen the cooperation with Masaryk University in Brno, other Brno universities and institutes of the Czech Academy of Sciences in order to prepare joint projects to be financed from the EU Structural Funds, which particularly applies to the „Science and Research for Innovation" projects R&D for Innovation, Priority 1. Apart from this activity, some faculties (FME, FEEC, FCE, FIT, FC) submitted their own R&DfI screening project proposals used by the Ministry of Education, Youth, and Sports to determine the absorption capacities of the Czech regions for medium R&DfI projects. The R&DfI projects being of key importance for the future of research and development at BUT, they receive due attention by BUT officials. A framework was worked out to be used for internal assessment of the R&DfI projects and, in conformance with the R&DfI OP, BUT builds an internal system for commercionalizing the R&D outcomes. The Technology Transfer Department prepares projects for R&DfI priority 3, and priorities 2.3 and 2.4 of the Education for Competitiveness Operative programmes to put in place a commercialization system at BUT.

6. 1. Involvement in the development programmes offered by the Ministry of Education

Table 6. 1. Involvement of the university in development programmes for public higher education schools in 2007

Development programmes for universities	Number of projects submitted	Number of projects accepted	Funding received (thousands of CZK)	
			capital	ordinary
Programme of support for internationalisation	3	3	0	9 370
Programme of support for quality improvement and more efficient management at universities	1	1	0	2 200
Programme of the improvement of the quality of activities carried out at universities	1	1	0	2 200
Programme of support for the development and innovation of degree programmes	4	3	1 300	18 770
Programme of support for the development and innovation of programmes for further teacher education	0	0	0	0
Programme for the preparation and development of human resources	4	4	0	7 860
Programme of support for structures common for universities and customers	3	3	170	3 330
Programme of the development of equipment and state-of-the-art technologies	3	3	11 350	6 100

Programme of support for the cooperation of universities with regional schools	0	0	0	0
Programme of support for equal opportunities for admission to and study at universities	2	2	380	4 870
Programme of support for removing the weak and strengthening the strong points of a university	1	1	0	8 200
Total			**13 200**	**62 900**

6. 2. Involvement in the University Development Fund projects

Table 6. 2. BUT involvement in the University Development Fund Programmes

Thematic group	Number of projects accepted	Capital subsidy (thousand CZK)	Ordinary subsidy (thousand CZK)	Total subsidy (thousand CZK)
A	20	31 641	0	31 641
B	1	0	203	203
C	1	0	250	250
F	78	0	15 635	15 635
G	60	0	8 210	8 210
Total	**160**	**31 641**	**24 298**	**55 939**

6. 3. Involvement in projects financed from the EU Structural Funds

Table 6. 3. BUT involvement in the programmes financed form the EU Structural Funds

Operative	Measure (name)	Project	Implementation period	Funding received (thousand CZK) ordinary / capital	Funding received (thousand CZK) for 2007 ordinary / capital
HRR OP	3. 2.	Centre of Further Education in Water Management	2005–2007	1 827/0	1 044,4/0
HRR OP	3. 3.	Programmes of Further Job Education in Civil Engineering and Public Administration	2006–2007	2 930,7/0	1 444/0
HRR OP	3. 2.	Modernizing teaching methods at the BUT Faculty of Civil Education in Bachelor's and Master's degree programmes	2006–2008	9 319,949/0	4 721,5/0

HRR OP	3. 2.	CZ. 04. 1. 03/3. 2. 15. 1/0146	2005–2007	1 200	736
HRR OP	3. 2.	CZ. 04. 1. 03/3. 2. 15. 1/0003	2006–2008	7 708	2 096
HRR OP	3. 2.	Innovation of Bachelor's, Master's and doctoral programmes in Manufacturing Technology, Manufacturing Technology and Industrial Management	11/2005 –10/2007	2 652,396	
HRR OP	3. 2.	Innovation of mechanical-engineering-oriented fields in the conditions of an information society	7/2006 –6/2008	7 977,5	4 075
HRR OP	3. 2.	A comprehensive set of lifelong courses in applied chemistry, environment protection, and crisis management	1. 1. 2006 –5. 1. 2008	4 468	1 500
HRR OP	3. 2.	Further-education courses designed for methodologists and managers in the Quality Management, Environment Management, and Health and Safety Management systems	7/2006 –12/2007	1 489,228	
HRR OP	3. 2.	Education in Electronic System Design	5. 1. 2006 –4. 1. 2008	1 993,700/0	618,752/0
HRR OP	3. 2.	Improving the education and competence of managers as part of the Economics and Management Master's programme offered by the BUT Faculty of Business and Management CZ. 04. 1. 03/3. 2. 15. 2/0284	24 months	2 965,293	1 480,053
HRR OP	3. 2.	Management in the conditions of Eastern-European countries and Russia CZ. 04. 1. 03/3. 2. 15. 2/0257	24 months	3 260,000	1 200,000
HRR OP	3. 2.	Innovation of artistic degree programmes specializing in multimedia creation CZ. 04. 1. 03/ 3. 2. 15. 3/0428	January 2007 –June 2008	574,900	371,810
HRR OP	3. 2.	Creation and pilot-testing of Be Smarter at Work, a new further-education university programme CZ. 04. 1. 03/3. 2. 15. 2/0207	24 months	1 008,800	391,248

HRR OP	3. 2.	Implementing a system view of education when adopting sustainable development CZ. 04. 01. 03/3. 2. 15. 1/0151 Ministry of Education	2005–2007	1 579,860	946,406
HRR OP	3. 2.	Modernizing and innovating teaching in architectural fields CZ. 04. 1. 03/3. 2. 15. 2/0286 Ministry of Education	2005–2007	2 042,400	756,361
HRR OP	3. 3.	Natural materials and raw clay in modern and traditional buildings CZ. 04. 1. 03/3. 3. 11. 3/3131 Ministry of Education x)	2006–2008	2 868,496	148,900
EU INTEREG III CR – SR	8. 1.	Through the past to the future – natural materials in regional building culture CZ. 04. 4. 84/1. 2. 00. 1/0216 Ministry of Local Development x)	2005–2007	1 500,000	987,000
Research to resolve regional disparities	PP4 Zone Planning	Sustainable development indicators used as a tool of monitoring and reducing the disparities in the level of population across regions WD-69-07-4 Ministry of Local Development	2007–2011	1 720,000	355,000
HRR OP	3. 2.	Development of teaching skills	5. 1. 2006 –4. 1. 2008	4 776,550	2 396,710
HRR OP	3. 3.	Training in digital design for lectors, consultants and vocational training teachers	30. 1. 2006 –30. 1. 2008	4 829,250	1 898,884
HRR OP	3. 2.	Teaching humanities at BUT	5. 1. 2006 –25. 5. 2007	1 409,815	668,425
HRR OP	4. 1.	System of internal training and adaptability of university staff	1. 5. 2006 –30. 4. 2008	4 992,450	738,816
HRR OP	3. 1.	Further education of teachers at technical secondary schools to improve cooperation with industries	6. 12. 2006 –30. 6. 2008	5 294,590	0,00
HRR OP	3. 2.	Improving the preparedness of students for practical jobs CZ. 04. 1. 03/3. 2. 15. 2/0374	2006–2008	1 348,860	716,034

7. CONCLUSION

For BUT, the year 2007 was, above all, a year of continuity and positive evolution – traditional at all levels and in all forms of education, fruitful in research, development and external cooperation, and marked in management methods and processes. Without any significant deviations, the key figures of the BUT Mission Statement and its amendments had been achieved with all the activities being carried out in order to fulfil the BUT`s mission and strategic visions with a view of its own development and in favour of its academic community and the entire society and in order to maintain and strengthen BUT`s position in the domestic and international context.

The year 2007 also saw preparations for taking advantage of outside opportunities, particularly those that could be crucial for the university`s further development and for fulfilling its mission. These particularly include the Education for Competitiveness and Research & Development for Innovation EU operative programmes. In this respect, Brno University of Technology was among those universities that led the initiative even under the circumstances brought about by the outside political framework.

APPENDIX 1

Table 1. 4. BUT as represented in international and professional organizations

Organization	Country	Status
AIB (Academy of International Business)	USA	member
Czech Marketing Organization	CZ	member
Global Business and Technology Association (GBATA)	USA	board member
Association of Female Entrepreneurs of the Czech Republic	CZ	vice-president
Moravian Association of Female Entrepreneurs and Managers	CZ	honourable chairman
Association for Business Ethics	CZ	committee member
PRIME	B	member
EACES	GB	member
Czech Logistic Association	CZ	presidium member
Gesellschaft für Angewandte Matematik und Mechanik (GAMM)	D	member
European Association for Theoretical Computer Science (EATCS)	B	member
American Mathematical Society (AMS)	USA	member
Institute of Electrical and Electronics Engineers (IEEE)	CZ	IT manager of Czechoslovak section, member
Czech Electrotechnical Society	CZ	member
Czech Society for Quality	CZ	member
Association for Project Management	CZ	member
Czech Standards Institute	CZ	member
Gesellschaft für Informatik	D	member
Internationale Gesellschaft für Ingenieurpädagogik	D	member
Czech Society for New Materials and Technologies	CZ	member
Czech Computer Science Association	CZ	member
Council of Higher Education Institutions	CZ	member
International Speech Communication Association	F	member
American Association for Artificial Intelligence	USA	member

Association for Computational Linguistics	USA	member
European Association for Lexicography	F	member
Czech Society for Cybernetics and Informatics	CZ	member
Journal of Electrical Engineering	SK	editorial board member
Computing and Informatics journal	SK	editorial board member
Journal of Universal Computer Science (J.UCS)	A	editorial board member
International Journal of General Systems	USA	editorial board member
ISEKI-Food Association	A	member
Association of Chemical Companies	CZ	member
Society of Plastics Engineers (SPE)	USA	member
Royal Society for Chemistry	GB	member
American Chemical Society	USA	member
Materials Research Society	USA	member
International Humic Substances Society		member
European Photochemistry Association		member
International Water Association (IWA)		member
International Water Supply Association (IWSA)		member
European Association of Chemistry and Environment		member
Global Water Partnership (GWP)		member
International Pyrotechnics Society		member
Czech and Moravian Electrical and Electronic Association	CZ	member
EUA	B	member
AECEF	CZ	member
The International Society of Difference Equations	USA	member
Committee of Stochastic Programming	USA	international committee member
IBS	USA	member
TIES	USA	member
ICOGRADA (International Council of Graphic Design Associations)	Canada	member

ERCOFTAC (Brussels)	B	member
International Energy Agency, ECBCS Implementation Agreement	F	CR representative in AIVC Annex
COST 633, management committee	B	CR representative in management committee
COST P20, management committee	B	CR representative in management committee
COST ES0603, management committee	B	expert for CZ in management committee
International Deep Drawing Research Group (IDDRG)	NL	CR representative
World Foundrymen Organisation	GB	vice-president
American Foundrymen Society	USA	member of honour
Polish Academy of Sciences, Foundry Committee	PL	member
ASM	USA	member
SAMPE	USA	member
DGM	D	member
COST – domain committee	EU	member
Science Steering Committee RAAD	EU	member
IFToMM Rotor Dynamics Committee	international organization	member
IFToMM Committee for Education	international organization	member
Expert group of European project „Entrepreneurship in higher education, especially within non-business studies", European commission	EU	CR representative
International Council of the Aeronautical Sciences (ICAS)	international organization	representative of Czech Association for Mechanics
International Council of the Aeronautical Sciences (ICAS)	international organization	programme committee member
ASME	USA	member
AIST	USA	member
International Federation for the Promotion of Mechanism and Machine Science IFtoMM	international organization	CR representative in the robotics section

American Biographical Institute	USA	consultant
International Project Management Association	international organization	national association chairman
Federation Internationale du Recyclage F.I.R.	NL	board chairman
Czech Astronomical Society	CZ	member
Czech Mathematical Society of the Czech Union of Mathematicians and Physicists	CZ	committee member
Czech Statistical Society	CZ	member
Czech Society for Mechanics	CZ	vice-chairman
Association for Personal Certification	CZ	member
Czech Society for Non-Destructive Testing	CZ	president
Biennale Brno Association	CZ	member
Union of Visual Artists of The Czech Republic	CZ	member
Czech Ergonomic Society	CZ	member
Association of Moravian Designers	CZ	member
Czech Standards Institute	CZ	member
Czech Institute for Accreditation	CZ	member
Grant Agency of the Czech Republic	CZ	reporter
Czech Society For Research and Processing of Metal Sheets	CZ	committee member
Czech Forging Association	CZ	committee member
Czech Welding Society	CZ	committee member
CWS-ANB Prague	CZ	member
Czech Foundry Society	CZ	executive committee member
Society for Machine Tools	CZ	executive committee member
Czech-Moravian Society for Automation	CZ	member
Association of Mechanical Engineers	CZ	senate member
Subcommittee for Science, Research, Aviation, and Aerospace Engineering of the Chamber of Deputies of the Parliament of the Czech Republic	CZ	member
Technical Committee of the Aviation Amateur Association	CZ	member

Association of the Aviation Manufacturers	CZ	member
Association of Aviation Operators	CZ	member
Moravian-Silesian Academy for Education, Science, and Arts	CZ	chairman
Czech Society for Operations Research	CZ	member
Czech-Moravian Society for Automation	CZ	committee member
Czech Society for Cybernetics and Informatics	CZ	member
Czech Association for System Simulation	CZ	member
Czech National IMEKO Committee	CZ	member
Quality Council	CZ	consulting team member
Chamber of Commerce	CZ	member
State Testing Institute Brno	CZ	certific. committee chairman
Association for the Development of Building Material Recycling in the Czech Republic	CZ	president
Waste Material Management Board – a consulting body of the Ministry of Environment	CZ	member
Raw Material Policy Board – a consulting body of the Ministry of Industries and Commerce	CZ	member
ELIA	NL	member
EUNIS-CZ	CZ	member
SAP Public Higher Education Institutions Coordination Centre	CZ	member
Cesnet, z. s. p. o.	CZ	member

APPENDIX 2

Table 2. 5. 2. BUT 2007 Doctoral Graduates

Fac.	Name	Thesis and supervisor
FCE	RNDr. Marie Vojtíšková	Using altimetric data to determine the geoid geopotential value and verifying its stability. Supervised by doc. Ing. Josef Weigel, CSc.
FCE	Ing. Ondřej Šikula	Modelling the basic energy elements of the technical equipment of buildings. Supervised by Ing. Günter Gebauer, CSc.

FCE	Ing. Pavel Golík	Probabilistic evaluation of a riverbed capacity. Supervised by prof. Ing. Jaromír Říha, CSc.
FCE	Ing. et Ing. Daniel Foltýn	Characteristics of the electromagnetic micro-climate in resi-ential areas. Supervised by RNDr. Eleonora Čermáková, CSc.
FCE	Mgr. Iveta Plšková	Using frequency inspection to assess the frost resistance of cera-mic pavement. Supervised by prof. RNDr. Zdeněk Chobola, CSc.
FCE	Ing. Petr Smékal	Study of low-frequency electromagnetic fields in residential and working areas. Supervised by RNDr. Eleonora Čermáková, CSc.
FCE	Mgr. Marie Chrástová	Analysing the acoustic emission signal generated by heat stress of building elements by the Wavelet method. Supervised by doc. Ing. Luboš Pazdera, CSc.
FCE	Ing. Radim Nečas	Segment structure with a coupled board, design, manufacture, and test of a model. Supervised by prof. Ing. Jiří Stráský, CSc.
FCE	Ing. Jiří Oliva	Reliability of panel systems, structural analysis of panel buildings. Supervised by prof. RNDr. Ing. Petr Štěpánek, CSc.
FCE	Ing. Ivana Švaříčková	Strengthening building structures by external glued carbon fibre reinforcement. Supervised by prof. RNDr. Ing. Petr Štěpánek, CSc.
FCE	Ing. Zbyněk Vlk	Analysing the effect of flexible reinforcement and transversal inertial forces on the stability of slim structures. Supervised by doc. Ing. Vlastislav Salajka, CSc.
FCE	Ing. Petr Holcner	Non-linear properties of a traffic flow. Supervised by doc. RNDr. Jiří Macur, CSc.
FCE	Ing. Petr Lichtneger	Using laser Doppler anemometry to analyse the flow structure in hydraulic elements. Supervised by prof. Ing. Jan Šulc, CSc.
FCE	Ing. Ondřej Šilhan	Adhesion of asphalt stripes to a metal sub-base. Supervised by doc. Ing. Antonín Fajkoš, CSc.
FCE	Ing. Pavel Zejda	Removing masonry humidity by microwave equipment. Supervised by doc. Ing. Miloslav Novotný, CSc.
FCE	Ing. Darwish Shpair	Economic and technical analysis of water losses in a water distribution system. Supervised by Ing. Ladislav Tuhovčák, CSc.
FCE	Ing. Vladimíra Šulcová	Supporting a decision-making system for renewing wastewater networks. Supervised by doc. Ing. Petr Hlavínek, CSc.
FCE	Ing. Karel Dvořák	Using waste materials to make hydraulic binders. Supervised by doc. Ing. Marcela Fridrichová, CSc.
FCE	Ing. Hana Kmínová	Study of thermal technical properties of building materials in terms of their impact on the microclimate in buildings. Supervised by doc. RNDr. Ing. Stanislav Šťastník, CSc.
FCE	Ing. Roman Gratza	Analysis of fatigue of structures and components from thermoplastics. Supervised by Ing. Jiří Kytýr, CSc.
FCE	Ing. Petr Horák	Modelling earth exchangers. Supervised by doc. Ing. Jiří Hirš, CSc.

FCE	Ing. Pavel Kovář	Monitoring the effect of selected technological parameters on cordierit materials. Supervised by Ing. Karel Lang, CSc.
FCE	Ing. Barbora Kovářová	Methodology of the selection of economic and technological aspects. Supervised by doc. Ing. Bohumil Puchýř, CSc.
FCE	Mgr. Ivo Kusák	Non-destructive inspection of building materials by the method of impedance spectroscopy. Supervised by doc. RNDr. Pavel Schauer, CSc.
FCE	Ing. Pavel Svoboda	3D-behaviour of steel-concrete coupled bridges. Supervised by prof. Ing. Jiří Stráský, DrSc.
FCE	Mgr. Miroslav Luňák	Model and interpretation of impedance spectroscopy of building materials. Supervised by doc. RNDr. Pavel Schauer, CSc.
FCE	Ing. Petr Hudec	Using industrial waste in a new silicate system for concrete protection and maintenance. Supervised by Ing. Vladimír Tichomirov, CSc.
FCE	Ing. Libor Švaříček	Designing floorboards – selected problems (structural design, defects and failures, maintenance). Supervised by prof. RNDr. Ing. Petr Štěpánek, CSc.
FCE	Ing. Petr Hradil	Analysing the impact of semi-rigid mechanical joints in wooden structures. Supervised by doc. Ing. Bohumil Straka, CSc.
FCE	Ing. Lukáš Kunc	Stability of a wooden structure during driving. Supervised by Ing. Ferydun Nazari, CSc.
FCE	Ing. Martin Mohapl	Analysing contact insulating systems – technology and comprehensiveness. Supervised by Mgr. Petr Lízal, CSc.
FCE	Ing. Miroslav Špano	Modelling flows in graded water-chutes of safety spillways of hydraulic structures. Supervised by doc. Ing. Vlastimil Stara, CSc.
FCE	Ing. Tomáš Hanák	Modelling optimal structures of financial coverage of damages to insured constructions. Supervised by doc. Ing. Alena Tichá, Ph.D.
FCE	Ing. Petr Skála	Mathematical and economic modelling of construction work prices. Supervised by doc. Ing. Alena Tichá, Ph.D.
FCE	Ing. Eva Vítková	Setting up a model of building project cost management as part of the management accounting of a building company. Supervised by doc. Ing. Alena Tichá, Ph.D.
FCE	Ing. Petr Suchánek	Modelling the light arrays of buildings with light guides. Supervised by Ing. Jitka Mohelníková, Ph.D.
FCE	Ing. Tomáš Černický	Influence of a low-frequency electromagnetic field on the internal climate and constructional design of buildings. Supervised by doc. Ing. Miloslav Novotný, CSc.
FCE	Ing. Oldřich Tomíček	Rehabilitation of damp masonry – chemical method, influence, efficiency, properties. Supervised by doc. Ing. Miloslav Novotný, CSc.
FCE	Ing. Andrea Večerková	Determining selected characteristics of municipal waste dumps. Supervised by Ing. Jan Šálek, CSc.

FCE	Ing. Jan Fojt	Experimental testing of the rheological properties of concrete elements subjected to shear stress. Supervised by doc. Ing. Jaroslav Navrátil, CSc.
FCE	Ing. Pavel Juránek	Analysis of the possibilities of additionally strengthening the structural elements by external reinforcement using fabric. Supervised by prof. Ing. Jiří Adámek, CSc.
FME	Ing. Petr Horák	Study of degradability and metastability in organosilicon materials. Supervised by RNDr. Petr Schauer, CSc.
FME	Ing. Lubomír Král	Thermodynamic and diffusion characteristics of the Fe-C-Mn system. Supervised by RNDr. Jiří Čermák, CSc.
FME	Ing. Pavel Miček	Design and optimisation of the parameters of a pantographic leg of a robot. Supervised by doc. RNDr. Ing. Tomáš Březina, CSc.
FME	Ing. Jiří Pulkrábek	Modelling the dynamic properties of multi-drive systems with serially arranged electric motors. Supervised by prof. Ing. Ctirad Kratochvíl, DrSc.
FME	Ing. Jiří Tošovský	Determining the mechanical properties of a backbone element with a MACSTL – Twin Screw fixator. Supervised by Ing. Zdeněk Florian, CSc.
FME	Ing. Enkhtsogt Nyamjav	Nonlinear mathematical simulation of controlling a two-axis vehicle (on an inclined plane). Supervised by prof. Ing. František Vlk, DrSc.
FME	Ing. Daniel Dušek	Modelling the mechanics of human hearing by FEM. Supervised by doc. RNDr. Karel Pellant, CSc.
FME	Ing. Zdeněk Hadaš	Microgenerator as a micromechanical system. Supervised by doc. Ing. Vladislav Singule, CSc.
FME	Ing. Jan Abraham	Methods of deploying the approaching services of air traffic control in the Czech Republic. Supervised by prof. Ing. Dušan Kevický, CSc.
FME	Ing. Pavel Bareš	Analysis of crack propagation over a joint of two different materials. Supervised by prof. RNDr. Zdeněk Knésl, CSc.
FME	Ing. Petra Cihlářová	Increasing the cutting power of high-speed-tool steels based on PVD-coating and use of modern cutting coolants. Supervised by doc. Ing. Miroslav Píška, CSc.
FME	Ing. Tomáš Drga	Technological, polymer-oriented solution of injection tools. Supervised by doc. Ing. Miroslav Maňas, CSc.
FME	Ing. Antonín Dvořák	Branched lubricating systems and their flow situations – tribologic-hydraulic aspects. Supervised by doc. RNDr. Ing. Josef Nevrlý, CSc.
FME	Ing. Petr Dvořák	Reducing the undesirable substances in energogas from biomass gasification in an atmospheric fluid layer. Supervised by doc. Ing. Ladislav Ochrana, CSc.

FME	Ing. Matěj Forman	Modelling combustion and ignition. Supervised by prof. Ing. Miroslav Jícha, CSc.
FME	Ing. Ivo Lána	Out-of-furnace treatment of alloy produced in a cupola furnace aiming to improve the metallurgic quality of casts. Supervised by doc. Ing. Jaroslav Šenberger, CSc.
FME	Ing. Petr Matyáš	Introducing the system of quality in air traffic operators. Supervised by prof. Ing. Dušan Kevický, CSc.
FME	Mgr. Jana Procházková	Modelling mathematical surfaces in CAD systems. Supervised by doc. PaedDr. Dalibor Martišek, Ph.D.
FME	Ing. Pavel Slezák	Analysing the possibilities of reducing the emissions of an incineration-plant boiler using computer modelling. Supervised by doc. Ing. Zdeněk Skála, CSc.
FME	Ing. Jan Šplíchal	Analysis and calculation of the deformation of an airplane during emergency landing using an FEM system for large MSC.Dytran deformations. Supervised by doc. Ing. Zdeněk Vondrák, CSc.
FME	Ing. Karel Švaříček	Using numeric simulations and neural networks to improve the routing method for determining the residual stress. Supervised by doc. Ing. Miloš Vlk, CSc.
FME	Ing. František Vaněk	Analysis of aircraft-load calculation for automation and software development using the state-of-the-art software and hardware. Supervised by doc. Ing. Miroslav Vondrák, CSc.
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Published by BUT in 2008,
editor PhDr. Jitka Vanýsková,
design Kristýna Greplová, DTP dagmarah@email.cz,
printed by Expodata-Didiot, 450 copies.