## CONTENT

I. Introduction 3

II. Areas of activities at the FIT BUT in 2002

| II.1 Study programme – First-Level Study and Bachelor’s Study Programme | 8 |
| II.2 Creative Activities, Research and Postgraduate Doctoral Study | 10 |
| II.3 International Relations | 18 |
| II.4 Lifelong Education | 20 |
| II.5 Dislocation, Modernization and Faculty Development | 21 |
| II.6 Library | 22 |
| II.7 Academic Senate - Annual Report 2002 | 23 |
| II.8 Student Organizations | 25 |

III. Departments at the FIT BUT in 2002

- Department of Information Systems 27
- Department of Intelligent Systems 35
- Department of Computer Graphics and Multimedia 45
- Department of Computer Networks 53
- Computer Centre 67
ANNUAL REPORT 2002

FACULTY OF INFORMATION TECHNOLOGY
BRNO UNIVERSITY OF TECHNOLOGY

I. INTRODUCTION

Brno University of Technology (BUT) is the second largest and the second oldest technical university in the Czech Republic. It was founded in 1849 for technical, agricultural and commercial specialization. The languages of instruction were Czech and German. As a consequence of political and national disputes, Czech ceased to be used as language of tuition and in 1899 the Czech High Technical School was founded in Brno. After World War I and the foundation of Czechoslovakia, the school merged with the German Technical High School (originally bilingual) to form the High Technical School in Brno, which later carried the name of Dr. Edvard Beneš, the second president of Czechoslovakia. In the period between World War I and World War II this school was among the best technical universities in Europe.

During World War II the school was, as all other high schools were, closed and the premises were used by German military institutions, and most equipment was destroyed. Immediately after the end of World War II the activities of the school were resumed. In 1951, the Technical High School was closed and the departments became parts of the newly established Military Technical Academy. Tuition for civilians continued at the former faculty of civil engineering only. However, it soon became evident that the technical university should be re-established. Since 1956 the school gradually started its activities in various fields.

The Faculty of Information Technology (FIT) at Brno University of Technology was established on 1st January 2002 from the former Department of Computer Science and Engineering, Faculty of Electrical Engineering and Computer Science, Brno University of Technology. The Department of Computer Science and Engineering (DCSE) was established in 1964. Further development of the Department was related to the dynamic development in the area of computer science and its applications, called informatics. The ever-increasing demands on specialists in this area determined the extent and orientation of the teaching, research tasks and joint projects and they also influenced the increase in number of students and staff of the Department. The increasing importance of teaching informatics at the faculty brought a transformation to the Faculty of Electrical Engineering and Computer Science (FEECS) in 1993 and separation of the computer science study plans from the rest not later than after the 1st semester of the common study programme.

At the end of the millenium the importance of the DCSE and the ratio of informatics in teaching exceeded the organizational, technical and financial limits so that the transformation of the DCSE into a new faculty could be launched. A number of historical decisions were taken at the FEECS in 2001 in connection with the planned foundation of a new Faculty of Information Technology (FIT) and transformation of the Faculty of Electrical Engineering and Computer Science (FEECS) into the Faculty of Electrical Engineering and Communication (FEEC). The Academic Senate of BUT approved the establishment of the faculty to 1st January 2002. The uneasy task of working out new study programmes for both
faculties for accreditation was rewarded by unanimous approval of new study programmes for both faculties by the Accreditation Board of the Ministry of Education of the Czech Republic and its consent with the foundation of the new faculty. In case of the FIT it was a three-year Bachelor's study programme, and a follow-up two-year Master's study programme. Organizational and economic activities related to the foundation of the FIT and transformation of the FEECS into the FEEC were crowned by the decision of the Rector of BUT to appoint Prof. Ing. Radimír Vrba, CSc., Dean of the FEEC and Prof. Ing. Tomáš Hruška, CSc., Dean of the FIT to 1st January 2002. Thus ended the existence of the original Faculty of Electrical Engineering with all its authorities and structures.

BUT was directed by Prof. Ing. RNDr. Jan Vrbka, DrSc. in the last year of his first three-year term of office, the former Dean of the Faculty of Mechanical Engineering, who was re-elected Rector of BUT for another three years by the Academic Senate of BUT in November 2002. He entered the second term of office in February 2003. Doc. Ing. František Zbořil, CSc., a member of the Department of Intelligent Systems, was re-elected chairman of the Academic Senate of BUT. Ing. Jaroslav Švec, a student of postgraduate doctoral study at the FIT was elected chairman of the Students’ Chamber of the Academic Senate of BUT.

During the 2nd session of the Academic Senate of the FIT on 15th January 2002, Prof. Ing. Tomáš Hruška, CSc. was elected unanimously the new Dean of the FIT and he appointed 4 Vice-Deans. The Dean of the faculty is elected and the Vice-Deans are approved by the Academic Senate of the faculty for a three-year term of office. The Vice-Deans are in charge of research and creative activities, international and external relations and campus development together with the relevant Dean’s Office Departments. The Scientific Board, the Pedagogical Council and the Disciplinary Board are the Dean’s advisory bodies. The Faculty Secretary is responsible for faculty organization, development and economic issues, which are carried out by the relevant Dean’s Office Departments. In 2002 there was teaching staff of 30 members and 849 students in all state-supported study programmes.

In the first year of the three-year term of office the Faculty management included:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Ing. Tomáš Hruška, CSc.</td>
<td>Dean</td>
</tr>
<tr>
<td>Prof. RNDr. Milan Češka, CSc.</td>
<td>Vice-Dean, Science and Research</td>
</tr>
<tr>
<td>Prof. Ing. Jan M. Honzík, CSc.</td>
<td>Vice-Dean, Public Relations</td>
</tr>
<tr>
<td>Doc. Ing. Vladimír Drábek, CSc.</td>
<td>Acting Dean</td>
</tr>
<tr>
<td>Ing. Zdeněk Bouša</td>
<td>Vice-Dean, Education</td>
</tr>
<tr>
<td></td>
<td>Vice-Dean, Campus Development</td>
</tr>
</tbody>
</table>

On 1st January 2002, after winning a competition, Ing. Zdeněk Bouša acceded the office of the Faculty Secretary. Doc. Ing. Jaroslav Zendulka, CSc., Head of the Department of Information Systems, was elected the Chairman of the Academic Senate of the FIT. Ing. Petr Lampa, Head of the Computer Centre FIT BUT, was elected the first Vice-Chairman of the Academic Senate of the FIT. Stanislav Chromčák, a student of BUT, was elected the second Vice-Chairman of the Academic Senate of the FIT, and also the President of the Student Union FIT BUT. Ing. Josef Schwarz, CSc., became the Trade Union representative in the faculty management.
In the first year the faculty consisted of four departments and the Computer Centre:

- Department of Information Systems
- Department of Intelligent Systems
- Department of Computer Graphics and Multimedia
- Department of Computer Systems
- Computer Centre

In 2002, the FIT continued tuition in two running out Bachelor’s and Master’s study programmes Electrical Engineering and Computer Science (EI), registered in 1999 according to University Education Act. These current study programmes will probably continue until the end of the academic year 2006/2007. In 2002, the FIT also provided tuition in the doctoral study programme Information technology (DIT). In 2002/2003 a new three-year Bachelor’s study programme Information technology was introduced to the faculty. In 2005/2006 a two-year follow-up Master’s study programme Information Technology will be launched. These new study programmes correspond to the Bologna Declaration on European Education Area and their structure is fully compatible within Europe.

**Study programmes taught at the FIT in 2002:**

*Bachelor’s study programme Electrical Engineering and Computer Science*
Nominal length of study: 3.5 years
Line of study  
Computer Science and Engineering

*Master’s study programme Electrical Engineering and Computer Science*
Nominal length of study: 5 years
Line of study  
Computer Science and Engineering

*Doctoral study programme*
Nominal length of study: 3 years (internal form) or 7 years (combined form )
Line of study  
Information Technology (DIT)

*New Bachelor’s study programme Information Technology*
Nominal length of study: 3 years
Line of study  
Information Technology (BIT)

*New follow-up Master’s study programme Information technology will be launched at the FIT in 2005/2006 with the following specializations:*

- Information Systems (MIS)
- Computer Graphics and Multimedia (MGM)
- Intelligent Systems (MIN)
- Computer Systems and Networks (MPS)

In 2002, 5 Bachelors, and 100 students of the five-year Master’s study programme graduated at the FIT. Two students completed the PhD. study programme. 341 new students entered the first year of internal study, 21 students entered the postgraduate doctoral study, all in the internal form, and there was one foreign PhD. student. In 2002, tuition in English
was provided for 11 foreign students who pay their tuition fees. One member of the academic staff, Prof. Ing. Miroslav Švéda, CSc. from the Department of Computer Systems, completed the habilitation proceedings.

The most significant events and activities, which influenced the life at the Faculty, were:

- Accreditation Board of the Ministry of Education of the Czech Republic approved the establishment of the new Faculty of Information Technology (FIT) to 1st January 2002
- elections to the Academic Senate of the FIT on 7th January 2002
- inauguration of the new faculty management on 1st January 2002
- Open Day at the FIT BUT on 15th January 2002,
- the traditional faculty ball organized at a high level in the new BUT Centre, on 25th January 2002
- work on the innovation of the long-term development of BUT
- work on the innovation of the long-term faculty intention
- activities of the pedagogical staff of the FIT related to the new study programmes
- inauguration ceremony at the Faculty of Information Technology which took place on 16th September 2002, together with the opening of the new lecture halls at 2, Božetěchova Street, a computer laboratory donated by Siemens and new computer laboratories in the reconstructed former gymnasium
- in 2002, 5 projects of the Grant Agency of the Czech Republic (GACR) and 10 projects of the University Development Fund (FRVS) completed at the FIT were accepted
- Doc. Dr. Ing. Pavel Zemčík was involved in co-operation of the FIT and TEI Crete on the “Intensive programme“ within the framework of SOCRATES and on the Master's study programme
- participation at the fair GAUDEAMUS 2002 with presentations of new study programmes
- activities of pedagogical staff connected with information sessions at different types of secondary schools
- Final State Examinations
- first graduations at the FIT, on 24th July 2002
- activities of Prof. RNDr. Milan Češka, CSc., Vice-Dean for Science and Research, and Doc. Ing. Vladimír Drábek, CSc., Vice-Dean for Education concerned with transformation of study plans aiming at a wider choice of optional courses
- successfully completed admission of first year students for internal studies for a degree as well as for doctoral studies
- first immatriculation of first-year students at the FIT
- Doc. Ing. Zdeněk Kotásek, CSc., organization of IEEE Design and Diagnostics of Electronics Circuits and Systems, a conference held from 17th to 19th April 2002
- activities of Doc. Ing. Vladimír Drábek, CSc. and Ing. Miloš Eysselt concerned with defining the mechanism for internal and inter-faculty distribution of funds for tuition (especially FIT / FEEC) and mutual payment for tuition
- activities of Prof. Ing. Jan M. Honzík, CSc., Vice-Dean for Public Relations related to his office of the National Co-ordinator EUA-ECTS/DS
- activities of Prof. Ing. Jan M. Honzík, CSc. aimed at completion of the current research project, at creation of a future inter-faculty research project, and at a
development programme implementing the Bologna process under the conditions of the new faculty

- activities of Ing. Zdeněk Bouša, Vice-Dean for Campus Development, focused on dislocation issues, mainly the general dislocation and investment issues, and the faculty capacity for tuition, especially the reconstruction and completion of the lecture rooms, the reconstruction of the south premises and the transport system at the premises of the FIT in Božetěchova Street
- activities of Ing. Zdeněk Bouša, Vice-Dean for Campus Development, concerned with increasing the economic parameters of the faculty budget aimed at maximum increase of the pay for the academic staff of the FIT
- activities of the AS members, mainly Doc. Ing. Jaroslav Zendulka, CSc. and Ing. Petr Lampa, focused on faculty organization, development, and economic issues
- activities of the work group involved in creation of an electronic information system at the FIT aiming at transforming all agendas at the FIT (especially the study agenda) gradually into the electronic form
- activities related to research projects
- election of the candidate for the position of the Rector of BUT
- CSEW 2002 (Computer Science Education Workshop), from 7th to 8th November 2002 at the premises of Žilina University in Súľov, Slovak Republic. Prof. Ing. Tomáš Hruška, CSc., Doc. Ing. Vladimír Drábek, CSc. and Doc. Ing. Jiří Kunovský, CSc. took part in the traditional meeting of Departments of Computer Science and related areas.

On behalf of the management of the Faculty of Information Technology BUT I wish all members of academic staff, students, and all employees of the faculty favourable working conditions, and success in their efforts for a further development of the FIT. At the same time I thank all employees who contributed to the functioning of the FIT in its first year of existence, for the extraordinary efforts devoted to the foundation of the FIT, and for mutual understanding, solidarity, and wisdom they showed when seeking solutions to difficult problems.

Prof. Ing. Tomáš Hruška, CSc.
Dean of the FIT BUT
II. AREAS OF ACTIVITIES AT THE FIT BUT IN 2002

II.1 Study Programme –

First-Level Study and Bachelor's Study Programme

At the end of 2002, there were 1081 students studying at the FIT in all study programmes including the doctoral one. See the following table:

<table>
<thead>
<tr>
<th>Specialization</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI-MGR-5, VTI</td>
<td>664</td>
</tr>
<tr>
<td>IT-BC-3</td>
<td>331</td>
</tr>
<tr>
<td>IT-DR-3</td>
<td>86</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1081</strong></td>
</tr>
</tbody>
</table>

In 2002 the first admission process for the three-year Bachelor's study programme Information Technology, accredited at the FIT on 2nd January 2002, took place. As the new study programme Information Technology is linking up well to the tradition of the running out study programme Electrical Engineering and Computer Science with the specialization Computer Science and Engineering, we can compare the numbers of students interested in the specialization in the following table:

<table>
<thead>
<tr>
<th>Academic year</th>
<th>Applicants</th>
<th>Admitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996/97</td>
<td>229</td>
<td>120</td>
</tr>
<tr>
<td>1997/98</td>
<td>251</td>
<td>130</td>
</tr>
<tr>
<td>1998/99</td>
<td>245</td>
<td>140</td>
</tr>
<tr>
<td>1999/00</td>
<td>212</td>
<td>120</td>
</tr>
<tr>
<td>2000/01</td>
<td>200</td>
<td>129</td>
</tr>
<tr>
<td>2001/02</td>
<td>468</td>
<td>280</td>
</tr>
<tr>
<td>2002/03</td>
<td>2145</td>
<td>340</td>
</tr>
</tbody>
</table>

*) „2145“ is the number of applications. Until the academic year 2001/2002 the students had not been specialized sooner than at the end of the first semester, in fact, they were students who had already been admitted to the faculty.

The admission process at the FIT took place from 10th to 12th June 2002, with the backup date of 8th July. 2145 applicants participated in it. The entrance examinations were only gently adapted and consisted of two written examinations – one in mathematics (MAT) and the other, optionally, either in physics (FYZ) or in fundamentals of informatics (INF). 23% applicants chose physics and 77% informatics. 87% of the total number of applicants turned up to sit for the entrance examination. The maximum possible number of points was 25 per one written examination. The limit for admission was 44 points minimum out of 50 points. Those who were to be admitted had to achieve a total of 25 points minimum, mathematics 10 points min, physics 6 points min., and informatics 10 points min.
Total numbers:

Admitted: 448
Registered: 340
Refused (lack of capacity): 1114
Failed: 297
Absent: 281
Admitted after appeal and revision: 5 applicants
10 graduated applicants (MSc. or Bc.) were admitted without the entrance examination
Applicants for admission at the FIT were successful by 21%.

Written examinations statistics:

MAT: 1864 examinees, average 17.74, deviation 5.38
FYZ: 403 examinees, average 16, deviation 6.21
INF: 1460 examinees, average 18.61, deviation 4.62
Total: average 35.77, deviation 9.13

Comprehensive Examinations and the Second-Level Study

The limit of weighted study average, which makes an exemption from the examination possible, was set to be 2,5 in 2001/02. The total of 27 students applied for the comprehensive examination, 19 students came to sit for it, 13 students passed it, 5 of whom defended the Bc. Degree. The total number of students entering the second level of study was 95. The structure of the oral part of the Final State Examination was modified. Two themes were settled: Hardware and Software. Besides the defence of the thesis each student had to answer one question from each of the two themes. 100 undergraduates passed the Final State Examination.

<table>
<thead>
<tr>
<th>Specialization</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE</td>
<td>77</td>
<td>96</td>
<td>107</td>
<td>100</td>
</tr>
</tbody>
</table>

Doc. Ing. Vladimír Drábek, CSc.
Vice-Dean for Education
II.2 Science, Research and Postgraduate Doctoral Study

The new faculty continues in the tradition of basic and applied research in the area of computer hardware, software, prototypes of computer systems, and application of information technology in practical life. The main research areas at the FIT BUT in 2002 were the following:

- Information Systems
- System Modelling and Simulation
- Artificial Intelligence
- Computer Graphics and Multimedia
- Computer Architecture
- Speech Processing
- High Performance Computing
- Petri Nets

Regarding the research activities at the FIT, some important events which could influence the faculty development in coming years are listed below:

- Application for extension of the Research Project MSM262200012 till 2004 and discussions on the conception, content and staffing of a new inter-faculty research project.
- Formation of a co-ordination group that should help to increase the number of grants and projects the faculty will be involved in, including the EU ones.
- Obtaining the prestige international grant *Multimodal meeting manager* dealt with in the framework of IST (Information Society Technology) in the 5th framework programme.
- Elaboration of six Expression of Interest documents, which formed basis for setting the priorities of the 6th framework programme by the European Commission and for possible involvement of the faculty staff in projects such as Excellence Network and Integrated Projects.
- An offer of seven research projects for co-operation with the well-recognized research institute Fraunhofer Gesellschaft (SRN).
- The information system of the faculty, which helps to improve the quality of its research infrastructure, was created. (A substantial part of this report has also been generated as an output of the mentioned information system.)
- Two habilitations have been started in the area of Computer Science and Engineering
II.2.1 Habilitations in 2002

Name: Prof. Ing. Miroslav Švéda, CSc.
Department: UPSY FIT VUT
Area: Computer Science and Engineering
Date: 15th May 2002

II.2.2.1 European Union Projects at the FIT in 2002

<table>
<thead>
<tr>
<th>Agency</th>
<th>Theme</th>
<th>Project Code</th>
<th>Name of the Project</th>
<th>Total in thous. CZK</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-HLT</td>
<td>IST</td>
<td>2001-34485</td>
<td>Multi Modal Meeting Manager</td>
<td>2 257</td>
</tr>
</tbody>
</table>

II.2.2.2 Grant Agency (GAČR) Projects at the FIT in 2002

<table>
<thead>
<tr>
<th>GAČR</th>
<th>Name of the project</th>
<th>Total in thous. CZK</th>
</tr>
</thead>
<tbody>
<tr>
<td>102/00/1017</td>
<td>Modelling, verification and prototyping of distributed applications using Petri nets</td>
<td>496</td>
</tr>
<tr>
<td>102/01/1531</td>
<td>Formal methods of diagnosing digital circuits – testable design verification</td>
<td>472</td>
</tr>
<tr>
<td>102/01/1485</td>
<td>Medium for development, modelling and application of heterogeneous systems</td>
<td>626</td>
</tr>
<tr>
<td>102/02/0507</td>
<td>Computer graphics algorithms with FPGA support</td>
<td>789</td>
</tr>
<tr>
<td>102/02/0124</td>
<td>Voice technologies for support of information society</td>
<td>256</td>
</tr>
<tr>
<td>102/02/0503</td>
<td>Parallel system performance prediction and tuning</td>
<td>232</td>
</tr>
<tr>
<td>102/02/1032</td>
<td>Embedded control systems and their inter-communication</td>
<td>309</td>
</tr>
<tr>
<td>102/01/D141</td>
<td>Development in the area of human tissues FEM models creating for biomechanics applications</td>
<td>154</td>
</tr>
<tr>
<td>102/02/D108</td>
<td>Data-driven and anthropic coding and recognition of speech</td>
<td>86</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>3 420</strong></td>
</tr>
</tbody>
</table>
II.2.2.3 University Development Fund (FRVŠ) Projects at the FIT in 2002

<table>
<thead>
<tr>
<th>FRVŠ</th>
<th>Theme</th>
<th>Name of the project</th>
<th>Total thous. CZK</th>
</tr>
</thead>
<tbody>
<tr>
<td>MŠMT</td>
<td>F1</td>
<td>Intelligent systems – preparation of a course</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>F1</td>
<td>Doctoral study programme – Information Technology at BUT</td>
<td>162</td>
</tr>
<tr>
<td></td>
<td>F1</td>
<td>Enhancement and superior practice education project management course</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>G1</td>
<td>PNdalk system for application prototyping</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>G1</td>
<td>Efficient methods of solving large systems of linear algebraic equations</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>G1</td>
<td>Methods of formal analysis and verification in Object-Oriented Petri nets</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>G1</td>
<td>Modern methods of language parsing</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>G1</td>
<td>Knowledge discovery for similarity search in multimedia databases</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>G1</td>
<td>Evolution approaches to digital circuit testability enhancement</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>1 002</td>
</tr>
</tbody>
</table>

II.2.2.4 Research Project at the FIT in 2002

Research project MSM262200012, Prof. Ing. Jan M. Honzík

<table>
<thead>
<tr>
<th>Research project</th>
<th>Name of the project</th>
<th>Total thous. CZK</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM262200012</td>
<td>Research of information and control systems at the FIT</td>
<td>5 201</td>
</tr>
<tr>
<td>MSM262200012</td>
<td>Research of information and control systems at the FEEC DCI</td>
<td>1 157</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>6 358</td>
</tr>
</tbody>
</table>

The research project is aimed at research of theoretical and applied methods of design, verification, implementation and evaluation of information and control systems and their components covering both hardware and software. The research is directed into three areas which correspond to logical levels of the architecture of the control systems and the management support systems:

- Area of information systems and support to the management level
- Area of communication, control algorithms and process and control systems
- Data acquisition and evaluation
The whole research field is divided into the following eight areas, which are the subjects and partial aims of the research project:

- Methods and tools for system modelling
- Technology and design of information systems
- Computer graphics and multimedia in information and control systems
- Architecture of software and hardware in imbedded systems
- Computer-aided control
- Computer networks and systems of industrial automation
- Computer vision
- Sensors, digital processing and computer analysis of measured signals

Seven research teams were involved in research of individual areas (Computer graphics and Computer vision together).

The research teams included 7 professors (2850 hrs.), 15 associate professors (7440 hrs.), 43 other staff (18690 hrs.) and 63 doctoral students.

In BUT internal evaluation of research projects, this one was among the top seven projects. All evaluated aspects received the highest mark. The State Commission classified the research project as “B“.

The main target for the coming research period is to enrich the contemporary standard of knowledge in the explosively developing discipline of information and industrial technologies through new ideas and innovations. This is supported by the structure of the research teams, their management and regular evaluation. In 2002 transformation of the research project into an inter-faculty project had to be prepared as a consequence of the origin of the new FIT and the Department of Control and Instrumentation (FEEC).

The management of the project will have to be changed. The main target of the team in the following period will be a detailed analysis of achieved results, critical evaluation of the organizational structure aimed at preparing favourable conditions for further research projects of the FIT and considering the efficiency and benefits of the inter-faculty research project for both faculties.

The project management headed by the investigator uses its own methodology to guarantee stable quality of the research work under changing rules, and provides general information for internal evaluation and comparison of all members of the research team. One part of this methodology is a detailed internal annual report. (http://www.fit.vutbr.cz/research/vzamer).
II.2.2.5 Survey of Other Projects at the FIT in 2002

<table>
<thead>
<tr>
<th>Agency</th>
<th>Theme</th>
<th>Project Code</th>
<th>Name</th>
<th>Total Thous. CZK</th>
</tr>
</thead>
<tbody>
<tr>
<td>MŠMT</td>
<td>MŠMT DCI</td>
<td>20159</td>
<td>Preparing of documents for accreditation of Bc study programme &quot;Information Technologies&quot; in the distant mode</td>
<td>6 817</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Programme supporting the implementation of the Bc study programmes as the expression of endorsement of Bologna declaration</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Developing programme for specified study programmes</td>
<td></td>
</tr>
<tr>
<td>MŠMT</td>
<td>MMI</td>
<td>20056</td>
<td>Advanced techniques for acoustic modelling in speech recognition</td>
<td>270</td>
</tr>
<tr>
<td>MŠMT</td>
<td>MMI</td>
<td>20059</td>
<td>IMPIT – International students mobility</td>
<td>210</td>
</tr>
<tr>
<td>European Committee Phare</td>
<td>Regional developme nt</td>
<td>00-0047</td>
<td>InterpRISe – Interregional co-operation for promoting regional innovation strategies (RIS) in Europe</td>
<td>282</td>
</tr>
<tr>
<td>MVČR</td>
<td>RNI</td>
<td>23002</td>
<td>Co-operations of universities in supporting the state struggle with computer crime</td>
<td>90</td>
</tr>
<tr>
<td>NBU</td>
<td>STI</td>
<td>20002</td>
<td>Development of secure key storage device</td>
<td>1 209</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>8 878</strong></td>
</tr>
</tbody>
</table>

II.2.2.6 Survey of external sources in funding creative activities at the FIT in 2002

<table>
<thead>
<tr>
<th>Source</th>
<th>Project</th>
<th>Number of projects</th>
<th>Total Thous. CZK</th>
</tr>
</thead>
<tbody>
<tr>
<td>MŠMT</td>
<td>Research projects</td>
<td>1</td>
<td>5 201</td>
</tr>
<tr>
<td>MŠMT</td>
<td>FRVŠ projects</td>
<td>9</td>
<td>1 002</td>
</tr>
<tr>
<td>MŠMT</td>
<td>Other MŠMT projects</td>
<td>3</td>
<td>7 297</td>
</tr>
<tr>
<td>GAČR</td>
<td>GACR projects</td>
<td>9</td>
<td>3 420</td>
</tr>
<tr>
<td>EU</td>
<td>Projects of 5th framework programme of the EU</td>
<td>1</td>
<td>2 257</td>
</tr>
<tr>
<td>NBU</td>
<td>National Security Authority projects</td>
<td>1</td>
<td>1 209</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>20 386</strong></td>
</tr>
</tbody>
</table>
II.2.3. PhD. Doctoral Study Programme

The doctoral study programme Information Technology with one specialization of the same name was started at the same time as the FIT BUT – 1st January 2002. The first step meant accepting a part of students specialized in Cybernetics and Computer Science from the FEECS. In June 2002 the first admission process took place.

The content and organization of the study resumes the ideas and good experience with the education of PhD. students at the FEECS BUT. The main tasks solved in this area in 2002:

- Offer of a wide choice of courses at a high professional level, a well-balanced combination of theory and applications of IT, and availability of detailed descriptions of the individual courses (in Czech and English) on the Internet for both present and future students.
- Co-operation with the FEEC BUT and the Faculty of Informatics, Masaryk University in Brno as far as the offer of courses, organization of the State Doctoral Examinations, and defenses of dissertations are concerned
- Providing study literature for the PhD. study programme, mainly with the use of financial resources coming from the FRVS project: PhD. study programme Information Technology at BUT, worth 132 thousand CZK.
- Consistent checking of the study plans of PhD. students followed by differentiated payment or even their dismission from the PhD. study programme (in three cases).
- Record of dissertation theses and offer of new themes through the Faculty Information System.
PhD. study statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of study</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>internal</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>combined</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>internal</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>combined</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>internal</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>combined</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>internal</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>combined</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>combined</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>combined</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>combined</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>86</td>
</tr>
</tbody>
</table>

II.2.3.1. PhD. theses defended in 2002

Doctoral student Ing. Richard Růžička.
Study area Information technology
Thesis RTL testability analysis of digital circuits – a formal approach
Defended on 11th November 2002

Doctoral student Ing. Lukáš Sekanina
Study area Information Technology
Thesis Component Approach to Evolvable Systems
Supervisor Doc. Ing. Vladimír Drábek, CSc.
Defended on 11th November 2002

Prof. RNDr. Milan Češka, CSc.
Vice-Dean for Science and Research
II.2.4. Student creativity

The student creativity at the FIT was based on long tradition and experience. Student conferences and competitions in computer science and information technology have been organized annually since 1972.

Though the FEECS split into the FIT and FEEC, the competition is held under the name STUDENT EEICT (Electrical Engineering, Information and Communication Technologies) for students of both faculties.

In 2002, the student conference took place on 25th April at the premises of BUT Under Palacky Hill. It was opened by the Deans of both faculties: Prof. Ing. Tomáš Hruška, CSc., (FIT) and Prof. Ing. Radimír Vrba, CSc., (FEEC) in the presence of Prof. RNDr. Ing. Jan Vrbka, DrSc., Rector of BUT and Doc. Ing. Eva Münster, CSc., Vice-President of the Czech Council of Higher Education Institutions and President of a committee for student creativity. Presentations of leading companies which sponsored the conference were followed by a display and evaluation of competing posters by doctoral students. Master's study programme participants from the FIT defended their work in the following specializations: information systems, theoretical informatics, modelling, graphics and hardware. Evaluation committees were formed by academics, sponsors and representatives of the Student Union. After presentations the committees chose the best contributions and suggested the financial reward for the individual authors. Thus the academic approach, attractiveness for industry and students' viewpoint were encompassed. There were 22 competitors from the PhD. study programme and 26 students of the Master's study programme of the FIT present. All contributions were successfully reviewed and were shortened and published in the Proceedings of the Conference. The electronic version of the proceedings can be found on the Internet and CDs. The final ceremony took place after all committees had completed their work and the Rector Prof. RNDr. Ing. Jan Vrbka, DrSc. and the Vice-Rector Prof. Ing. Jiří Kazelle, CSc. awarded the prizes to the winners. Sponsoring companies awarded prizes to authors of selected works, too.

Let us hope that the students' competitions will take place in future as a unique motivation for student creativity work.

The importance of the student creativity is extremely high in case of our young faculty as a considerable number of winners enter the PhD. study programme and several most outstanding graduates become new young members of the academic staff of the faculty.

II.3 International Relations

International activities at the FIT are dealt with by the following group: the Vice-Dean, his assistant and two teachers with considerable international experience. (Doc. Dr. Ing. P.Zemčík and Dr. Ing. J.Černocký). International activities are focused on support of international mobility of both students and teachers, on organizing and offering tuition to foreign students who pay their tuition fees and on information and reference service. In 2002, there were bilateral agreements between the faculty and 9 foreign universities in the framework of SOCRATES ERASMUS Programme and 23 students spent some time at study stays abroad.

Doc. Dr. Ing. P.Zemčík lectured and two students (Mr. Chromčák and Mr. Šimek) participated in the Summer School in the framework of the SOCRATES Project "Intensive Program Project in Informatics and Multimedia" at TEI Heracleion, Crete (Greece).

The following table lists foreign partners which had active bilateral agreements with the new FIT within the framework of SOCRATES.

<table>
<thead>
<tr>
<th>Country</th>
<th>University</th>
<th>Erasmus code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>Helsinki University of Technology <a href="http://www.hut.fi/English/">http://www.hut.fi/English/</a></td>
<td>FI ESPOO 01</td>
</tr>
<tr>
<td></td>
<td>Lappeenrannan University of Technology <a href="http://www.lut.fi/english.html">http://www.lut.fi/english.html</a></td>
<td>SF LAPPEEN 01</td>
</tr>
<tr>
<td></td>
<td>University of Joensuu <a href="http://www.joensuu.fi/englishindex.html">http://www.joensuu.fi/englishindex.html</a></td>
<td>SF JOENSUU 01</td>
</tr>
<tr>
<td>France</td>
<td>Ecole Supérieure d’Ingénieurs en Électrotechnique <a href="http://www.esiee.fr/">http://www.esiee.fr/</a></td>
<td>F NOISY 02</td>
</tr>
<tr>
<td>Germany</td>
<td>Fern Universitát Hagen <a href="http://www.fernuni-hagen.de">http://www.fernuni-hagen.de</a></td>
<td>D HAGEN 01</td>
</tr>
<tr>
<td>Portugal</td>
<td>Universidade de Trás-os-Montes e Alto Douro <a href="http://www.utad.pt">http://www.utad.pt</a></td>
<td>P VILA-RE 01</td>
</tr>
<tr>
<td>Spain</td>
<td>Manuel Barrio Solórzano, Depto de Informática <a href="http://www.uva.es/">http://www.uva.es/</a></td>
<td>E VALLADO 01</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>University of Surrey <a href="http://www.surrey.ac.uk">http://www.surrey.ac.uk</a></td>
<td>UK GUILDFO 01</td>
</tr>
<tr>
<td></td>
<td>University of Bristol <a href="http://www.bris.ac.uk">http://www.bris.ac.uk</a></td>
<td>UK BRISTOL 01</td>
</tr>
</tbody>
</table>

As a result of a cooperation agreement with the supra-national company ANF-Siemens Austria a new computer laboratory was opened and equipped by this partner company.
Students mobility at the FIT in 2002 - ERASMUS and others

Stays abroad

<table>
<thead>
<tr>
<th>Name</th>
<th>Stay</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roman Bednařík</td>
<td>1 - 8 / 2002</td>
<td>Finland Joensuu IMPIT</td>
</tr>
<tr>
<td>Vítězslav Beran</td>
<td>1 - 6 / 2002</td>
<td>UK Guildford</td>
</tr>
<tr>
<td></td>
<td>10 - 12 / 2002</td>
<td>UK Guildford (apart from ERASMUS)</td>
</tr>
<tr>
<td>Luděk Crha</td>
<td>2 - 6 / 2002</td>
<td>France ESIEE Paris</td>
</tr>
<tr>
<td>Michal Hronec</td>
<td>1 - 9 / 2002</td>
<td>Finland Joensuu IMPIT</td>
</tr>
<tr>
<td>David Navrátil</td>
<td>1 - 8 / 2002</td>
<td>Finland Joensuu IMPIT</td>
</tr>
<tr>
<td>Jan Pečiva</td>
<td>2 - 5 / 2002</td>
<td>UK Bristol</td>
</tr>
<tr>
<td></td>
<td>10 - 12 / 2002</td>
<td>UK Bristol (apart from ERASMUS)</td>
</tr>
<tr>
<td>David Pulkrábek</td>
<td>1 - 8 / 2002</td>
<td>Finland Joensuu IMPIT</td>
</tr>
<tr>
<td>Jaroslav Uher</td>
<td>1 - 9 / 2002</td>
<td>Finland Joensuu IMPIT</td>
</tr>
<tr>
<td>Ing. Radek Burget</td>
<td>10 - 12 / 2002</td>
<td>Spain Valladolid</td>
</tr>
<tr>
<td>Milan Holub</td>
<td>9 - 12 / 2002</td>
<td>UK Bristol</td>
</tr>
<tr>
<td>Jiří Horák</td>
<td>9 - 12 / 2002</td>
<td>UK Bristol</td>
</tr>
<tr>
<td>Zdeněk Vráblík</td>
<td>9 - 12 / 2002</td>
<td>Austria TU Graz</td>
</tr>
<tr>
<td>Ivo Zatloukal</td>
<td>8 - 12 / 2002</td>
<td>Finland Lappeenranta</td>
</tr>
<tr>
<td>Ing. Pavel Matějka</td>
<td>5-8 / 2002</td>
<td>USA OGI Oregon</td>
</tr>
<tr>
<td>Ing. Pavel Schwarz.</td>
<td>5-8 / 2002</td>
<td>USA OGI Oregon</td>
</tr>
<tr>
<td>Ing. Petr Motlíček</td>
<td>9-12 / 2002</td>
<td>USA OGI Oregon</td>
</tr>
<tr>
<td>Ing. František Grézl</td>
<td>9-12 / 2002</td>
<td>USA OGI Oregon</td>
</tr>
<tr>
<td>Ing. Ibrahim Abu Kteisch</td>
<td>10-12 / 2002</td>
<td>Finland TU Helsinki (apart from ERASMUS)</td>
</tr>
<tr>
<td>Ing. Tomáš Kašpárek</td>
<td>10-12 / 2002</td>
<td>UK Bristol (apart from ERASMUS)</td>
</tr>
<tr>
<td>Ing. Bohuslav Křena</td>
<td>10-12 / 2002</td>
<td>Bulgaria Sofia</td>
</tr>
<tr>
<td>Václav Šimek</td>
<td>7 / 2002</td>
<td>Greece TEI Chania</td>
</tr>
<tr>
<td></td>
<td>9 / 2002</td>
<td>Belgium KHO Oostende</td>
</tr>
<tr>
<td>Stanislav Chromčák</td>
<td>7 / 2002</td>
<td>Greece TEI Chania</td>
</tr>
</tbody>
</table>

Unlabelled stays: Finance SOCRATES/ERASMUS, MŠMT ČR and the mobility fund BUT IMPIT: International Masters Programme in Information Technology (finance – the government of Finland)

Visiting Students:

<table>
<thead>
<tr>
<th>Name</th>
<th>Stay</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pratibha Jain</td>
<td>10-11 / 2002</td>
<td>USA, OGI Oregon</td>
</tr>
<tr>
<td>Miika Lindfors</td>
<td>10 / 2002 – 1 / 2003</td>
<td>Finland LUT Lappeenranta</td>
</tr>
</tbody>
</table>
II.4 Lifelong Education

Doc. Ing. Jiří Kunovský, CSc. contributed to the programme of the Third Age University in the first semester by lecturing and organizing a computer workshop, and together with three doctoral students did his teaching in computer science in the first, second and third semesters.

The first stage of the three-year MSMT project “Preparation of distance form of Bachelor’s study programme Information Technology for accreditation” was worked on. This study programme focused on e-learning and computer-aided technologies can be used for lifelong education in future.

Some staff members of the FIT also provided a seminar in informatics for the fourth-year students of the secondary school in Kpt. Jaroše Street (regular two seminars in February) and of the secondary school in Slovanské nám. (regular two seminars in May).

They also provided all-year tuition of “Selected Parts of Informatics” for the secondary school in Vídeňská Street.

In co-operation with Application Software Brno the academics of the FIT also provided training in computer disciplines at Z0/Z1 level within the framework of SIPVZ (State information policy in education) and its INDOŠ project. There were 5 cycles of training for 5 schools and in them 43 primary and secondary school teachers were fully trained.

Prof. Ing. Jan M. Honzík, CSc.
Vice-Dean for Public Relations
II.5. Dislocation, Modernization, and Development

Together with the establishment of the Faculty of Information Technology on 1st January 2002, it was indispensable to adopt a strategy concerning its material and technical supplies and dislocation. A key material called “Building Programme” was elaborated based on accredited study programmes, and the expected number of students and staff. Its output served as needs analysis for the individual categories of floor area.

The management of BUT decided about the final dislocation of the FIT into the premises Božetěchova 2 and 1.

In agreement with this decision a new set of three lecture halls (150 seats, 2x70 seats) at a very high tech level, and a new entrance were opened, and the second courtyard was reconstructed. 67 mil. CZK were invested and consequently the increase in number of students of the FIT in the academic year 2002/2003 could be managed. The service entrance connects the area of Božetěchova 2 with the outer traffic system and avoids vehicles passing through the baroque portal leading to the first courtyard. The reconstruction of the second courtyard partly solves the parking problems and operations in that area.

In 2002, the Cartesian monastery (Božetěchova 2 premises) was classified as part of the project “Preservation of Architectural Heritage of the Czech Republic”. At the same time a BUT investment project called Reconstruction and Completion of the BUT Premises in Božetěchova Street in Brno was being worked on. Three out of four south seclusions were repaired step by step including the interior, at the cost of 17 mil. CZK (1.1 mil. CZK was the contribution of the state). The Dean’s office of the FIT will be located into the reconstructed seclusions.

To manage the tuition in the academic year 2002/2003 it was necessary to take some provisional measures in 2002 and, at the same time, minimize the financial loss. The gymnasiurn was transformed into three computer laboratories with 21 workplaces each including equipment. The Siemens computer lab was adapted and two seminar rooms were rebuilt. The Dean’s meeting room, which can also be used for tuition of small groups of students, was built. A part of the first courtyard was reserved for parking.

It is the Vice-Dean Ing. Zdeněk Bouša, who is in charge of this extremely important and demanding task, i.e. the task of the faculty development and finance.

Ing. Zdeněk Bouša
Vice-Dean for Campus Development
II.6. **Library at the FIT**

The library has been there since the Department of Computer Science and Engineering was founded in 1964. At present it is located in two rooms in the left wing of the premises in Božetěchova Street. It contains more than 11000 books, 1000 diploma theses, and several tens of dissertations. Subscriptions of 60 professional journals have been maintained. There are 12 seats and one computer available in the study room. One professional librarian is in charge of book records and other services. Electronic catalogues of books and journals are kept in the OpenAccess system, in 2003, a transition to the central BUT records in Aleph will be carried out.

The library managed in co-operation with BUT Central Library subscriptions of 20 new titles of journals which meet the requirements of students and the staff of the faculty, e.g. ACM Transactions on database systems, Computer Speech and Language, Microprocessor report, The Journal of visualization and computer animation, and others.

In co-operation with BUT Central Library and together with some other universities in the Czech Republic the FIT and the other faculties of BUT obtained access to the electronic information of IEEE Computer Society Digital Library. For several years the world's most significant editor of these publications - IEEE (Institute of Electrical and Electronics Engineers) - has been providing service which enables searching, studying and printing all publications “produced“ by the Computer Society IEEE, which means one third of all IT publications in the world.

Jan Černocký, Dr. Ing.
II.7. Academic Senate of the FIT BUT in 2002

**Academic Senate**

The Academic Senate was elected for the period of January 2002 till January 2005:

- **Chairman**: Doc. Ing. Jaroslav Zendulka, CSc.
- **Vice-Chairman**: Ing. Petr Lampa
- **Vice-Chairman and Chairman of the Chamber of the Academic Staff**: Stanislav Chromčák

**Chamber of Academic Staff**

- Ing. Daniel Cvrček, PhD. (UIFS)
- Ing. Vladimír Janoušek, PhD.(UITS)
- Doc. Ing. Jiří Kunovský, CSc. (UITS)
- Ing. Petr Lampa (CVT)
- Doc. RNDr. Alexander Meduna, CSc. (UIFS)
- Dr. Ing. Petr Peringer (UITS)
- Doc. Dr. Ing. Pavel Zemčík (UPGM)
- Doc. Ing. Jaroslav Zendulka (UIFS)

**Student Chamber**

- Stanislav Chromčák (Master’s programme EI, spec. VTI)
- Vlastimil Kaluža (Master’s programme EI, spec. VTI) – since 24th Sept 2002
- Ing. Bohuslav Křena (Doctoral programme IT)
- Marek Kyršich (Master’s programme EI, spec. VTI ) – since 24th Sept 2002
- Jaroslav Švec (Master’s programme EI, spec. VTI) – till 18th June 2002
- Pavel Tupec (Master’s programme EI, spec. VTI) – till 18th June 2002
- Zdeněk Vráblík (Master’s programme EI, spec. VTI)

**AS FIT Committees**

**Legislative Committee**

- Stanislav Chromčák – since 8th October 2002
- Vlastimil Kaluža – since 8th October 2002
- Doc. Ing. Jiří Kunovský, CSc. – chairman
- Ing. Petr Lampa
- Jaroslav Švec – till 18th June 2002
- Pavel Tupec – till 18th June 2002
Economic Committee
Ing. Daniel Cvrček, PhD
Ing. Bohuslav Křena
Ing. Petr Lampa – chairman
Zdeněk Vráblík
Doc. Ing. Dr. Pavel Zemčík

Activities of the AS FIT in 2002

The Academic Senate of the FIT elected after the Faculty of Information Technology had been established (on 7th January 2002), first met at the constituent assembly, at eleven regular meetings and one extra meeting with the average attendance of 91%. All meetings had a quorum.

Most of the meetings dealt with legislative and economic topics, which are the responsibility of the ASs according to the University Education Act. The Academic Senate also discussed and agreed on the Long-Term Intention of the FIT BUT for the period of 2002-2005. As far as the internal regulations of the new faculty are concerned, the Admission Regulations for the Doctoral Study Programme (FIT BUT in 2002), Admission Regulations for the Master’s Study Programme (FIT BUT in 2002) and Admission Regulations for the Bachelor’s Study Programme (FIT BUT in 2003) were agreed on. The Dean’s Regulations completing the Study and Examination Regulations of BUT and Dean’s Regulations completing BUT Scholarship Regulations were discussed, as well as amendments of Rules of Procedure and the Statute of the FIT, which was approved later by the AS.

The Academic Senate discussed and approved the budget of the FIT for 2002 and checked its fulfilment. A total of 35 decisions, out of which 10 concerned internal regulations and 3 economic issues, were approved on. Other decisions referred to elections of the Dean, nominations of academic officials, the long-term intention, elections to the Academic Senate of BUT, procedures, etc. The Student Chamber actively participated in all activities of the Academic Senate FIT. After Jaroslav Švec and Pavel Tupec graduated, the AS was completed in by-elections (Vlastimil Kaluža and Marek Kyrsch). The Legislative Committee met three times in 2002 to discuss the proposals of internal regulations of the FIT and the Economic Committee met once to discuss the budget proposal. Doc. Ing. Zdena Rábová, CSc. was nominated by the AS FIT and approved by the AS BUT to become a FIT deputy in the Czech Council of Higher Education Institutions and she worked there in the sphere of student creativity.

More detailed information about the individual sessions of the AS FIT can be found in the minutes (http://www.fit.vutbr.cz/FIT/AS/), which form part of the Faculty Information System.

Chairman AS FIT
II. 8. Student Organizations

According to the University Education Act, it is the **Student Chamber of the Academic Senate of the FIT** (SK AS FIT), which represents the students of the FIT. The Academic Senate as well as the Student Chamber of the FIT were elected on 7th January 2002. The Student Chamber AS FIT has five members, one of them being a representative of the doctoral students. Besides the **Student Chamber** of AS FIT there is also the **Student Union of the FIT** whose aim is to promote the interests of the FIT students and continue in the long tradition of the SU FEECS. The SU FEECS was transformed into two independent organizations - SU FIT and SU FEEC - in October. The top authority – the Parliament – is a body of elected representatives of the individual lecture groups and of members who, besides the deputies, wish to take active part in student activities. Each deputy is elected for a period of one year.

The activities of SU FIT cover several areas. The deputies help students to negotiate with the FIT or BUT managements and they present students' opinions and ideas, and reversely they inform students about the activities and events at the Faculty. Furthermore, the SU FIT co-operates with other student organizations, organizes cultural events and presentations, takes part in promotions of the Faculty and BUT.

**Activities of the Student Chamber of the Academic Senate (SCAS) of the FIT in 2002**

Student senators regularly attended the AS FIT meetings. They participated in the Economic and Legislative Committees and agreed on the FIT budget and approved the study regulations respectively. The SCAS FIT was trying to put the purchase of students gowns through as well as amendments of some study regulations, e.g. the obligation to inform students about the exam results two days before the re-sit at the latest, or the possibility for the students of the running out Master's study programme to ask for one more re-sit. In the end, the gowns were not bought: they were borrowed for the graduation ceremonies from the Faculty of Business and Management instead. The changes in the study regulations were accepted.

A representative of the SCAS FIT took part in a meeting of representatives of Student Chambers of ASs of faculties of electrical engineering and faculties of information technology, which was held in Plzeň. Preferential allocation of beds in the halls of residence was another important event where the members of the SCAS FIT co-operated with the faculty management - they passed a resolution concerning allocation criteria, passed them to the Dean and ensured the possibility of sending applications through the Internet. The SCAS FIT delegated its representatives to the individual work sections of the SCAS BUT.

**Activities of the SU FEECS and SU FIT in 2002**

The members of the SU participated both in faculty activities and those of BUT in 2002. In January, there were the first elections into the Academic Senate, the FIT Open Day, course evaluation by students, and organization of the first joint ball in co-operation with the FEEC. The SU members also helped the Sports Centre of BUT to organize the "Sportparty" and to organize the registration for courses in physical education. At the beginning of the new semester, the SU organized a non-traditional sporting event – "Desorienteering". Its aim was
to help newcomers get better orientation within the campus. In April the SU members took part in a meeting informing students about study stays in foreign institutions and they also worked in committees during the students’ creativity conference. They also participated in preparations for the May festival. In 2002, similar to previous years, students helped to present the FIT at the GAUEAMUS fair. During the winter semester the SU FIT organized a presentation for the first-year students which made them familiar with the structure of the FIT and BUT and also gave them useful information concerning the study at the Faculty. In December, the SU started a questioning which tries to find out about accessibility of SW necessary for students projects.

Stanislav Chromčák
DEPARTMENT OF INFORMATION SYSTEMS

The Department of Information Systems provides tuition in the Master’s study programme with the specialization Information Technology, which covers programming, formal languages and translators, database and information systems, Internet and distributed applications. The aim is to inform students about theory, technology and methods of information systems development and teach them to develop such systems based on modern tools, methods and technologies. Apart from that the Department also provides tuition in a large number of basics in the Bachelor’s study programme Information Technology and offers subjects in the PhD. study programme Information Technology.

Research activities of the Department covers database technologies, information systems implementation, control of SW projects, theory of formal languages and translators. At present the members of the Department concentrate on:

- Object-oriented modelling, object-oriented database systems, database design
- Knowledge discovery in databases
- Information system implementation
- Software metrics and control of software projects
- Cryptographics protocols and security mechanisms
- Formal languages and
- Functional languages

The lectures in most courses are accompanied with projects or laboratory sessions, where students acquire necessary skills and useful experience with the latest SW packages and hardware units, team work and project management.

Staff

Head of Department
Zendulka Jaroslav, Doc. Ing., CSc.

Deputy Head of Department
Meduna Alexander, Doc. RNDr., CSc.

Professors
Honzík Jan M., Prof. Ing., CSc.
Hruška Tomáš, Prof. Ing., CSc.

Associate Professors
Meduna Alexander, Doc. RNDr., CSc.
Zendulka Jaroslav, Doc. Ing., CSc.

Lecturers
Cvrček Daniel, Ing., PhD.
Postgraduate Students
Bartík Vladimír, Ing.
Burget Radek, Ing.
Elbl Stanislav, Ing.
Güttner Jakub, Ing.
Heckel Martin, Ing.
Kaláb Petr, Ing.
Kolka Milan, Ing.
Kotásek Petr, Ing.
Kubiček Vladislav, Ing.
Lorenc Luboš, Ing.
Škrkal Oto, Ing.
Švec Martin, Ing.
Vojta Tomáš, Ing.
Vurm Petr, Ing.

Equipment
The Department uses the equipment of the Computer Centre.

Tuition

<table>
<thead>
<tr>
<th>Abbr</th>
<th>Course</th>
<th>Sem</th>
<th>Cr.</th>
<th>Hours</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>APR</td>
<td>Algorithms and Programming</td>
<td>S</td>
<td>5</td>
<td>39-0-0-26</td>
<td>Kreslíková Jitka, RNDr., CSc.</td>
</tr>
<tr>
<td>APS</td>
<td>Software Architecture and Components</td>
<td>W</td>
<td>6</td>
<td>39-0-0-26</td>
<td>Honzík Jan M., Prof. Ing., CSc.</td>
</tr>
<tr>
<td>APS</td>
<td>Software Architecture and Components</td>
<td>S</td>
<td>6</td>
<td>39-0-0-26</td>
<td>Honzík Jan M., Prof. Ing., CSc.</td>
</tr>
<tr>
<td>FLP</td>
<td>Functional and Logic Programming</td>
<td>W</td>
<td>6</td>
<td>39-0-0-12</td>
<td>Kolář Dušan, Dr. Ing.</td>
</tr>
<tr>
<td>INS</td>
<td>Information Systems</td>
<td>W</td>
<td>6</td>
<td>39-2-0-10</td>
<td>Hruška Tomáš, Prof. Ing., CSc.</td>
</tr>
<tr>
<td>TID</td>
<td>Modern theoretical informatics</td>
<td>W</td>
<td>0</td>
<td>39-0-0-13</td>
<td>Meduna Alexander, Doc. RNDr., CSc.</td>
</tr>
<tr>
<td>PRD</td>
<td>Post-Relational Database Systems</td>
<td>S</td>
<td>6</td>
<td>26-0-0-26</td>
<td>Kolář Dušan, Dr. Ing.</td>
</tr>
<tr>
<td>PRJ</td>
<td>Programming Languages</td>
<td>S</td>
<td>6</td>
<td>39-12-0-0</td>
<td>Hruška Tomáš, Prof. Ing., CSc.</td>
</tr>
<tr>
<td>PRO</td>
<td>Programming Practice</td>
<td>S</td>
<td>2</td>
<td>0-0-0-26</td>
<td>Kreslíková Jitka, RNDr., CSc.</td>
</tr>
</tbody>
</table>
TJD Theory of Programming Languages  W  39-0-0-0-0  Hruška Tomáš, Prof. Ing., Hruška Tomáš, Prof. Ing., CSc.
VPD Selected Topics OOM in Persistent Systems  S  39-0-0-0-0  Hruška Tomáš, Prof. Ing., CSc.
IZP Fundamentals of Programming  W  39-0-0-12-14  Kreslíková Jitka, RNDr., CSc.
IZ1 Fundamentals of Programming for foreign students  W  39-0-0-12-14  Kreslíková Jitka, RNDr., CSc.

Research Projects

Development/Dissemination of Joint Courses - (PROG) in Applied Informatics and Multimedia, EC EUA ECTS, SOCRATES-PROG, 2002-2003
Investigators: Honzik Jan M.

Intensive Programme project - IP - Applied Informatics and Multimedia, EC EUA ECTS, Socrates - IP, 2002-2004
Investigators: Honzik Jan M.

InterpRISe – Interregional Co-operation for Promoting Regional Innovation Strategies in Europe, EU - Phare, 2002

Modern Methods of Language Parsing, FRVŠ MŠMT, FR1831/2002/G1, 2002
Investigators: Hrubý Martin, Meduna Alexander, Švec Martin

Developing Program Bachelor’s Study Programmes as the Expression of Support of Bologna Declaration, MŠMT, 2002
Investigators: Honzik Jan M.

Developing Program for Specified Study Programmes, MŠMT, 2002
Investigators: Honzik Jan M.

Preparing the Distance Form of Bachelor’s Study Programme Information Technology for Accreditation, MŠMT, 2002-2004
Investigators: Honzik Jan M.

Enhancement and Improvement in Practical Part of the Course Called Project Management, FRVŠ MŠMT, FR1795/2002/F1, 2002
Investigators: Kreslíková Jitka
Co-operation of Universities in Supporting the State Struggle with Computer Crime, MVČR, 2002-2003

Investigators: Cvrček Daniel, Hanáček Petr, Hruška Tomáš

Development of a Secure Key Data Storage Device, NBU, SU20022002002, 2002

Investigators: Cvrček Daniel, Hanáček Petr

Knowledge Discovery for Similarity Search in Multimedia Databases, FRVŠ MŠMT, FR1794/2002/G1, 2002

Investigators: Kubíček Vladislav, Zendulka Jaroslav

Environment for Development, Modelling, and Application of Heterogeneous Systems, GAČR, GA102/01/1485, 2001-2004


Research of Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003


Co-operation:

Co-operation in the Czech Republic

- Application Software, s.r.o.
- Autocont CZ, a.s.
- Faculty of Informatics, MU Brno
- Department of Informatics FEI, VŠB – Technical University Ostrava
- LBMS, s.r.o. Praha
- Microsoft, s.r.o.
- Minolta, s.r.o.
- MP-Soft, s.r.o.Brno
- STAVCERT, s.r.o. Praha
- UNIS, s.r.o., Brno
- VEMA, a.s.
- Military Academy Brno
International Co-operation

- University in Siegen, Germany
- Microsoft Business Solutions, Denmark

Visitors to the Department

- Ing. Nick Malouf, managing director Entela Canada, Inc. Canada, 1 day
- Takehiko Tanaka, Ph.D., Wakayama University, Japan, 3 days

Visits of Staff Members to Foreign Institutions

- Burget Radek, Ing., EDBT Foundation, Institute d'Etudes de Cargese, Cargese, Corsica, FR, 8 days
- Burget Radek, Ing., Universidad de Valladolid, Valladolid, ES, 4 months
- Cvrček Daniel, Ing. PhD., University of Cambridge (UK) Computer Laboratory, 4 days
- Honzík Jan M., Prof. Ing., CSc., EUROPEAN COMMISSION, University of Technology Graz, Austria, AT, 6 days
- Honzík Jan M., Prof. Ing., CSc., EUROPEAN COMMISSION, Osnabrueck, Germany, DE, 5 days
- Kubíček Vladislav, Ing., University of Maribor, Hotel Piramida, Maribor, Heroja Šlandra 10, Slovinia, SI, 5 days

Membership in Organizations and Societies

- Honzík Jan M., Prof. Ing., CSc., IGIP, IFIP, ECTS National Coordinator
- Hruška Tomáš, Prof. Ing., CSc.,
  - ACM
  - Czech and Slovak Simulation Society (CSSS)
- Kolář Dušan, Dr. Ing.,
  - ACM
- Kreslíková Jitka, RNDr., CSc.,
  - Czech Society for Quality
  - Project Management Association
  - Czech Electrotechnical Society
- Švec Jaroslav, Ing.,
  - The European Higher Education Society
• Zendulka Jaroslav, Doc. Ing., CSc.,
  o ACM
  o Czech and Slovak Simulation Society (CSSS)

Publications

Journals:

Meduna Alexander, Kolář Dušan: One-Turn Regulated Pushdown Automata and Their Reduction, In: Fundamenta Informatica, 2002, No. 16, Amsterdam, NL, pp. 399-405, ISSN 0169-299968


Conferences:


Češka Milan, Hruška Tomáš, Zendulka Jaroslav: Education in Information Technology at Brno University of Technology, In: Proceedings of the International Conference - Advances...


Textbooks, Lecture Notes:


Kolář Dušan: Post-Relational Database Systems, teaching texts for PRD, VTI specialization, PDS course, IT specialization, Brno, CZ, FIT BUT, 2002, p. 562


Other Activities:

- Organization of the "5th Information Systems Modelling" (ISM 2001). An international conference on theory, modelling techniques and tools, methods of information systems design and database systems (together with the Department of Intelligent Systems FIT).
- Co-organizers of workshops Santa’s and Easter Crypto Get-Together
- Membership in the evaluation board of the competition called Crystal Disk within the framework of the international trade fair of information technology Invex 2002.
- Prof. Honzík became the National Co-ordinator of ECTS (the only one in the CR) in EUA (European University Association). EUA is an important European body – the only representative of all universities in EU.
- Prof. Honzík was delegated by ELA as a consulting expert of a large project - electronic identifier for VZP.
- Co-operations with Microsoft and Autocont were started with respect to courses based on Microsoft products.
- Two Socrates programmes: "Joint European MSc Program" and "Intensive Program Project" in Applied Informatics Technology and Multimedia.
DEPARTMENT OF INTELLIGENT SYSTEMS

The Department of Intelligent Systems provides tuition of subjects for the Intelligent Systems specialization. This specialization comprises knowledge of several scientific areas: artificial intelligence, modelling of systems, simulation and formal analysis over system models, neural networks, genetic algorithms and fuzzy systems. The common feature are the non-traditional ways of computing that enable solving extremely complex problems, uncertainties and dynamism of processes in progress.

The graduants will be able to model and create systems with signal recognition (speech and image processing), natural speech processing and decisions based on incomplete or unprecise information, at developing intelligent control systems, intelligent information systems and intelligent robots.

Projects

Research activities at the department focuses on intelligent systems but systems for specific applications, computer-aided systems, interface design and use of parallelism at different levels are also dealt with. Other areas of interest are integration of components into embedded applications, simulations and prototyping of different configurations and formal specification and verification of the design.

Most subjects are accompanied with projects or laboratories so that students might acquire practical skills and experience with the latest software products.

Staff

Head of the Department
Hanáček Petr, Dr. Ing.

Deputy Head of the Department
Rábová Zdeňka, Doc. Ing., CSc.

Professors
Češka Milan, Prof. RNDr., CSc.

Associate Professors
Kunovský Jiří, Doc. Ing., CSc.
Rábová Zdeňka, Doc. Ing., CSc.
Zbořil František, Doc. Ing., CSc.

Lecturers
Hanáček Petr, Dr. Ing.
Janoušek Vladimír, Ing., PhD.
Peringer Petr, Dr. Ing.
Vojnar Tomáš, Ing., PhD.

Technical Staff
Marek Vladimír, Ing.

PhD. Students
Bednář David, Ing.
Černohorský Jakub, Ing.
Dao Anh Minh, Ing.
Drahanský Martin, Ing.
Haša Luděk, Ing.
Hrubý Martin, Ing.
Kočí Radek, Ing.
Křena Bohuslav, Ing.
Martinek David, Ing.
Mašovský Jaroslav, Ing.
Orság Filip, Ing.
Petřek Jiří, Ing.
Řezáč David, Ing.
Schwarz Ivan, Ing.
Turakhodjaeva Nasibakhon
Zacios Dalibor, Ing.
Zbořil František ml., Ing.

**Equipment**

The Department uses the equipment of the Computer Centre

**Tuition**

<table>
<thead>
<tr>
<th>Abbr</th>
<th>Course</th>
<th>Sem</th>
<th>Cr</th>
<th>Hours</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPI</td>
<td>Bachelor’s project VTB</td>
<td>W</td>
<td>6</td>
<td>0-0-0-0-78</td>
<td>Rábová Zdeňka, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>BKR</td>
<td>Security and cryptography</td>
<td>S</td>
<td>6</td>
<td>26-0-0-0-39</td>
<td>Hanáček Petr, Dr. Ing.</td>
</tr>
<tr>
<td>ISD</td>
<td>Intelligent systems</td>
<td>W</td>
<td>0</td>
<td>39-0-0-0</td>
<td>Zbořil František, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>CPP</td>
<td>C a C++ Languages</td>
<td>W</td>
<td>6</td>
<td>39-0-0-0-26</td>
<td>Peringer Petr, Dr. Ing.</td>
</tr>
<tr>
<td>CPP</td>
<td>C a C++ Languages</td>
<td>S</td>
<td>6</td>
<td>39-0-0-0-26</td>
<td>Peringer Petr, Dr. Ing.</td>
</tr>
<tr>
<td>MSD</td>
<td>Modelling and simulation</td>
<td>W</td>
<td>0</td>
<td>39-0-9-0-0</td>
<td>Rábová Zdeňka, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>APP</td>
<td>Modern applications of computers</td>
<td>S</td>
<td>6</td>
<td>26-13-0-26-0</td>
<td>Kunovský Jiří, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>OMP</td>
<td>Object-oriented modelling and prototyping</td>
<td>W</td>
<td>6</td>
<td>26-0-0-20-19</td>
<td>Janoušek Vladimír, Ing., Ph.D.</td>
</tr>
<tr>
<td>OMP</td>
<td>Object-oriented modelling and prototyping</td>
<td>S</td>
<td>6</td>
<td>26-0-0-12-27</td>
<td>Janoušek Vladimír, Ing., Ph.D.</td>
</tr>
<tr>
<td>OS1</td>
<td>Operation systems 1</td>
<td>W</td>
<td>5</td>
<td>39-0-0-0-26</td>
<td>Peringer Petr, Dr. Ing.</td>
</tr>
<tr>
<td>OS1</td>
<td>Operation systems 1</td>
<td>S</td>
<td>5</td>
<td>39-0-26-0-0</td>
<td>Peringer Petr, Dr. Ing.</td>
</tr>
<tr>
<td>PDA</td>
<td>Parallel and distributed algorithms</td>
<td>W</td>
<td>6</td>
<td>39-0-0-0-26</td>
<td>Hanáček Petr, Dr. Ing.</td>
</tr>
<tr>
<td>PI1</td>
<td>Year project 1</td>
<td>W</td>
<td>0</td>
<td>0-8-0-0-18</td>
<td>Rábová Zdeňka, Doc. Ing., CSc.</td>
</tr>
</tbody>
</table>
Research Projects

Doctoral study programme Information Technology at BUT, FRVŠ MŠMT, FR1833/2002/F1, 2002
Investigators: Češka Milan, Janoušek Vladimír, Vojnar Tomáš

IMPIIT – International Student Mobility, MŠMT, MMI 20059, 2002
Investigators: Abu Kteish Ibrahim, Drahanský Martin, Kašpárek Tomáš, Křena Bohuslav, Pečiva Jan, Zemčík Pavel

Intelligent Systems – Course Preparation, FRVŠ MŠMT, FR1834/2002/F1, 2002
Investigators: Drahanský Martin, Orság Filip, Zbořil František

InterpRISe – Interregional Co-operation for Promoting Regional Innovation Strategies (RIS) in Europe, EC - Phare, 2002

Investigators: Češka Milan, Křena Bohuslav

Modern methods of language parsing, FRVŠ MŠMT, FR1831/2002/G1, 2002
Investigators: Hrubý Martin, Meduna Alexander, Švec Martin

Co-operation of Universities in Supporting the State Struggle with Computer Crime, MVČR, 2002-2003
Investigators: Čvrček Daniel, Hanáček Petr, Hruška Tomáš

PNtalk system for application prototyping, FRVŠ MŠMT, FR1959/2002/G1, 2002
Investigators: Kočí Radek, Rábová Zdeňka
Development of Secure Key Storage Device, NBU, SU20022002002, 2002
Investigators: Cvrček Daniel, Hanáček Petr

Investigators: Bouajjani Ahmed, Vojnar Tomáš

Environment for Developing, Modelling, and Application of Heterogeneous Systems
GACR, GA102/01/1485, 2001-2004

Modelling, Verifying, and Prototyping Distributed Applications Using Petri Nets GAČR, GA102/00/1017, 2000-2002
Investigators: Češka Milan, Haša Luděk, Janoušek Vladimír, Kočí Radek, Křena Bohuslav, Rábůvá Zdeňka, Schwarz Ivan, Vojnar Tomáš

Research of Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003

Co-Operation

Co-operation in the Czech Republic
- Department of Informatics FEI, VŠB – Technical University in Ostrava
- Department of Computers FEL, ČVUT Praha
- Department of Computer Science and Engineering WBU in Plzeň

International Co-operation
- Siemens AG Österreich, Wien, Austria
- Technische Universität Berlin
- University of Lingby, Denmark
- University of Vienna, Austria
• University of Huddersfield, Huddersfield, Department of Computer Science, UK
• University of Malta, Malta
• Université Paris 7 - Denis Diderot
• Malmö Univerzity

**Visitors to the Department**

• Lecture by Dr. Baynhama a Dr. Moore z GB ADI "Dynamic Systems Simulation ", 15th Sept 2002, Brno, Department of Intelligent Systems FIT BUT

• Visit by Doc. Ing. Jaroslav Sklenář, CSc., University of Malta, preparations for the ASU conference, and a joint publication.

**Visits of Staff Members to Foreign Institutions**

• Češka Milan, Prof. RNDr., CSc., Advances in Infrastructure for e-business, e-education, e-science, and e-medicine on the Internet, L'Aquila, SSGRR, via Giovani Falcone, 25, Italie, IT, 7 days

• Drahanský Martin, Ing., Universität Siegen, Hölderlinstraße 3, DE, 5 months

• Hanáček Petr, Dr. Ing., Cambridge University, Cambridge University, GB, 5 days

• Křena Bohuslav, Ing., Central Laboratory for Parallel Processing, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., bl. 25A, 1113 Sofia, BG, 3 months

• Křena Bohuslav, Ing., Universidade Federal de Pernambuco, Piramide Palace Hotel, Coastal Way, 1717, Natal, BR, 12 days


**Membership in Organizations and Societies**

• Češka Milan, Prof. RNDr., CSc.,
  - TC 10 IFIP Committee - Computer systems technology
  - IFIP WG 10.1 Computer Aided System Theory
  - Body of editors of International Journal of General Systems, Gordon and Breach Science Publisher, USA
  - Research Board of Advisors, American Biographical Institute
  - Gesellschaft für Informatik, Germany
  - Czech and Slovak Simulation Society (CSSS) in the framework of EUROSIM
  - ACM - SIGSAC - Special Interest Group on Security, Audit and Control
- Hanáček Petr, Dr. Ing.,
  - CIS (Czech and Slovak Information Society)
  - Czech and Slovak Simulation Society (CSSS)
  - ACM - SIGSAC - Special Interest Group on Security, Audit and Control
  - Center for Electronic Commerce
- Janoušek Vladimír, Ing., Ph.D.,
  - Czech and Slovak Simulation Society (CSSS)
- Jiří Kunovský, Doc.Ing.,CSc.,
  - Czech and Slovak Simulation Society (CSSS)
- Peringer Petr, Dr. Ing.,
  - Czech and Slovak Simulation Society (CSSS)
- Rábová Zdeňka, Doc. Ing., CSc.,
  - Committee of the Czech and Slovak Simulation Society (CSSS) in the framework of EUROSIM
  - AFCEA
- Vojnar Tomáš, Ing., Ph.D.,
  - Czech and Slovak Simulation Society (CSSS)
- Zbořil František, Doc. Ing., CSc.,
  - Czech and Slovak Simulation Society (CSSS)

Publications

Journals:


**Conferences:**


Research Reports:


Textbooks and Lecture Notes:

Češka Milan: Theoretical Computer Science, teaching texts for FJP and TI, IT, Brno, CZ, FIT BUT, 2002, p. 134

Zbořil František: Neural Networks, teaching texts for NEU, Brno, CZ, FIT BUT, 2002, p. 198

Zbořil František: Artificial Intelligence, teaching texts for UIN, Brno, CZ, FIT BUT, 2002, p. 372

Comparative Studies:


Other Activities:

- Organization of ASU 2002 (Association of Simula Users - The Simulation Languages), an international conference focused on simulation in Simula language.
- Organization of the "5th Information Systems Modelling" (ISM 2001), an international conference on theory, modelling techniques and tools, methods of information systems design and database systems.
- Participation in organizing "36th International Conference on Modelling and Simulation of Systems" (MOSIS 2002), an international conference focused on simulation, esp. the theory, tools, methods and applications.
- Participation in organizing the inter-faculty students conference EEICT 2002.
- Membership of CSSS Committee (Czech and Slovak Simulation Society)
DEPARTMENT OF COMPUTER GRAPHICS AND MULTIMEDIA

The Department of Computer Graphics and Multimedia is responsible for teaching courses in the MSc. specialization called Computer Graphics and Multimedia, which covers computer graphics principles, multimedia principles, man-machine interface principles, image and sound processing and compression, application interfaces for computer graphics and multimedia applications programming, and basics of applied computer graphics disciplines, such as computer-aided design (CAD), geographic information systems, etc. The Department of Computer Graphics and Multimedia is also responsible for teaching Fundamentals of Computer Graphics and Man-machine Interface Design in the BSc. study programme Information technology.

Research activities of the Department are mainly focused on general computer graphics algorithms, rendering, animation in 3D space, modern methods of man-computer interaction in virtual 3D space, image processing, digital signal processing, and applications of computer graphics. The main research topics are the following:

- realistic rendering of complex scenes and volume rendering
- animation of articulated structures: kinematics and dynamics,
- computer graphics algorithms using DSP a FPGA,
- multispectral image compression,
- human body modelling: reconstruction from VH data sets
- parallel rendering,
- geographical information systems,
- artistic modelling and rendering: patterns, fractals, unrealistic rendering

The majority of courses consist of lectures supplemented with projects and laboratory sessions. The knowledge that students gain during the lectures is further developed in laboratory sessions and practised in individually assigned projects and team projects. Most assignments are computer independent. In case of complex tasks, which need specialized equipment, the necessary equipment, such as high performance Silicon Graphics graphic stations and specialized peripheries, is available.

Staff

Head of the Department
Zemčík Pavel, Doc. Dr. Ing.

Deputy Head of the Department
Černocký Jan, Dr. Ing.

Professors
Heřmanský Hynek, Prof., Dr.Eng.
Serba Ivo, Prof. Ing., CSc.

Associate Professors
Zemčík Pavel, Doc. Dr. Ing.
Lecturers

Černocký Jan, Dr. Ing.
Dobšík Martin, Ing.
Kršek Přemysl, Ing., Ph.D.
Tišnovský Pavel, Ing.

Technical Staff

Otáhalová Sylva

PhD. Students

Abu Kteish Ibrahim, Ing.
Burget Lukáš, Ing.
Čapek Daniel, Ing.
Grézl František, Ing.
Herout Adam, Ing.
Jenderka Petr, Ing.
Karafiát Martin, Ing.
Křejpský Marek, Ing.
Motlíček Petr, Ing.
Pečiva Jan, Ing.
Potůček Igor, Ing.
Schwarz Petr, Ing.
Sumec Stanislav, Ing.
Vícha Tomáš, Ing.

Equipment

• 3D Minolta VIVID 800 scanner for automatic scanning of objects up to the size of 1x1x1m with a computer-controlled revolving table for manipulation with the scanned objects. The scanner is connected to the Silicon Graphics Octane workstations.
• Software called SPEL - Speech Processing Electronic Library specialized in speech signal processing.

Tuition

<table>
<thead>
<tr>
<th>Abbr</th>
<th>Course</th>
<th>Sem</th>
<th>Cr.</th>
<th>Hours</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>CZR</td>
<td>Digital Speech Processing</td>
<td>W</td>
<td>6</td>
<td>26-3-0-24-12</td>
<td>Hermanský Hynek, Prof., Dr.Eng.</td>
</tr>
<tr>
<td>MMD</td>
<td>Modern methods of 3D scene rendering</td>
<td>W</td>
<td>0</td>
<td>39-0-0-0-0</td>
<td>Zemčík Pavel, Doc. Dr. Ing.</td>
</tr>
<tr>
<td>MMD</td>
<td>Modern methods of 3D scene rendering</td>
<td>S</td>
<td>0</td>
<td>39-0-0-0-0</td>
<td>Zemčík Pavel, Doc. Dr. Ing.</td>
</tr>
<tr>
<td>PGD</td>
<td>Computer Graphics</td>
<td>W</td>
<td>0</td>
<td>39-0-0-0-0</td>
<td>Serba Ivo, Prof. Ing., CSc.</td>
</tr>
</tbody>
</table>
Research Projects

Computer graphics algorithms with FPGA support, GAČR, GA102/02/0507, 2002-2003
Investigators: Zemčík Pavel

Data driven and anthropic coding and recognition of speech, GAČR, GA102/02/D108, 2002-2005
Investigators: Černocký Jan

Voice technologies for support of information society, GAČR, GA102/02/0124, 2002-2004
Investigators: Burget Lukáš, Černocký Jan, Grézl František, Karafiát Martin, Motlíček Petr, Schwarz Petr

IMPIT – International students‘ mobility, MŠMT, MMI 20059, 2002
Investigators: Abu Kteish Ibrahim, Drahanský Martin, Kašpárek Tomáš, Křena Bohuslav, Pečiva Jan, Zemčík Pavel

Advanced Techniques for Acoustic Modelling in Speech Recognition, MŠMT, MMI 2056, 2002
Investigators: Černocký Jan, Jain Pratibha, Matějka Pavel, Schwarz Petr

Multi Modal Meeting Manager, EU-HLT, IST-2001-34485, 2002-2005
Investigators: Černocký Jan, Heřmanský Hynek, Zemčík Pavel

Development in area of creating FEM models of human tissues for biomechanics application, GAČR, GA201/01/D141, 2001-2004
Investigators: Kršek Přemysl

Research of Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003

Centre of Applied Cybernetics CAK, participation in a part of project dedicated to image processing (the Centre was established by the MŠMT)
Investigators: Pavel Zemčík
Co-operation

Co-operation in the Czech Republic

- Faculty of Informatics MU Brno, Doc. Karel Pala, Dr. Ivan Kopeček, Dr. Tomáš Staudek – co-operation in speech processing and computer graphics
- VŠB-TU, Ostrava, Faculty of Electronics and Informatics, Dr. Arnošt Šarman – annual series of lectures given by the staff and PhD. students of ÚPGM, VŠB-TU – focus on computer graphics
- Centre for Machine Perception, FELK ČVUT Praha, Dr. Jiří Matas – co-operation on image processing related to transport
- ÚTIA Praha, Dr. Jaroslav Kadlec, Ing. Jan Schier - co-operation in the field of algorithm implementation for image processing in FPGA

International Co-operation

- University of Bristol, Bristol, UK, Department of Computer Science, Dr. Alan Chalmers – co-operation in the area of computer graphics, exchange of PhD. students
- University of Surrey, Guildford, UK, Centre for Vision, Speech, and Signal Processing, Prof. Josef Kittler, Dr. William Christmas – image processing, exchange of PhD. students
- University of Helsinki, Helsinki, Finland, Laboratory of Computational Engineering, Prof. Mikko Sams, Dr. Michael Frydrych – co-operation in the area of man-machine communication, exchange of PhD. students
- Lappeenranta University of Technology, Lappeenranta, Finland, Prof. Heikki Kälviäinen, Prof. Jan Voráček – image processing, exchange of students, and MSc. Study in Finland within the framework of IMPIT Project (International Master’s Programme in Information Technology)
- University of Joensuu, Joensuu, Finland, Department of Computer Science, Prof. Jussi Parkkinen, Dr. Markku Hauta-Kasari – multispectral colour image processing, exchange of students
- Technische Universität Wien, Institut für Komputergrafik, Thomas Theußl – Annual international students’ seminar CESGC (Central European Seminar on Computer Graphics)
- Oregon Health and Science University, Oregon Graduate Institute, Oregon, USA, Prof. Misha Pavel – speech processing, robust detection of phonemes, exchange of PhD. students
- ESIEE Paris, Paris, Francie, Prof. Genevieve Baudoin – speech processing, very low bit-rate speech coding, exchange of PhD. students
- Department of computer graphics and image processing, Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovak Republic, Dr. Andrej Ferko – Annual international students’ seminar CESGC (Central European Seminar on Computer Graphics)

Visitors to the Department

- Prof. Genevieve Baudoin, director for research ESIEE Paris, Ecole Superieure d’Ingenieurs en Electrotechnique et Electronique, France, 7 days
• Pratibha Jain, doctoral student OGI/OHSU, OGI School of Science & Engineering, Oregon Health & Science University, Portland, OR, USA, 1 month
• Dr. Jean Hennebert, Director - VP Technology, Ubicall, Belgium, 2 days
• Dr. Alan Chalmers, University of Bristol, UK, 3 days
• Dr. Collin Dalton, University of Bristol, UK, 3 days
• Dr. Michael Fridrich, University of Helsinky, Finland, 3 days

Visits of Staff Members to Foreign Institutions

• Burget Lukáš, Ing., Oregon Graduate Institute of Science and Technology, Portland, Oregon, US, 4 months
• Černocký Jan, Dr. Ing., Technische Fachhochshule Wiesbaden, Wiesbaden, DE, 5 days
• Černocký Jan, Dr. Ing., Ecole Superieure d'Ingenieurs en Electronique et Electrotechnique, Noisy-le-Grand, FR, 6 days
• Černocký Jan, Dr. Ing., Institut Dalle Molle d'Intelligence Artificielle Perceptive – IDIAP, Martigny, CH, 5 days
• Grézl František, Ing., Oregon Graduate Institute of Science and Technology, Portland, Oregon, US, 16 months
• Motlíček Petr, Ing., Oregon Graduate Institute of Science and Technology, Portland, Oregon, US, 9 months
• Pečiva Jan, Ing., University of Bristol, Department of Computer Science, Merchant Ventures Building, Bristol, GB, 2 months
• Schwarz Petr, Ing., Oregon Graduate Institute of Science and Technology, Portland, Oregon, US, 10 months
• Zemčík Pavel, Doc. Dr. Ing., Technical Educational Institute, Chania, Crete, GR, 10 days
• Zemčík Pavel, Doc. Dr. Ing., Institut Dalle Molle d’Intelligence Artificielle Perceptive - IDIAP, Martigny, CH, 5 days
• Zemčík Pavel, Doc. Dr. Ing., University of Utrecht, NL, 4 days
• Zemčík Pavel, Doc. Dr. Ing., University of Joensuu, Joensuu, FI, 7 days

Membership in Organizations and Societies

• Černocký Jan, Dr. Ing.,
  o IEEE (Secretary of the Czech Section)
  o ISCA (International speech communication association).
• Dobšík Martin, Ing.,
  o ACM, SIGGRAPH
  o Czech and Slovak Simulation Society (CSSS)
• Kršek Přemysl, Dr. Ing.
  o ACM
• Pavel Zemčík, Doc. Dr. Ing.,
  o ACM, SIGHCI
  o IEEE

Publications

Journals:


Burget Lukáš, Motlíček Petr, Grézl František, Jain Pratibha: Distributed speech recognition, In: Radioengineering, 2002, No. 4, CZ, pp. 12-16, ISSN 1210-2512


Conferences:


Research Reports:


DEPARTMENT OF COMPUTER SYSTEMS

Department of Computer Systems provides tuition in the MSc. specialization Computer Systems and Networks which covers processor and computer architecture, data communication, communication protocols and computer networks, development of network-based, Internet, parallel and embedded applications, design of hybrid HW/SW systems and their specification, digital signal processing, design of specialized interfaces, including interfaces to the Internet. Besides, the Department is also in charge of teaching a number of courses in the Bachelor’s study programme Information Technology.

Research activities of the Department are focused on architecture of HW/SW of embedded systems, parallel performance prediction and tuning, specification and design of computer-based systems and their mutual communication. Other research topics are: image processing and applied genetic and evolutionary algorithms, including evolvable hardware.

The main areas of interest are the following:

- formal specification and design of computer-based systems,
- application-specific architectures: high-performance embedded systems, multiprocessor systems on a chip (MPSoC) and re-configurable systems,
- performance prediction and tuning of parallel applications (neural networks, large systems of linear equations, signal processing algorithms),
- evolvable digital architectures,
- formal approaches to digital circuit diagnostics,
- applied evolutionary algorithms, and
- diagnostics, testability and safety.

The lectures in most of the courses are supplemented with projects of laboratory sessions, where students acquire useful experience and skills with the latest software packages and hardware units (workstations and workstation clusters, multiprocessor systems, workstation clusters, RT OS, FPGA design systems and the like), learn basics of teamwork and project management. For the most demanding projects there is an access to the Supercomputing Centre of BUT.

Staff

Head of Department
Dvořák Václav, Prof. Ing., DrSc.

Deputy Head of Department
Kotásek Zdeněk, Doc. Ing., CSc.

Professors
Dvořák Václav, Prof. Ing., DrSc.
Švéda Miroslav, Prof. Ing., CSc.
Associated Professors
Drábek Vladimír, Doc. Ing., CSc.
Kotásek Zdeněk, Doc. Ing., CSc.
Linhart Miroslav, Doc. Ing., CSc.

Lecturers
Eysselt Miloš, Ing., CSc.
Fučík Otto, Dr. Ing.
Růžička Richard, Ing., Ph.D.
Sekanina Lukáš, Ing., Ph.D.
Schwarz Josef, Ing., CSc.

PhD. Students
Bureš František, Ing.
Crha Luděk, Ing.
Kutálek Vladimír, Ing.
Mika Daniel, Ing.
Ráb Jaroslav, Ing.
Ryšavý Ondřej, Ing.
Sllame Azeddien M., Ing.
Staroba Jiří, Ing.
Strach Michal, Ing.
Strnadel Josef, Ing.
Ščuglík František, Ing.
Tupec Pavel, Ing.
Urbš Hynek, Ing.

Laboratory Equipment

Laboratory of Embedded Systems
6 work sites equipped with FUJITSU DevKit16 for the development of advanced embedded applications including special peripheries in FPGA, and use of modern design systems “Processor Expert”, UNIS.

8 work sites equipped with development kits HC11 EVBU for the development of simple embedded applications with the use of the most widely spread MCU Motorola.
1 work site for developing DSP applications with DSP (Motorola).

Computer Peripheral Laboratory
The bench for tuition support and development of PC fieldbuses – a special adapter (developed at the FIT), PCI Spartan fieldbus development kit with FPGA, Agilent 32-channel logic analyser

Input peripheral devices bench – a keyboard and its controller (a special-purpose set-up for demonstration), tablet Genius NewSketch, desktop scanner HP 5300C.

Output peripheral devices bench – ink printer HP DesignJet 488CA with HPGL a PCL graphic languages, Roland x/y plotter with HPGL language.

Digital interfaces bench - cards for PC / devices with RS-232, RS-485, RS-422, GPIB.

External memory bench - interface and IDE a SCSI, SCSI-2 discs.
The bench for development teaching kits – memory programmer, programmable logic and processors Elnec LabProg 48LV, soldering station, measuring instruments and power sources.

## Tuition

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Course</th>
<th>Sem</th>
<th>Cr</th>
<th>Hours</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVA</td>
<td>Applied evolution algorithms</td>
<td>S</td>
<td>6</td>
<td>39-0-0-8-18</td>
<td>Schwarz Josef, Ing., CSc.</td>
</tr>
<tr>
<td>AMC</td>
<td>Applied microcomputers</td>
<td>S</td>
<td>6</td>
<td>26-0-26-0-13</td>
<td>Schwarz Josef, Ing., CSc.</td>
</tr>
<tr>
<td>ARP</td>
<td>Computer architecture</td>
<td>W</td>
<td>6</td>
<td>39-18-0-8-0</td>
<td>Dvořák Václav, Prof. Ing., DrSc.</td>
</tr>
<tr>
<td>CIO</td>
<td>Digital and impulse circuits</td>
<td>W</td>
<td>6</td>
<td>26-13-0-13-13</td>
<td>Schwarz Josef, Ing., CSc.</td>
</tr>
<tr>
<td>CZS</td>
<td>Digital signal processing</td>
<td>W</td>
<td>6</td>
<td>39-0-0-10-16</td>
<td>Fučík Otto, Dr. Ing.</td>
</tr>
<tr>
<td>CZS</td>
<td>Digital signal processing</td>
<td>S</td>
<td>6</td>
<td>39-0-0-10-16</td>
<td>Fučík Otto, Dr. Ing.</td>
</tr>
<tr>
<td>DIA</td>
<td>Diagnostics and safe systems</td>
<td>W</td>
<td>6</td>
<td>39-0-12-0-14</td>
<td>Drábek Vladimír, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>SSD</td>
<td>Formal specification of computer-based systems</td>
<td>S</td>
<td>0</td>
<td>39-0-0-0-0</td>
<td>Švéda Miroslav, Prof. Ing., CSc.</td>
</tr>
<tr>
<td>KPA</td>
<td>Communication in computer applications</td>
<td>W</td>
<td>6</td>
<td>39-0-0-12-14</td>
<td>Švéda Miroslav, Prof. Ing., CSc.</td>
</tr>
<tr>
<td>LOS</td>
<td>Logical systems</td>
<td>S</td>
<td>5</td>
<td>39-16-6-0-4</td>
<td>Eysselt Miloš, Ing., CSc.</td>
</tr>
<tr>
<td>NCS</td>
<td>Moder design of digital systems</td>
<td>S</td>
<td>6</td>
<td>39-0-0-10-16</td>
<td>Fučík Otto, Dr. Ing.</td>
</tr>
<tr>
<td>PDD</td>
<td>Parallel and distributed programming</td>
<td>W</td>
<td>0</td>
<td>39-0-0-0-0</td>
<td>Dvořák Václav, Prof. Ing., DrSc.</td>
</tr>
<tr>
<td>PZ1</td>
<td>Peripheral devices 1</td>
<td>S</td>
<td>6</td>
<td>39-0-12-0-14</td>
<td>Kotásek Zdeněk, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>PZ2</td>
<td>Peripheral devices 2</td>
<td>W</td>
<td>6</td>
<td>39-0-12-0-14</td>
<td>Kotásek Zdeněk, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>PTP</td>
<td>PCs, technical maintenance</td>
<td>S</td>
<td>6</td>
<td>26-0-0-39-0</td>
<td>Kotásek Zdeněk, Doc. Ing., CSc.</td>
</tr>
<tr>
<td>PSI</td>
<td>Computer networks and communication protocols</td>
<td>W</td>
<td>6</td>
<td>39-0-0-12-14</td>
<td>Švéda Miroslav, Prof. Ing., CSc.</td>
</tr>
<tr>
<td>PPP</td>
<td>Practical parallel programming</td>
<td>S</td>
<td>6</td>
<td>26-0-0-0-26</td>
<td>Dvořák Václav, Prof. Ing., DrSc.</td>
</tr>
<tr>
<td>PTD</td>
<td>Principles of testable circuits synthesis</td>
<td>W</td>
<td>0</td>
<td>39-0-0-0-0</td>
<td>Kotásek Zdeněk, Doc. Ing., CSc.</td>
</tr>
</tbody>
</table>
Research Projects

Efficient methods of solving large sets of linear algebraic equations, FRVŠ MŠMT, FR1956/2002/G1, 2002
Investigators: Staroba Jiří, Dvořák Václav

Investigators: Kotásek Zdeněk, Strnadl Josef

InterpRISe – Interregional Co-operation for Promoting Regional Innovation Strategies in Europe, EU - Phare, 2002

Parallel System Performance Prediction and Tuning, GAČR, GA102/02/0503, 2002-2004
Investigators: Dvořák Václav, Čejka Rudolf, Kutálek Vladimír, Očenášek Jiří, Schwarz Josef, Staroba Jiří

Embedded Control Systems and their Intercommunication, GAČR, GA102/02/1032, 2002-2004
Investigators: Bilek Jan, Kapoun Vladimír, Srovnal Vilém, Švéda Miroslav, Vrba Radimír, Zezulka František

Formal Approaches in Digital Design Diagnostics – Testable Design Verification, GAČR, GA102/01/1531, 2001-2003
Investigators: Drábek Vladimír, Kotásek Zdeněk, Růžička Richard, Sekanina Lukáš, Strnadl Josef, Zbořil František

Research of Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003
Co-operation

Co-operation in the Czech Republic

- Camea, s.r.o., Brno
- UNIS, s.r.o., Brno
- ASICentrum, Praha
- Institute of Informatics and Automation, AV ČR
- Department of Informatics, FEI. Technical University of Mining and Metallurgy Ostrava
- Computer Department. FEL, Czech Technical University, Prague
- Department of Electrical Measurement, Technical University of Mining and Metallurgy Ostrava
- Faculty of Mechatronics, Liberec University of Technology
- Faculty of Applied Sciences, University of West Bohemia, Plzeň

International Co-operation

- Institute of Informatics, Slovak Academy of Sciences, SR
- Technical University in Tallin, Estonia
- Department of Informatics, University of Oslo, Norway
- Pennsylvania State University, The Behrend College, Erie, USA
- Cell Matrix Corp., USA
- Norwegian University of Science and Technology, Trondheim, Norway
- Politecnico di Torino - Dip. Automatica e Informatica, Italy
- Universidade de Aveiro, Portugal

Visits of the Staff in Other Institutions

- Drábek Vladimír, Doc. Ing., CSc., EUROMICRO Symposium on Digital System Design: Architecture, Methods and Tools, Dortmund, DE, 5 days
• Drábek Vladimír, Doc. Ing., CSc., 8th Baltic Electronics Conference, Tallinn, EE, 6 days
• Dvořák Václav, Prof. Ing., DrSc., International Conference on Parallel and Distributed Processing Techniques and Applications, Las Vegas, Nevada, US, 10 days
• Dvořák Václav, Prof. Ing., DrSc., Lunds Universitet, Lund, SE, 6 days
• Eysselt Miloš, Ing., CSc., Institut für Strukturpolitik und Wirtschaftsförderung, Halle-Leipzig e.V., Halle/S., DE, 4 days
• Kotásek Zdeněk, Doc. Ing., CSc., Universität Dortmund, Universita v Dortmundu, DE, 5 days
• Kotásek Zdeněk, Doc. Ing., CSc., Talinna Tehnikaülikool, University of Tallin, EE, 6 days
• Očenášek Jiří, Ing., Technical University in Košice, TU Kosice, SK, 5 days
• Sekanina Lukáš, Ing., Ph.D., European Network of Excellence in Evolutionary Computing, Kinsale, Irsko (hotel Trident), IE, 7 days
• Sekanina Lukáš, Ing., Ph.D., Universidade de Granada, Granada, ES, 7 days
• Staroba Jiří, Ing., Johannes Kepler University Linz, Johannes Kepler University, Altenbergerstr. 69, 4040 Linz, AT, 5 days
• Staroba Jiří, Ing., Lunds Universitet, Lund, SE, 6 days
• Švéda Miroslav, Prof. Ing., CSc., Lunds Universitet, Lund, SE, 6 days
• Švéda Miroslav, Prof. Ing., CSc., IEEE Computer Society Press, Orlando, Florida, US, 13 days

Membership in Organizations and Societies
• Drábek Vladimír, Doc. Ing., CSc.,
  o Czech Society for Cybernetics and Informatics
  o Czech Electrical Engineering Society
  o Czech and Slovak Simulation Society (CSSS)
  o EvoNet - The European Network of Excellence in Evolutionary Computing
• Dvořák Václav, Prof. Ing., DrSc.,
  o IEEE - Computer Society, since 1991
  o Editorial Board JUCS, Journal of Universal Computer Science, since 1994
  o Editorial Board JEE - Journal of Electrical Engineering (Bratislava, Slovakia), since 1996
• Eysselt Miloš, Ing., CSc.,
• Fučík Otto, Dr. Ing.,
  o The Institute of Electrical and Electronic Engineers (IEEE)
• Růžička Richard, Ing., Ph.D.,
  o EvoNet - The European Network of Excellence in Evolutionary Computing
• Sekanina Lukáš, Ing., Ph.D.,
  o EvoNet - The European Network of Excellence in Evolutionary Computing
• Schwarz Josef, Ing., CSc.,
  o Czech and Slovak Simulation Society (CSSS)
  o EvoNet - The European Network of Excellence in Evolutionary Computing
• Švéda Miroslav, Prof. Ing., CSc.,
  o IEEE Computer Society
  o IEEE Technical Committee on Engineering of Computer-Based Systems (ECBS)
  o IFIP WG10.1

Publications:

Journals:


Sekanina Lukáš, Drábek Vladimír: Soft-hardware, In: Vesmír, vol. 81, č. 7, CZ, p. 393-395, ISSN 0042-4544

Conferences:


Dvořák Václav, Staroba Jiří: Design Space Exploration of Parallel Embedded Applications Based on Performance-Oriented Specifications, In: Proceedings of the Joint Workshop on


Proceedings:


Reference Manuals:


Eysselt Miloš: Information Technology: Three-Year Bachelor Study Programme IT-BC-3 (The First, Hard-Copy, Issue), Brno, CZ, FIT BUT, 2002, p. 16

Eysselt Miloš: Information Technology: Three-Year Bachelor Study Programme IT-BC-3 (The Second, WWW Issue), Brno, CZ, FIT BUT, 2002, p. 16

Eysselt Miloš: The study plans for the specialization Computer Science and Engineering of the running out study programmes at the FIT in 2002/2003 (published on 2002-02-22), Brno, CZ, FIT BUT, 2002, p. 33


Lecture Texts and Notes:

Dvořák Václav: Architecture and programming of parallel systems, teaching texts for APP, IT specialization, Brno, CZ, 2002, p. 630


Schwarz Josef: Applied evolutionary algorithms, teaching text for EVA, IT specialization, FIT BUT, Brno, CZ, 2002, p. 135

Švéda Miroslav: Specification of embedded systems, teaching texts for SVS, IT specialization, Brno, CZ, 2002, p. 52

**Chapters of Books:**


**Dissertations:**

Růžička Richard: The formal approach to analysis of digital circuits testability at the RT level, Brno, CZ, 2002, p. 102


**Lectures:**


**Other Activities**


- Ing. Richard Růžička, Ph.D.: The Rector's award for excellent results in science and other activities accomplished for the benefit of BUT and doctoral students

- Ing. Josef Strnadl: Siemens award – a grant for doctoral students

- Ing. Luděk Crha: Siemens award for the diploma thesis.


• Co-operation in creating four Expressions of Interest focused on Excellence Network and Integrated Projects for the 6th framework programme of EU.
COMPUTER CENTRE

The Computer Centre is a self-contained part of the Faculty of Information Technology. It guarantees the running of computer laboratories, both local and faculty net, servers and information systems. The computer laboratories of the Centre are utilised both for scheduled tuition and for work on projects, diploma theses and research projects. In computer and specialized laboratories student can make use of 170 personal computers and Sun workstations, which have the Microsoft Windows XP, RedHat Linux and Solaris operation systems. All computers have the Internet services: Web, e-mail, conference, Telnet, FTP, etc., There is a dedicated server Unix with a disk capacity of 240 GB at students' disposal, where they can receive and send their e-mail, develop their web pages and have their home directories for the whole period of their study at the faculty. When working in Windows XP they can also utilise the student’s file server Novell NetWare.

The computer net interconnecting all laboratories, lecture halls and offices is based on a gigabit Ethernet and alternate switching at the 3rd level to guarantee a sufficient carrying capacity even at maximum load. Connection to Brno Metropolitan Net and to the Internet is guaranteed by duplicated optical channels with a transfer capacity of 1 Gb/s.

Students have an access to the faculty servers and can work from home or BUT halls of residence, which are also connected to the Metropolitan Net.

Staff

Head
Lampa Petr, Ing.

Deputy Head
Čejka Rudolf, Ing.

Centre Manager
Dupalová Helena

System Integrator
Gaďorek Petr, Ing.

Information System Administrator
Michal Bohumil, Ing.

Computer Network Administrator
Lampa Petr, Ing.

OS Administrator
Čejka Rudolf, Ing.
Kašpárek Tomáš, Ing.

Technical and Administrative Staff
Kappler Karel
Kreslík František, Ing.
Duránik Lukáš

Attendants
Almášiová Květoslava
Habrdová Stella
Nečasová Milena
Samsonová Radomíra

Equipment

Teaching and Research Laboratories
- Laboratory with SUN Ultra 5 (20 workstations)
- Laboratories with personal computers and Windows XP or Linux systems (90 workstations)
- Multimedia laboratory equipped with 3D accelerators and Windows NT or Linux (22 workstations)

Open Computer Laboratories
- 2 unscheduled Internet laboratories open to all students of the Faculty (total of 42 computers + 2 connecting points for notebooks)

Special Instrumentation and Computers
- Sun Enterprise 450 server with 4 UltraSPARC II processors, 4 GB oper. memory and 255 GB disc capacity
- Student server (Web, email, file server), 2 Intel Pentium III/800 processors, 960 MB RAM, RAID-5 disk field with the capacity of 240 GB, network card 1 Gb/s.
- Novell NetWare student and staff server with 2 Intel Pentium III/800 processors, 512 MB RAM, 140 GB RAID-5 disk capacity with the network card 1 Gb/s.
- FTP server with a RAID-5 disk field with the capacity of 460 GB.
- SGI Octane, Indy, Indigo, Sun Ultra 5 a SPARCstation 5 workstations.
- Computer network based on Gigabit switches at the 3rd level - Extreme Networks Black Diamond 6808 a Summit 48.

Software
- Oracle 9i, including development tools (in the framework of Oracle academic programme).
- Centura Team Developer development tools and SQLBase database server (a gift within “Centura Scientific Partner” programme).
- Object-oriented CASE system Paradigm Plus by Computer Associates.
- OrCAD a ModelSim FL systems.
- Software in the framework of Microsoft Academic Alliance programme (development tools).
- Borland Pascal, C++, Delphi, C++ Builder.
- Adobe Photoshop, Autodesk 3D studio, Caligari TrueSpace.

Tuition

<table>
<thead>
<tr>
<th>Abbr</th>
<th>Course</th>
<th>Sem</th>
<th>Cr</th>
<th>Hours</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUR</td>
<td>Graphical User Interfaces</td>
<td>Z</td>
<td>5</td>
<td>26-0-0-8-18</td>
<td>Lampa Petr, Ing.</td>
</tr>
<tr>
<td>OS2</td>
<td>Operating Systems 2</td>
<td>L</td>
<td>6</td>
<td>39-0-0-8-18</td>
<td>Lampa Petr, Ing.</td>
</tr>
</tbody>
</table>

68
Research Projects

**IMPIT – International Students Mobility, MŠMT, MMI 20059, 2002**
*Investigators*: Abu Kteish Ibrahim, Drahanský Martin, Kašpárek Tomáš, Křen Bohuslav, Pečiva Jan, Zemčík Pavel

**Parallel System Performance Prediction and Tuning, GAČR, GA102/02/0503, 2002-2004**
* Investigators*: Dvořák Václav, Čejka Rudolf, Kutálek Vladimír, Očenášek Jiří, Schwarz Josef, Staroba Jiří

**Highspeed Backbone of BUT, FRVŠ MŠMT, FR1901/2002/A, 2002**
*Investigators*: Lampa Petr, Smolík Stanislav, Záhořík Vladimír

*Investigators*: Čejka Rudolf

**Research of Information and Control Systems, CEZ MŠMT, MSM 262200012, 1999-2003**

Co-operation

**Visits of Staff Members to Foreign Institutions**

- Kašpárek Tomáš, MSc., University of Bristol, Department of Computer Science, Merchant Ventures Building, Bristol, GB, 2 months
- Lampa Petr, MSc., Microsoft Research Cambridge, St. John College, Cambridge, GB, 5 days

**Membership in Institutions**

- Čejka Rudolf, MSc.,
  - Czechoslovak TeX Users Group (CSTUG)
  - Czech and Slovak Simulation Society (CSSS)
- Lampa Petr, Ing.,
  - Usenix
  - Usenix, Sage
  - editorial board of Connect!
Publications:

Chapters in Books:

Conference Contributions: