

FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY  
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# ANNUAL REPORT 2005

SLOVAK UNIVERSITY OF TECHNOLOGY  
BRATISLAVA



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Insignia

## Foreword

The Faculty of Materials Science and Technology (MST) in Trnava was established on 1 January 1986 by decree of the Czechoslovak Government. It was originally named the Faculty of Machine Technology. However, the history of this Faculty is much older than the date of its establishment shows. Its history is closely connected with the technological branches of machine construction, the foundations of which were laid at the Department of Mechanical and Electrical Engineering in the forties.

In February 1991 the Academic Senate of the Faculty suggested a new name for this institution - the Faculty of Materials Science and Technology - which is its present official name. Faculty of Materials Science and Technology is one of the six faculties of the Slovak University of Technology (STU), the oldest and the largest University of Technology in Slovakia.

In the academic year 2005-2006 the Faculty comprises the following departments:

- Department of Applied Mechanics
- Department of Engineering Pedagogy and Psychology
- Department of Environmental and Safety Engineering
- Department of Forming
- Department of Foundry
- Department of Humane Sciences
- Department of Industrial Engineering and Management
- Department of Information Technology and Automation
- Department of Languages
- Department of Machining and Assembly
- Department of Materials Engineering
- Department of Mathematics
- Department of Non-Metallic Materials
- Department of Physical Education and Sports
- Department of Physics
- Department of Quality Engineering
- Department of Technological Devices and Systems
- Department of Welding
- Detached workplaces in Brezno, Dubnica, Nitra and Komárno.

The educational and research activities of the Faculty are aimed at training the experts and solving research tasks in the field of industrial (partially mechanical engineering) production, where issues related to engineering materials, technological processes, production management and quality control, information technologies and automation processes in production plants, together with ecological and humane aspects of production processes are being dealt with.

Following the requirement for diversification of all forms of study and graduate profiles, the Faculty provides Bachelor's degree courses (BSc.), Master's degree courses (MSc.), and postgraduate doctoral (PhD) degree courses. In the academic year 2005/2006 - 5563 students studied at the Faculty in various courses. *2006/2007.*

As it follows from the results of the successful accreditation carried out at the Faculty in the year 2001, the following majors can be studied within the below mentioned types of accredited courses:

**STUDY BRANCH, STUDY FORM AND STUDY DURATION****BACHELOR STUDY:**

Machine Production Technology  
Technological Devices and Systems  
Materials Engineering  
Environmental Engineering  
Safety Technology- Safety of Technology Systems and Processes  
Information Technology and Automation in Industry  
Quality Engineering  
Industrial Engineering and Management

Study form: full-time, part-time, Study duration: 3 years full-time, 4 years part-time

**MASTER OF SCIENCE STUDY:**

Machine Production Technology  
Technological Devices and Systems  
Materials Engineering  
Environmental Engineering  
Information Technology and Automation in Industry  
Quality Engineering  
Industrial Engineering and Management

Study form: full-time , part-time; Study duration: 2 years full-time, 2,5 years part-time

**POSTGRADUATE STUDY (PhD):**

Automation and Control  
Materials Engineering  
Machine Technologies and Materials  
Quality Engineering  
Plant Management  
Theory of Technical Subjects Training

Study form: full-time and part-time; Study duration: 3 years full-time, 5 years part-time

**COMPLEMENTARY TEACHER TRAINING:**

Teaching Technical Subjects Study form: part-time; Study duration: 2 year

In January 2004 the Faculty submitted 37 study programmes to the Accreditation Commission of Slovak Government. All of them have been approved and the Faculty will start teaching courses within the newly accredited programs from the academic year 2005-2006.

The scientific research of the Faculty of Materials Science and Technology respects the scientific and educational profile of the Faculty and is carried out in the following forms: grant research, institutional research, research within the framework of programmes of international scientific and research co-operation, research within the framework of entrepreneurial Faculty activities.

The basic organisational units promoting the scientific research programme at the Faculty are the departments.

In organising the activities the Faculty builds upon its traditional and long-term relations with foreign partner universities and foreign enterprises. The most important are: Technische Universität Wien Austria, Technische Universität Darmstadt Germany, Technische Universität Cottbus Germany, Fachhochschule Koethen Germany, State University of Technology in Izhevsk Russia, IFW e.V. Dresden Germany, NIS USA, University of Ljubljana Slovenia, Herning Institute of Business administration and Technology in Denmark, Purdue University Kokomo USA.

International co-operation programmes concentrate especially on co-operation in curriculum development and innovation, professional growth of the Faculty staff and the exchange of students, pedagogic documentation and other information. TEMPUS and CEEPUS (Central European Programme for University Studies) programmes represent a significant form of the updating of our foreign activities.

February 2006

**Jozef Sablik**, PhD, Professor  
Dean of the Faculty





**Presidium of the Faculty****Dean :**

Jozef Sablik, PhD, Prof.

**Oliver Moravčík, PhD, Prof. – deputy dean; vice-dean for**

- personnel and economic affairs
- professional staff development

**Alexander Štrpka, PhD, Assoc. Prof.**  
**vice-dean for**

- education
- student social programme

**Jozef Mudrik, PhD, Assoc. Prof. – vice-dean for**

- scientific research and management
- international projects
- technology transfer

**Jozef Vaský, PhD, Assoc. Prof. – vice-dean for**

- international contacts
- IT implementation and development
- public relations

**Anton Ulík, PhD, Assoc. Prof. – vice-dean for**

- technical and investment development
- entrepreneurial activities
- publishing

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### Scientific Board

*Chairman:* Jozef Sablik, PhD, Prof.  
*Vice-chairman:* Jozef Mudrik, PhD, Assoc. Prof.  
*Members:*

Karol Balog, PhD, Prof.	Marián Dugovič, MSc. Eng.
Miloš Čambál, PhD, Assoc. Prof.	Vladimír Giba, MSc. Eng., PhD
Jaroslav Červeňanský, PhD, Assoc. Prof.	Štefan Kassay, PhD, Prof.
Peter Grgač, PhD, Prof.	Peter Kostka, PhD, Assoc. Prof.
Ivan Hrivniák, PhD, Prof.	Aleš Gregar, PhD, Assoc. Prof.
Alexander Janáč, PhD, Prof.	Štefan Schmidt, MSc. Eng.
Ján Kalužný, PhD, Prof.	Miroslav Badida, PhD, Prof.
Marianna Kundrátová, PhD, Assoc. Prof.	Matej Bílý, PhD, Prof.
Alexander Linczényi, PhD, Prof.	Miroslav Solava, MSc. Eng.
Oliver Moravčík, PhD, Prof.	Branko Katalinic, PhD, Prof.
Marián Murgaš, PhD, Prof.	Milan Belko, MSc. Eng. PhD
Peter Schreiber, PhD, Assoc. Prof.	Luboš Lopatka, MSc. Eng.
Alexander Štrpka, PhD, Assoc. Prof.	Miroslav Šefčík, MSc. Eng.
Milan Turňa, PhD, Prof.	Lubomír Jahnátek, PhD, Assoc. Prof.
Anton Ulík, PhD, Assoc. Prof.	Peter Horyl, PhD, Prof.
Jozef Vaský, PhD, Assoc. Prof.	

### Academic Senate

*Chairman of Senate:* Peter Grgač, PhD, Prof.  
*Members:*

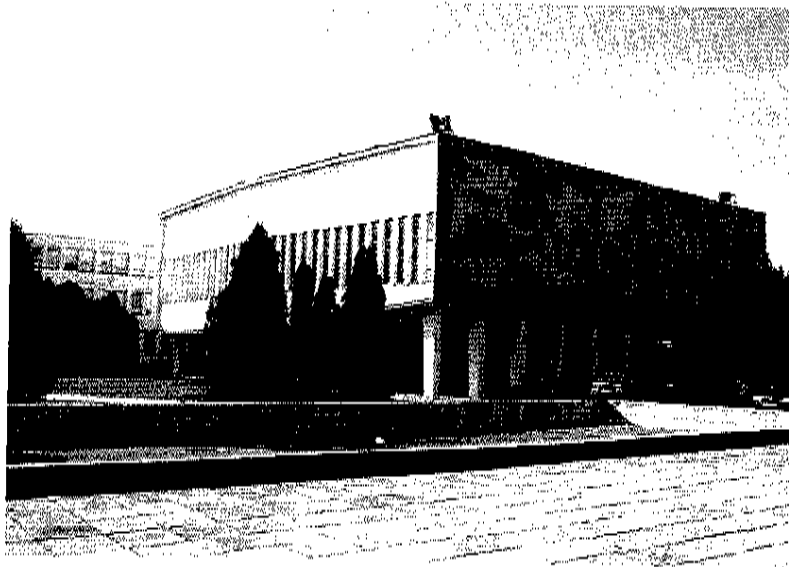
Karol Balog, PhD, Prof.	Juraj Miština, MSc. Eng.
Miloš Čambál, PhD, Assoc. Prof.	Milan Naď, MSc. Eng. PhD
Jaroslav Červeňanský, PhD, Assoc. Prof.	Jozef Peterka, PhD, Prof.
Rastislav Ďuriš, MSc. Eng.	Róbert Riedlmajer, MSc. Eng.
Peter Grgač, PhD, Prof.	Peter Schreiber, PhD, Assoc. Prof.
Roman Hrnko, PhD, Assoc. Prof.	Pavol Tanuška, MSc. Eng. PhD
Marian Merica, PhD, Assoc. Prof.	Karol Velišek, PhD, Prof.

### *Members of Chamber of Students:*

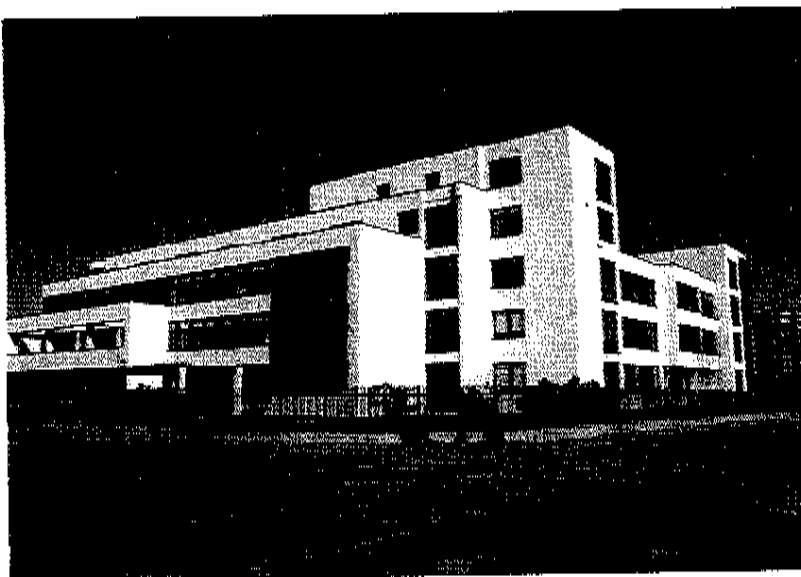
Tomáš Galko	Branislav Trenčan
Peter Iring	Andrej Véber
Martina Jakábová, MSc. Eng.	Eva Zibrinová
Michal Lenhardt	



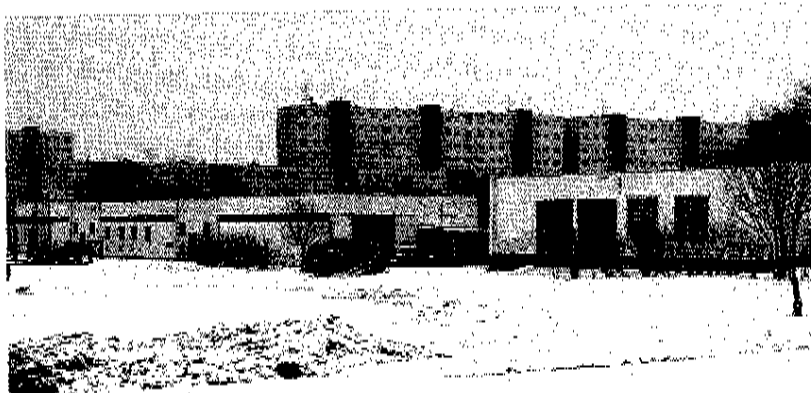
**Paulínska Street campus**



**Bottova Street campus**



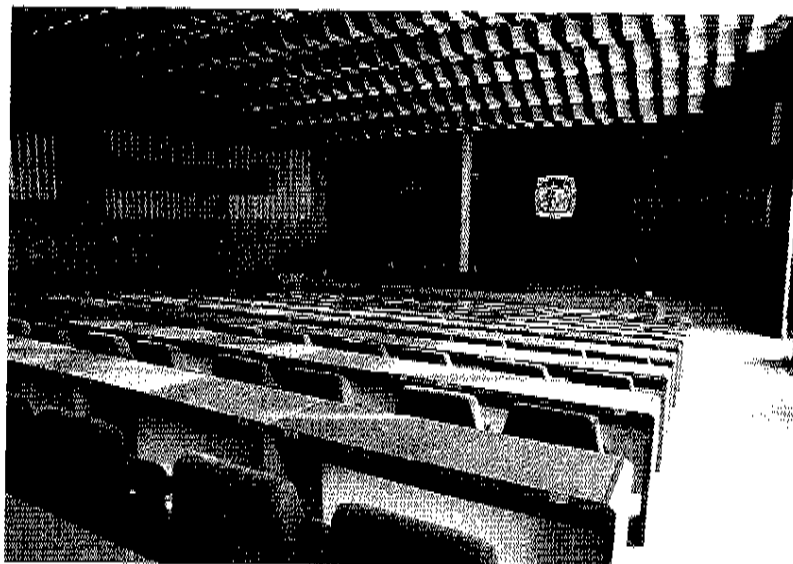
**Heavy laboratories**



**Light laboratories**



**Student hostel**



**Lecture hall of Prof. Čabelka**



**DEPARTMENT OF APPLIED MECHANICS**

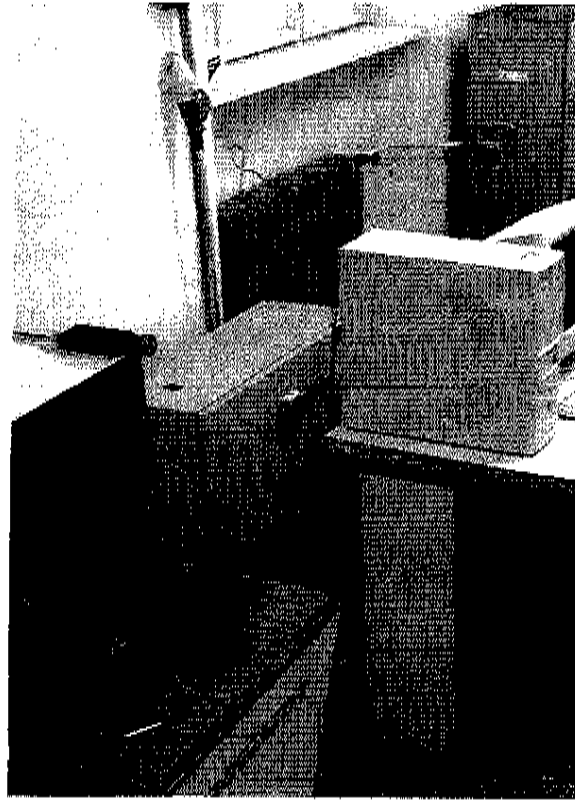
Head of the Department  
Milan Nad', MSc. (Eng.), PhD

Tel.: ++ 421-33-5511733  
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E-mail: kam@mtf.stuba.sk

**I. STAFF**

Professors: 1  
Assoc. Professors: 4  
Senior Lecturers: 11  
Lectures: 1

Research Fellows: 0  
Technical and Admin. Staff: 3  
PhD Students: 6



**Tribotestor and the stand for measuring the dynamic properties**

## II. EQUIPMENT

### II.1 Teaching and Research Laboratories

- Mechanical laboratory
- Tribological laboratory
- Computational laboratory
- Specialised CAD laboratory
- Manufacturing workshop

### II.2 Special Measuring Instruments and Systems

- Experimental stand for testing of mechatronic systems.
- Equipment for testing of tribological material properties.
- Codes - ANSYS, DYNAST, AutoCAD.
- Equipment for noise measurements.
- Equipment for strain gauges measurements.
- Equipment for measurements of heat transfer coefficient in fluids.

## III. TEACHING

### III.1 Bachelor Study (Bc.)

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Basics of Eng. Design and Technical Documentation	1	2-2	Král, Lacko
Mechanics of Solids	3	2-2	Labášová
Strength of Materials	3	1-2	Jelemenský, Nánási
Practice of Mechanics of Solids	3	0-2	Labášová
Practice of Strength of Materials	3	0-2	Duriš
Mechanics of Solids	3	3-3	Naď
Mechanisms and Machine Parts	5	3-2	Král
Noise and Vibrations	5	2-2	Mudrik
Hydro-Thermomechanics	4	1-2	Kraváriková
Practice of Basics of Engineering Design	4	0-2	Oravcová
Mechanisms and Machine Parts	4	2-2	Král
Strength of Materials	4	2-2	Jelemenský
Hydro-Thermomechanics	4	2-2	Taraba
Basics of Eng. Design and Technical Documentation	1	9-9	Král, Riečičiarová
Practice of Basics of Engineering Design	3, 4	0-9	Oravcová
Mechanics of Solids	5	20-7	Naď
Strength of Materials	5	9-9	Jelemenský
Practice of Strength of Materials	5	0-9	Vražič
Strength of Materials	5	7-7	Jelemenský, Nánási
Hydro-Thermomechanics	5	7-7	Kraváriková, Taraba
Practice of Hydro-Thermomechanics	5, 6	0-9	Behúlová, Kraváriková
Noise and Vibrations	7	9-9	Mudrik
Mechanics of Solids	4	9-9	Mudrik, Labášová
Hydro-Thermomechanics	6	9-9	Taraba
Mechanisms and Machine Parts	6	9-9	Lacko
Mechanisms and Machine Parts	6	14-9	Král



**III.2 Graduate Study (Ing.)***H/W Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Mechanics of Materials I	1	2-2	Nánási
Mechanics of Manufacturing Machines	1	2-1	Mudrik
Experimental and Diagnostical Methods	1	2-1	Nač
Principles of Design and Projecting of Safe Technical Systems	1	1-2	Tomaníček
Theory and Technology Industry Heating	3	2-2	Taraba
Mechanics of Materials II	3	1-1	Taraba
Thermodynamics	1	1-2	Behúlová
Mechanics of Materials I	1	9-9	Nánási
Mechanics of Manufacturing Machines	1	9-5	Mudrik
Thermodynamics	1	9-5	Behúlová

**IV. RESEARCH TARGETS**

- Modelling, analysis, simulation and experimental investigation of machine aggregates as mechatronic systems.
- Investigation of new materials with progressive tribological properties.
- Research and application of new approaches in numerical methods - analysis and simulation of technological and industrial processes, static and dynamic analysis of engineering structures.
- Research and development in the field of theoretical and applied mechanics.

**V. RESEARCH PROJECTS****V.1 Institutional Projects****V.2 National Grants (VEGA, KEGA)**

- Vibroacoustical energy transfer in nonhomogeneous systems. VEGA 1/2076/05
- Study, numerical simulation and optimisation of rapid heating processes for progressive forming and heat treatment technologies VEGA 1/2073/05
- Computer modelling of transfer phenomena applied for chosen technological and assembling processes and heat treatment processes. VEGA 1/2101/05
- Environmental suitable additive materials and technology for joining metallic and non-metallic materials and their combinations in solid state. VEGA 1/0122/037 - participation with Department of Welding
- New wear resistant materials of eutectic type. VEGA 1/0305/037 - participation with Department of Materials Engineering

**V.3 International Projects**

- „FEM analysis and optimization of dynamic and incremental semi-product heating for innovation forming processes“. International project - foreign partner: Technical university, Chemnitz, Germany.
- “Study and numerical simulation of thermal and humidity states of materials for the mass

and energy transfer by the convective heat transfer". International project - foreign partner: University of Technology, Brno, Czech Republic.

## **VI. CO-OPERATION**

### **VI.1 National Co-operation**

### **VI.2 International Co-operation**

- Co-operation with foreign partners: IzhGTU Izhevsk, Russia; BAS Sofia, Bulgaria; TU Warsaw, Poland; IM RAS Moscow, Russia; IMS TU Brno, Czech Republic

### **VI.3 Contracts with Industry**

- Co-operation with EBO Jaslovské Bohunice, EMO Mochovce, VUJE Trnava, ÚJD.

## **VII. THESIS AND DISSERTATIONS**

### **VII.1 Graduate Thesis**

The list of Graduate of Bachelor Degree Thesis (1) in 2005 available at:

<http://olib.cvt.stuba.sk>

The list of Graduate of Master Degree Thesis (8) in 2005 available at:

<http://olib.cvt.stuba.sk>

### **VII.2 Dissertations (Ph.D.)**

### **VII.3 Habilitations (Assoc. Prof.)**

## **VIII. OTHER ACTIVITIES**

### **VIII.1 Visits of Staff Members to Foreign Institutions**

- Mudrik Jozef - staff - Institute of Mechanics, Izh.GTU Izhevsk, Russia
- Taraba Bohumil, Behúlová Mária, Lašček Milan - staff - University of Technology, Brno, Czech Republic
- Behúlová Mária, Vražič Igor, Lašček Milan - staff - Technical university, Chemnitz, Germany

### **VIII.2 Foreign Visitors to the Department**

- Šťastník S., Steuer R., Krůňová H. - University of Technology, Brno, Czech Republic
- Mašek B., Malina J. - Technical university, Chemnitz, Germany
- Abramov I. V. – rector of Izhevsk State University, Izhevsk, Russian Federation
- Kulemin V. – director of Branch of Izhevsk State Technical University in Izhevsk, Russian Federation
- Kratochvíl C. – IMS FME TU Brno, Czech Republic

### **VIII.3 Organised Conferences, Seminars and Workshops**

**IX. PUBLICATION**

GOLUBKOV, N. S. – ABRAMOV, I. V. – IBRAGIMOV, A. U. – MUDRIK, J. *Transmission of mechanical drives*. Iževsk : IŽGTU, 2004. CD.

BEHÚLOVÁ, Mária. Influence of initial nitrogen gas velocity on the microstructure development of Ch3F12 alloy in automatization process. In *Kovové materiály*, 2005, roč. 43, č. 2, s. 145 – 157. ISSN 0023-432X

NAĎ, Milan. Structural dynamic modification of circular disc using pre-stressed fields. In *Research in Agricultural Engineering*, 2005, vol. 51, č. 3, s. 79 – 84. ISSN 1212-9151

KRÁL, Štefan. Instruments to constitute dynamic characteristics of gearing. In *Acta Mechanica Slovaca*, 2005, roč. 9, č. 3-B, s. 125 – 128. ISSN 1335-2393

MUDRIK, Jozef. Modelling and simulation of dynamic properties of drive systems with gear. In *Acta Mechanica Slovaca*, 2005, roč. 9, č. 3-B, s. 143 - 150. ISSN 1335-2393

BEHÚLOVÁ, M. – MAŠEK, B. – HOSPODÁRSKY, J. – MEYER, L. W. Computer design of heating and cooling of a rod semiproduct for the process of rotary spin extrusion. In *Acta Metallurgica Slovaca*, 2005, roč. 11, č.1, s. 21 – 27. ISSN 1335 – 1532

BEHÚLOVÁ, M. Numerical simulation of induction heating. In *Acta Metallurgica Slovaca*, 2005, roč. 11, č. 1, s. 28 - 34. ISSN 1335 – 1532

TARABA, B. Computer modeling of the part cooling in quenching oil ISORAPID 438. In *Acta Metallurgica Slovaca*, 2005, roč. 11, č. 1, s. 345-350. ISSN 1335 – 1532

LABAŠOVÁ, Eva. Readability analysis of teachings texts. In *Materials Science and Technology* [online]. 4/2005 [cit. 2005-11-07]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.html>> ISSN 1335-9053

HAZLINGER, Marián – LAŠČEK, Milan. Fatigue damage of car driving shaft. In *Materiálové inžinierstvo*, 2005, roč. 12, č. 3, s. 62-64. ISSN 1335-0803

LABAŠOVÁ, Eva – LABAŠ, Vladimír – ÁRENDÁS, Peter. Computation of thermal field in the welding of PE pipes. In *Vedecké práce MTF STU v Bratislave so sídlom v Trnave*, 2005, č. 19, s. 45 - 50. ISSN 1336-1589

LIPA, Zdenko – PETERKA, Jozef – POKORNÝ, Peter – ŠTEFÁNEK, Michal – TOMANÍČEK, Stanislav – TOMANÍČKOVÁ, Dagmar. Contribution to direct calculation of arithmetical average deviation from a mean line by longitudinal turning. In *Materials Science and Technology* [online]. 5/2005 [cit. 2005-12-20]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.html>> ISSN 1335-9053

TARABA, Bohumil – ŠŤASTNÍK, Stanislav – BEHÚLOVÁ, Mária – KMÍNOVÁ, Hana. Thermal and fluid numerical analysis of the air flow supported by thermovision. In *Materials Science and Technology* [online]. 5/2005 [cit. 2005-12-20]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.html>> ISSN 1335-9053

BEHÚLOVÁ, M. – MAŠEK, B. – MEYER, L. W. Thermal analysis of internally cooled spike for the process of rotary spin extrusion. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 71 - 81. ISBN 80-227-2286-3

ĎURIŠ, R. Accuracy of the solution with exact bar element with varying stiffness for geometric and material non-linearity. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 239 - 255. ISBN 80-227-2286-3

- GRGAČ, P. – LIPTÁK, M. – BEHŮLOVÁ, M. – ČAPLOVIČ, Ľ. – LINDENKREUZ, H. G. – LOSER, W. Influence of melt undercooling on the microstructure of levitated K190 tool steel. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 309 - 316. ISBN 80-227-2286-3
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- KRAVÁRIKOVÁ, H. Modelling and simulation of angular weld. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 619 - 624. ISBN 80-227-2286-3
- KULEMIN, V. – MUDRIK, J. Design of models and experimental analysis of dynamics of rotor on flexible supports. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 648 - 655. ISBN 80-227-2286-3
- LACKO, F. Some possibilities for induction of the required pre-tension of bolted joints. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 691 - 697. ISBN 80-227-2286-3
- MUDRIK, J. The effect of electric drive parameters on vibration in machine aggregates. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 844 - 850. ISBN 80-227-2286-3
- NAĎ, M. Structural modification of circular plate using constraining layers. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 851 - 855. ISBN 80-227-2286-3
- NÁNAŠI, T. Reconstruction of aliased frequencies with multirate sampling. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 856 - 860. ISBN 80-227-2286-3
- ORAVCOVÁ, J. Spiroid gears and theirs kinematic inaccuracies. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 878 - 881. ISBN 80-227-2286-3
- RIEČIAROVÁ, E. The influence of static loading on the efficiency of spiroid-gears. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 1014 - 1017. ISBN 80-227-2286-3
- TARABA, B. Induction heating – computer modelling and experiment. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 1181 - 1185. ISBN 80-227-2286-3
- KULEMIN, V. – MUDRIK, J. Experimental research of torque influence on torsional vibration of the shaft of gearbox with rotor on flexible supports. In *7<sup>th</sup> International conference DYNAMICS OF MACHINE AGGREGATES*. Bratislava: STU, 2004, p.14. ISBN 80-227-2125-5
- NAĎ, Milan. Influence of constraining layer parameters on dynamical properties of a circular plates. In *Noise and vibration in practice. Proceedings of the 10th International Acoustic Conference*. Bratislava: STU, 2005, s. 47 – 50. ISBN 80-227-2245-6
- NÁNAŠI, Tibor. Estimation of portable grinder dynamical properties from non-synchronous measurements. In *Noise and vibration in practice. Proceedings of the 10th International Acoustic Conference*. Bratislava: STU, 2005, s. 51 - 54. ISBN 80-227-2245-6

ĐURÍŠ, Rastislav – MURÍN, Justín – KUTIŠ, Vladimír. Bar element with varying stiffness for geometric and materials non-linearity. In *10th International Conference on Numerical methods in continuum mechanics and 4th workshop on trefftz methods*. Žilina: ŽU, 2005, nestr. ISBN 80-969165-4-8

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KVASNOVÁ, P. – KVASNA, E. – TARABA, B. – TURŇA, M. Mechanism of aluminium remelting by laser beam welding. In *9. medzinárodná konferencia: 9<sup>th</sup> International Conference : Technológia 2005: Technology 2005*. Bratislava: STU, 2005, s. 503 - 507. ISBN 80-227-2264-2

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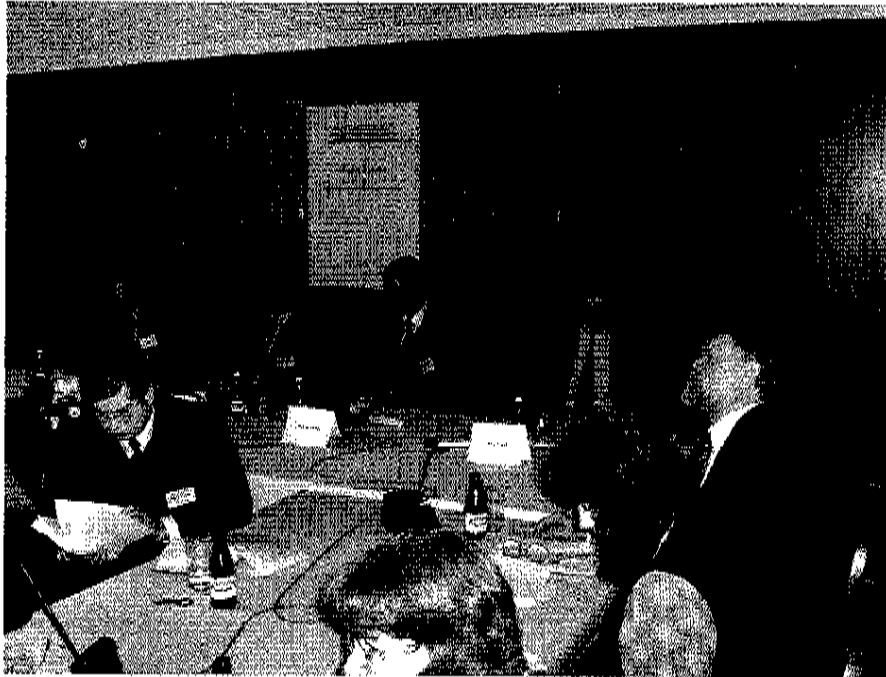
**DEPARTMENT OF ENGINEERING PEDAGOGY AND PSYCHOLOGY**

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**I. STAFF**

Professors:	2	Research Fellows:	3
Assoc. Professors:	4	Technical and Admin. Staff:	3
Senior Lecturers:	7	PhD Students:	7
Lecturers:	0		



**The international research conference CO-MAT-TECH 2005  
The delivery of IGIP certificate**

**II. EQUIPMENT****II.1 Teaching and Research Laboratories****II.2 Special Measuring Instruments and Systems****III. TEACHING****III.1 Bachelor Study (Bc.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Choice Chapters of Pedagogy	1	2-2	Kostelník
School Youth Biology	1	1-1	Tináková
Introduction to University Study	1	1-1	Hrmo
Choice Chapters of Growth and General Psychology	2	2-1	Chmelářová, Bustinová
Basics of Legal Education	2	1-1	Kopšová
Industrial Psychology	6	0-2	Schuller
Introduction to University Study	1	5-4	Hrmo
Choice Chapters of Pedagogy	1	9-9	Kostelník
School Youth Biology	1	5-4	Tináková
Basics of Legal Education	2	0-9	Kopšová
Industrial Psychology	6	0-9	Schuller

**III.2 Graduate Study (Ing.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Pedagogy	1	3-2	Kostelník
Psychology	1	2-2	Chmelářová, Bustinová
Biological Basic of Growth	1	2-0	Tináková
History of Engineering and Vocational Education II.	1	2-0	Hambalík
Didactics of Special Technical Subjects I	2	2-3	Hrmo, Kunderátová
Choice Chapters of Adult Education	2	2-0	Kostelník
Introduction to Scientific Work	2	2-0	Turek
Psychology in Management	3	0-2	Kováč
Psychology in Management	4	0-9	Schuller
Pedagogy	1	14-9	Kostelník
Psychology	1	9-9	Chmelářová, Bustinová
Biological Basic of Growth	1	9-0	Tináková
History of Engineering and Vocational Education II.	1	9-0	Hambalík
Didactics of Special Technical Subjects I	2	9-14	Hrmo, Kunderátová
Choice Chapters of Adult Education	2	9-0	Kostelník
Introduction to Scientific Work	2	9-0	Turek



**III.3 PhD Study (Ph.D)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Methodology of Pedagogical Research – Project I	1	10001-0	Turek
Didactics of Special Technical Subjects	1	21000-0	Turek
Pedagogical Activity I	1	0-003	Turek, Kunderátová
Methodology of Pedagogical Research – Project II	2	20001-0	Turek
Psychology	2	2-0	Kováč
Engineering Pedagogy	2	2-0	Driensky
Pedagogical Activity II	2	0-003	Turek, Kunderátová
Project of Dissertation – Project III	3	00002-0	Turek
Research work I	3		Turek, Kunderátová
Pedagogical Activity III	3	0-004	Turek, Hrmo
Project of Dissertation IV	4	00002-0	Turek
Research work II	4		Turek, Hrmo
Pedagogical Activity IV	4	0-004	Turek, Hrmo
Project of Dissertation V	5	00002-0	Turek
Research work III	5		Turek, Driensky
Pedagogical Activity V	5	0-004	Turek, Driensky
Project of Dissertation VI – Academic Dissertation	6	00002-0	Turek
Pedagogical Activity VI	6	0-004	Turek, Driensky

**IV. RESEARCH TARGETS****V. EDUCATION AND RESEARCH PROJECTS**

- Engineer pedagogy – its dominant determinants and functions after entering Slovakia the European Union. *Grant VEGA 1/2533/05.*
- The Key Competencies of Students in Technical Study Branches in National and European Context. *Grant VEGA 1/2531/05.*
- Implementation of „Quality of School“ to the curriculum of Complementary Teacher Training and experimental verification of education this subjects. *Grant KEGA 3/2380/04.*

**VI. COOPERATION**

- Technische Universität, Dresden
- Muszaki Egyetem, Budapest
- Eszterházy Károly College, Eger
- Uniwersytet Rzeszowski, Polska
- Universität für Bildungswissenschaften, Klagenfurt
- University of Technology, Brno
- University of Palacky, Olomouc
- Technische Universität, Wien
- Technische Universität, Darmstadt
- Technische Hochschule, Hannover
- Technische Hochschule, Zürich
- Masaryk Institute of Advanced Studies, CTU, Prague
- Ukrainian Engineer – Pedagogical Academy, Kharkov Ukraine

**VII. THESIS****VII.1 Graduate Thesis****VII.2 Dissertations (Ph.D.)**

- Uhdeová, Naděžda. The Effectiveness of Computer – aided Education in Engineering Physics.
- Fedorová, Soňa. The Impact of Problem Teaching on the Results of the Teaching Process the subject of Descriptive Geometry.

**VII.3 Habilitations (Assoc. Prof.)****VIII. OTHER ACTIVITIES****VIII.1 Complementary Pedagogical Study - four-semester, daily:***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Pedagogy I	1	2,3-0	Budínek, Kostelník
Psychology I	1	2,3-0	Bustinová, Chmelářová
School Youth Biology	1	1,53-0	Tináková
History of Engineering	1	1,53-0	Hambalík
Pedagogy II	2	1,4-0,92	Budínek, Kostelník
Psychology II	2	1,4-0,92	Bustinová, Chmelářová
Didactics of Special Technical Subjects I	2	1,4-0,92	Hrmo, Krelová Koláříková, Kundráťová, Tináková, Vašková
Didactics of Special Technical Subjects II	3	2,3-0	Hrmo, Krelová Koláříková, Kundráťová, Tináková, Vašková
Adult Education	3	1,53-0	Kostelník, Vašková
Basics of Legal Education	3	1,53-0	Kopšová
Mental Hygiene	3	1,53-0	Schuller
Didactic Techniques	3	1,53-0	Hambalík
Seminar on Pedagogical Practice	4	0-1,53	Hrmo, Krelová Koláříková, Kundráťová, Tináková, Vašková
Pedagogical Practice	4	0-3,1	Hrmo, Krelová Koláříková, Kundráťová, Tináková, Vašková

**VIII.2 Graduation Exam Subjects**

- Pedagogy
- Didactics
- Psychology

In 2005 the Department also delivered the following courses:

- Complementary Pedagogical Study (part-time) - three-semester / 300 hrs *Note:* Both types of the Complementary Teacher Training are accredited by the European Monitoring

Committee of the International Society of Engineering Pedagogy (IGIP) for an „ING.PAED-IGIP“ degree standards.

- Pedagogical Study for Higher Education Teachers - in compliance with the European standards - 204 hrs.
- The Second Qualification Exam for the High School Pedagogical Workers with at least 10-year Experience - 30 hrs and defence of final work.
- Complementary Pedagogical Study for Master of Vocational Training with at least 3-year Pedagogical Experience (part-time) - four-semester / 217 hrs.

## IX. PUBLICATIONS

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**DEPARTMENT OF ENVIRONMENTAL AND SAFETY ENGINEERING**

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**I. STAFF**

Professors:	2	Research Fellows:	1
Assoc. Professors:	5	Technical and Admin. Staff:	3
Senior Lecturers:	1	PhD Students:	8
Lecturers:	5		



Chemical laboratory

## II. EQUIPMENT

### II.1 Teaching and Research Laboratories

- Teaching laboratory for chemistry
- Laboratory of flammability testing
- Laboratory of instrumental methods
- Laboratory of environmental processes
- Microbiological laboratory

### II.2 Special Measuring Instruments and Systems

- Polaro ECOR 626 Metrohm Ltd Swiss DC polarography/voltammetry DP polarography /voltammetry
- PHOTOMETER SQ 118, Merck Germany
- HPLC Hitachi system, Hitachi Belgium
- Spectrophotometer GENESYS 8, Merck Germany
- Electrical equipment for determination of the minimum ignition temperatures of dust, Czech Republic
- Hot-air furnace for determination of the ignition temperatures of solid materials, Czech Republic
- Multi-parameter instrument Multi 340i (measurement of conductivity, dissolved oxygen, pH), Merck Germany

## III. TEACHING

### III.1 Bachelor Study (Bc.)

*H/W: Hours per Week L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Chemistry	1	2-2	Škárka, Michalíková
	2	2-1	Škárka
Occupational Health and Safety	2	1-1	Sabo, Lošák
	2	1-2	Sabo, Lošák
Basics of Environmentalics	1	1-1	Witlinger, Rusko, Širotiak
	2	1-1	Witlinger, Rusko, Širotiak
Ecological Disposal with Materials and Wastes	2	2-0	Balog
	5	3-2	Tureková, Soldán
General Chemistry	2	2-1	Škárka
Basics of Environmental and Safety Informatics	2	2-2	Balog, Rusko
Legislation and technical standards BOZP	2	2-1	Sabo, Turňová
Basics of Environmentalics	4	2-1	Witlinger, Rusko, Širotiak
Basics of Safety Engineering	5	2-1	Sabo, Bábellová
Methods of Risk Assessment	5	2-1	Sabo, Lošák
Basics of Environmental and Safety Management	5	2-1	Sabo, Polívka
Bachelor Project	5	0-2	Department of ESE
	6	0-5	Department of ESE
Industrial Toxicology	5	2-1	Tureková, Balog
	6	2-2	Balog, Tureková, Soldán

Name of subject	Semester	H/W L-P	Reader's name
Reserved Technical Equipments	5	2-1	Sabo, Lošák
Management of Hazardous Activity	5	2-1	Poór
Safety of Working Environment	5	2-2	Tureková
Accident Planning	5	2-2	Kandráč
Noise and Vibrations	5	2-2	Sabo, Lošák
Reliability of Technical Systems	6	1-1	Sabo
Basics of Environmental Engineering	6	3-4	Hostin, Michalíková, Soldán, Soldánová
Basics of Environmental Monitoring	6	3-1	Hostin
Environmental Law	6	2-0	Ruško
Risks of Technical Equipments	6	2-2	Bártlová
Prevention of Explosions and Industrial Safety	6	2-1	Janovský
Measurement and Monitoring of Pollutants	6	3-3	Hostin
Personal Protective and Emergency Equipment	6	2-2	Krajčovičová

### III.2 Graduate Study (Ing.)

*H/W: Hours per Week      L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Environmental Chemistry	7	2-3	Škárka
Methods of Risk Analysis	7	2-1	Sabo (PV)
Recycle Technologies	7	2-1	Wittlinger (PV)
Safety of Technical Systems	7	2-1	Sabo (PV)
Methods of Risk Management	7	2-2	Sabo
Processes and Equipments of Environmental Technologies	7	2-2	Wittlinger
Environmental and Safety Informatics	8	2-2	Balog
Safety of Industrial Technologies	8	2-2	Škárka
Industrial and Natural Accidents	8	2-1	Balog (PV)
Fire Safety of Buildings	8	2-1	Balog (PV)
Environmental Engineering I	8	2-1	Škárka
Fire Engineering	8	2-1	Balog, Lošák
	7	2-1	Balog, Lošák, (PV)
Waste Technologies	9	2-1	Debnár
Environmental Informatics	9	2-3	Balog
Working Environment in Industry	9	2-0	Sabo
Remediation of Ecosystems	9	2-1	Rusko
Monitoring Systems in Environment	9	2-3	Hostin, Michalíková, Soldán, Soldánová
Final Project	9	0-5	Department of ESE

### IV. RESEARCH TARGETS

- Assessment of wastes of cutting fluids, cooling emulsion and their life cycle prolongation, changes of composition during microbial contamination
- Risk assessment and hazard analysis of industrial fire
- Hazard assessment of dangerous wastes and hazardous substances
- Risk assessment of halons and halons alternatives
- Fire hazard analysis of industrial dust and flammable materials
- Safety analysis of technical systems
- The use of progressive oxidation processes for degradation of phenolic substances
- Application of sprinkler SETUR for removal of some water pollutants

## **V. EDUCATION AND RESEARCH PROJECTS**

### **V.1 Institutional Projects**

#### **V.2 National Grants (VEGA, KEGA)**

- VEGA 739/2005 Limiting Condition of Nonflaming and Flaming Initiation and Propagation of Burning Process of Wood and Wood Sawdust
- VEGA 740/2005 Objectivization and optimalization of the risks valuation in technological processes
- VEGA 1/2069/2005 The progressive environmentally appropriate methods for valorization and disposal of the materials from machine industry
- The Government Program of the Research and Development - Social Assurance of Internal PhD. Students, Impact Analysis, Valuation of the Current Situation and Improvement Suggestions of the System

#### **V.3 International Projects**

- European Social Fund – Adaptive Education of Pedagogue for Inovative Technologies
- Equal Project – Support an adaptability of Companies and Employees to the Structural Economic Transformation and to the Informational and another Technologies, Project of European Social Fund

## **VI. CO-OPERATION**

### **VI.1 National Co-operation**

- Technical University of Košice, Faculty of Mechanical Engineering
- Technical University in Zvolen, Faculty of Wood Sciences and Technology
- University of Žilina, Faculty of Special Engineering
- Fire Research Institute Bratislava
- Ministry of the Environment of Slovak Republic
- Slovak Environment Agency, Center of Waste Management, Bratislava
- Ministry of Labour, Social Affairs and Family of the Slovak Republic
- The National Labour Inspectorate
- The Slovak Association of Fire Protection Development
- Academy of Police, Ministry of Interior of the Slovak Republic
- National Fire Protection Association of Slovak Republic
- Nuclear Power Plant Mochovce and Jaslovské Bohunice

### **VI.2 International Co-operation**

- VŠB - Technical University of Ostrava, Faculty of Safety Engineering, Ostrava, Czech Republic
- Technical Institute of Fire Protection, Prague, Czech Republic
- University Pardubice, Department of Theory and Technology of Explosives, Czech Republic
- Czech University of Agriculture, Faculty of Forestry and Environment, Czech Republic
- Association of Fire and Safety Engineering, Czech Republic
- Mendel University of Agriculture and Forestry in Brno, Czech Republic

**VI.3 Contracts with Industry**

- HIVUS Ltd., Žilina (Elimination of air polluted volatile compounds which originate from roasted coffee by ozone)
- POZAGAZ Inc., Malacky (Safety Audit in POZAGAZ Malacky)
- Nuclear Power Plants Jaslovské Bohunice and Mochovce

**VII. THESIS AND DISSERTATIONS****VII.1 Graduate Thesis**

The list of Bachelor Degree Thesis in 2005 (72) available at: <http://olib.cvt.stuba.sk>.

**VII.2 Dissertations (PhD.)****VII.3 Habilitations (Assoc. Prof.)**

- Turekova, I. High-temperature Degradation of Wood Based Materials and Determination of Selected Fire-technical Characteristics
- Hostin, S. Exploitation a Unique Multifunction Hydromotor Setur to Environmental Protection
- Soldán, M. The Dangerous Properties of Phenol and its Derivatives, Monitoring and Removal from Environment

**VIII. OTHER ACTIVITIES****VIII.1 Visits of Staff Members to Foreign Institutions**

- Technical Institute of Fire Protection, Prague, Czech Republic
- VŠB - Technical University of Ostrava, Faculty of Safety Engineering, Ostrava, Czech Republic
- Technical University Budapest, Department of Fire Protection, Hungary
- University Pardubice, Department of Theory and Technology of Explosives, Czech Republic

**VIII.2 Foreign Visitors to the Department**

- Technical Institute of Fire Protection, Prague, Czech Republic
- VŠB - Technical University of Ostrava, Faculty of Safety Engineering, Ostrava, Czech Republic
- Czech University of Agriculture Prague, Faculty of Forestry, Czech Republic
- Department of Work Research, Brandenburg Technical University Cottbus

**VIII.3 Organised Conferences, Seminars and Workshops**

- Integral Safety 2005, October 2005, Bojnice.
- Management of Environment 2005, December 2005, Trnava.

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- LUMNITZER, Ervín – BADIDA, Miroslav – MAJERNÍK, Milan – RUSKO, Miroslav. *Ekologization of product and production*. Košice: TU, 2005. 358 s. ISBN 80-8073-225-6
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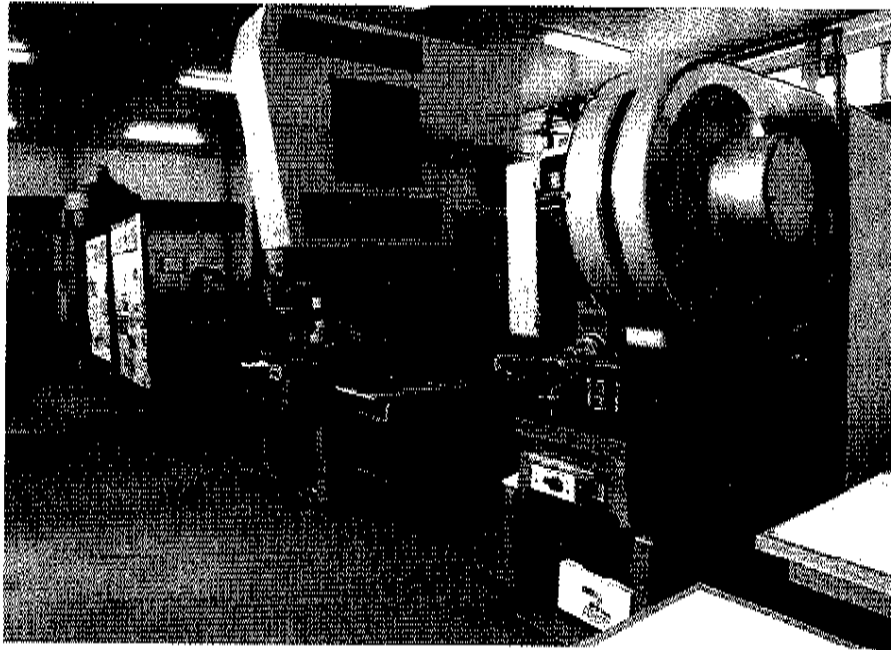
**DEPARTMENT OF FORMING**

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**I. STAFF**

Professors:	2	Research Fellows:	3
Assoc. Professors:	4	Technical and Admin. Staff:	3
Senior Lecturers:	1	PhD Students:	7
Lecturers:	0		



**Eccentric presses**

## II. EQUIPMENT

### II.1 Teaching and Research Laboratories

- Laboratories of Forming
- Laboratories of Computing Machinery
- Laboratories of High-parametric Forming

### II.2 Special Measuring Instruments and Systems

- EU40 and TIRATEST tearing machine
- Hardness tester
- Pendulum impact
- Tool - maker's microscope
- Profile projector
- Pyrometer AMIR 7811-50
- Thermometer TESTO 945

## III. TEACHING

### III.1 Bachelor Study (BC.)

*H/W:* Hours per Week    *L-P:* Lectures-Practices

Name of subject	Semester	H/W L-P	Reader's name
Technology of Forming	5	2-2	Kotras
Technology of Forming	4	2-1	Bača

### III.2 Graduate Study (ING.)

*H/W:* Hours per Week    *L-P:* Lectures-Practices

Name of subject	Semester	H/W L-P	Reader's name
Theory of Forming	7	3-1	Polák, Bílík
Volume Forming	9	3-2	Bača
Plat Forming	9	3-2	Kotras
Machines and Equipment for Forming	8	2-2	Ulík
Final Project	9	0-5	Bača, Kapustová
Technical Preparation for Manufacturing	9	2-2	Polák
Machines for Forming	7	2-2	Ulík
Modelling of Forming Processes	9	2-1	Tittel
Safety of Machines and Production Facilities	9	2-1	Kapustová
Automation of Forming	8	2-1	Ulík
Experimental Methods of Forming	7	2-1	Tittel
High Parametric Forming	9	2-1	Bača
Design Possibilities	9	2-2	Bílík

## IV. RESEARCH TARGETS

- Research of new materials forming
- Formability of new materials
- High parametrical forming
- Hardening of surface layer

- Experimental methods for forming
- Computer Simulation

## **V. EDUCATION AND RESEARCH PROJECTS**

### **V.1 Institutional Projects**

#### **V.2 National Grants (VEGA, KEGA)**

- The nitrooxidation of steel sheets and its influence on pressings strength No.721 VEGA. The project is focused especially on nitrooxidations influence on mechanical and plastic properties of chosen materials. It deals with application possibility of chemical-thermal processing (nitrooxidation) in fluid medium (termofluid) in automotive industry. This new method of chemical-thermal processing enables to increase the quality of processed parts and it is also environment friendly.
- Non-conventional high-parameter forging No.722 VEGA. Project is focused on research of mechanical-thermal effects during forging to achieve the required high metallurgical (chemical composition, structure and phases) a technological (shape, size and properties) parameters especially at dynamically loaded parts with wear of surface layers. It is the research contain isothermal forging processes of Al, Ti and their alloys and also processes of surface layers inversion forging and forging related to electroflux melting.
- The research of non-ferrous alloys plastic properties and their utilization at precision forming. No.703 VEGA. The research of plastic properties in various conditions of metal materials forming and generalization of results by new criterion of metals formability. Experimental verification of new methods for titanium and aluminium alloys at introduction of automatized laboratory measurements results processing of volume forming processes simulation. Verification of formability criterion for precision parts production technology.

## **V. CO-OPERATION**

### **VI.1 National Co-operation**

- University of Žilina, Faculty of Mechanical Engineering, Žilina
- University of Technology Košice, Faculty of Metallurgy, Košice
- University of Technology Košice, Faculty of Mechanical Engineering, Košice
- Slovak University of Technology, Faculty of Mechanical Engineering, Bratislava

### **VI.2 International Co-operation**

- University of mining, TU Ostrava, Czech Republik
- Politechnika Katowice, Poland
- VUT Brno, Czech Republik

### **VI.3 Contracts with Industry**

- HKS s.r.o, Trnava
- Matador – INALFA a.s. , Vrátile

- ŽDAS a.s. , Žďár nad Sázavou

## VII. THESIS AND DISSERTATIONS

### VII.1 Graduate Thesis

The list of Bachelor Degree Thesis (39) in 2004 available at: <http://olib.cvt.stuba.sk>.

### VII.2 Dissertations (Ph.D.)

- Lazar, Roman. The influence of nitrooxidation on mechanical properties and deep-drawing property of low carbon sheet metals.

### VII.3 Habilitations (Assoc. Prof.)

- Tittel, Viktor. Technology of wire drawing.

## VIII. OTHER ACTIVITIES

### VIII.1 Visits of Staff Members to Foreign Institutions

### VIII.2 Foreign Visitors to the Department

### VIII.3 Organised Conferences, Seminars and Workshops

Seminars: - The utilization of SUPERFORM and SUPERFORGE simulation softwares in volume forming processes.  
- Forging 2005.

## IX. PUBLICATIONS

BAČA, Jozef. *Bulk forming. Die forging*. Bratislava: STU, 2005. 161 s. ISBN 80-227-2176-X

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TITTEL, Viktor. Choice of type of lubricant for cold drawing of wire. In *Materials Science and Technology* [online]. 3/2005 [cit. 2005-11-02]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.html>> ISSN 1335-9053

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KAPUSTOVÁ, M. The mathematical model for comfort at work determination in engineering production. In *Acta Metallurgica Slovaca*, 2005, roč. 11, č. 1, s. 126 – 133. ISSN 1335 – 1532

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- LAZAR, Roman – DOMÁNKOVÁ, Mária – KOTRAS, Peter. Analysis of nitrooxidation layer of deep – drawing sheet metals with using TEM and X-rays. In *Vedecká konferencia s medzinárodnou účasťou Konštrukčné materiály 2005*. Bratislava: STU, 2005, nestr. ISBN 80-227-2241-3
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- LAZAR, R. – DOMÁNKOVÁ, M. – KUNÍKOVÁ, T. – KOTRAS, P. Contribution to structural analysis and properties of low-carbon deep-drawing sheet metals treated by thermofluid method. In *Development of materials science in research and education*. Bratislava: NOI, 2005, s. 36 - 37. ISBN 80-89088-42-2
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- LAZAR, R. – DOMÁNKOVÁ, M. – KUNÍKOVÁ, T. – KOTRAS, P. Properties adapting by nitrooxidation low carbon deep-drawing sheets. In *MAT/TECH automobilového priemyslu. Zborník prác VT-seminára s medzinárodnou účasťou*. Košice: TU, 2005, s. 68-72. ISBN 80-8073-400-3
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**DEPARTMENT OF FOUNDRY**

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**I. STAFF**

Professors:	3	Research Fellows:	1
Assoc. Professors:	2	Technical and Admin. Staff:	3
Senior Lecturers:	3	PhD Students:	4
Lecturers:	0		



**The statue of M. R. Štefánik – the bronze casting**

## II. EQUIPMENT

### II.1 Teaching and Research Laboratories

- Laboratory of foundry theory
- Laboratory of powder metallurgy
- Laboratory of plasma-electrolytic technology
- Laboratory of molten metal - foundry
- Laboratory of electromagnetic method and magnetohydrodynamics
- Laboratory of manual formation

### II.2 Special Measuring Instruments and Systems

- The vertical electromagnetic caster for the small profiles
- The high-frequency generator of 400 kHz for the levitation melting
- The medium-frequency induction furnaces 40/2 x 100 kg
- The vacuum induction furnace 50 l
- The electric resistance furnace of 90 kg for non-ferrous metals
- The electric chamber furnace 35 l

## III. TEACHING

### III.1 Bachelor Study (Bc.)

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Engineering Technologies and devices	1	2 - 2	Chaus
Foundry Technology	4	2 - 1	Pokusa, Pokusová
Foundry Technology (Dubnica nad Váhom)	4	2 - 1	Beznák
Foundry Technology (Brezno)	4	2 - 1	Chaus
Foundry Technology (Komárno)	4	2 - 1	Belica
Foundry Technology	6	2 - 2	Podhorský
Semestral Project	5	0 - 2	Podhorský
Bachelor Project	6	0 - 5	Tóth

### III.2 Graduate Study (Ing.)

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Theory of Foundry	7	3 - 1	Murgaš
Non-conventional Metallurgical Processes	9	2 - 2	Murgaš
Foundry Metals and Alloys	9	2 - 2	Chaus
Non-conventional Manufacturing Method in Foundry	9	2 - 2	Beznák
Technologies of Special Cast Irons	9	2 - 1	Murgaš
Nonferrous Metal Castings Production	9	2 - 1	Tóth
Effects of Foundry Technology and PM on Environment	9	2 - 1	Murgaš
Moulds Casting Processes	9	2 - 1	Murgaš
Final Project	9	0 - 5	Tóth, Šuba
Prognosis and World Trends of Foundry and PM development	9	2 - 1	Pokusová

Name of subject	Semester	H/W L-p	Reader's name
Technology of Metal Powders Processing	9	3 - 2	Pokusa
Theory of Metal Powders Production	9	3 - 2	Pokusa
Metalurgical Processes in PM	9	2 - 2	Pokusa
Production and Processing of Ceramic and Friction Materials	9	2 - 2	Šuba
Technical Equipments in Foundry Technology and PM	8	2 - 2	Pokusa
Machines for Welding and Foundry Technology	8	3 - 3	Beznák

#### IV. RESEARCH TARGETS

- Foundry technology - preparation of the molten metal
- Preparation of moulding materials
- Powder metallurgy - technology of the powder processing
- Plasma-electrolytic technology - surface treatment of the metals
- Magnetohydrodynamics
- Continuous casting

#### V. EDUCATION AND RESEARCH PROJECTS

##### V.1 Institutional Projects

##### V.2 National Grants (VEGA, KEGA)

- Project VEGA No. 1/0306/03 – “Research of affects of disperse high melting temperature additions on the structure formation and service properties of cast high-speed steels”
- Project VEGA No. 1/2074/05 – “Non – conventional technology for coatings production on castings”
- Project VEGA No. 1/2114/05 – “ Austenitic chromium-nickel abrasion resistant cast iron”

#### VI. CO-OPERATION

##### VI.1 National Co-operation

- Zlievareň Trnava, Trnava
- Rautenbach Slovakia, Žiar nad Hronom
- Konštrukta, Trenčín
- Illichmann, Žarnovica

##### VI.2 International Co-operation

- Foseco Ceska s.r.o., Czech Republic

##### VI.3 Contracts with Industry

- Kovohuty, Dolný Kubín
- CastArts for slovak sculptors

## VII. THESIS AND DISERTATIONS

### VII. 1 Graduate Thesis

The list of Bachelor and Master Degree Thesis (29) in 2005 available at: <http://oljib.cvl.stuba.sk>.

### VII. 2 PhD Thesis

- Tóth, Roman. The technological aspects of the plasma - electrolytic metal surface treatment.

## VIII. OTHER ACTIVITIES

### VIII. 1 Visits of Staff Members to Foreign Institutions

### VIII. 2 Foreign Visitors to the Department

### VIII. 3 Organized Conferences, Seminars and Workshops

## IX. PUBLICATIONS

KOMAROV, O. S. – KOVALEVSKIJ, V. N. – CHAUS, A. S. – CHRENOV, O. V. – DANILKO, B. M. – ČIGRINOV, V. E. *Technology of konstruktional materials*. Minsk: Novoje znanije, 2005. 559 s. ISBN 985-475-087-6

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- BEZNÁK, M. Production of precision castings from alloys with low melting temperatures by Tekcast method. In *Acta Metallurgica Slovaca*, 2005, roč. 11, č. 3, s. 111 - 115. ISSN 1335 – 1532
- POKUSA, Anton – POKUSOVÁ, Marcela. Castings' coating by the metallic component from the mould facing. In *Slévárenství*, roč. 53, č. 9, s. 404 – 407. ISSN 0037-6825
- MURGAŠ, Marián – BÉLICA, Eugen. Plaster mixtures based on CaSO<sub>4</sub> anhydrite. In *Slévárenství*, roč. 53, č. 9, s. 407 - 410. ISSN 0037-6825
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- CHOVANEC, J. – LEGERSKÁ, M. – CHAUS, A. Effect of annealing on structure of M2 type high-speed steel inoculated by tungsten. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 442 - 447. ISBN 80-227-2286-3
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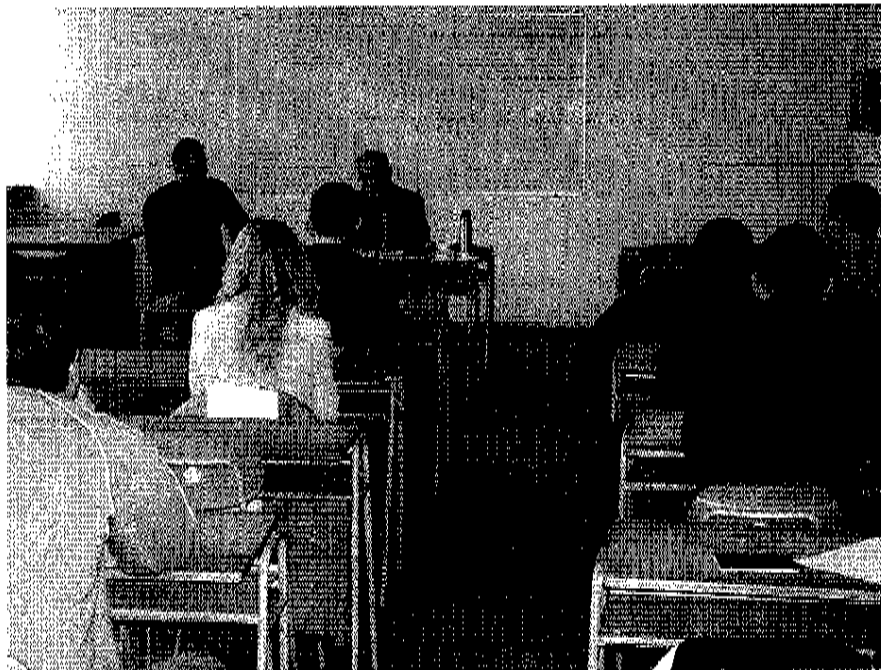
**DEPARTMENT OF HUMANE SCIENCES**

Head of the Department:  
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**I STAFF**

Professors:	0	Research Fellows:	0
Assoc. Professors:	3	Technical and Admin. Staff:	1
Senior Lecturers:	7	PhD Students:	0
Lecturers:	0		



**Testing students**

**II. EQUIPMENT****II.1 Teaching and Research Laboratories****II.2 Special Measuring Instruments and Systems****III. TEACHING****III.1 Bachelor Study (Bc.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
History of the Science and Technology	1	1-1	Petráš
Principles of the Philosophy, Methodology and Logic	1	1-1	Skalský
Philosophy of Technology	2	1-1	Skalský
Foundations of Law for Technitce and Managersl.	5	0-2	Kudla (external)
Ground of the Communication	2	1-1	Olšavská
Sociology	4	0-2	Mocker
General Economic Theory	4	0-2	Mrvová
Politology	3	0-2	Končal
History of Economic Theory	5	1-2	Mrvová
Humane Ecology	6	0-2	Odlerová
Industrial Sociology	5	0-2	Mocker
Sociology of work	1	1-1	Mocker
Synergetic	3	0-2	Olšavská

**III.2 Graduate Study (Ing.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
International Economic Relations	1	1-1	Mrvová
Introduction into methodology and methodics Research Work	3	0-2	Skalský
Prognostics	1	1-1	Olšavská
Social Politics	2	1-1	Holkovič

**IV. RESEARCH TARGETS**

- Human Sciences
- Social Sciences
- Philosophy
- Cosmology
- Physics
- Deep Ecology

**V. EDUCATION AND RESEARCH PROJECTS****V.1 Institutional Projects**

- The Human and Social Sciences - the Adviser Garant of the process Human Education of the Students on the Technical University

**V.2 National Grants (KEGA):**

- E-learning method of teaching of selecting topics of study subjects in personal work of industrial factories.

**VEGA:**

- Psychological, pedagogical and spiritual methods to diagnostics of psychospiritual crises and possibilities of their frame affecting.

**V.3 International Projects****VI. CO-OPERATION****VI.1 National Co-operation****VI.2 International Co-operation**

- Technical University Izhevsk - Russia

**VI.3 Contracts with Industry****VII. THESES AND DISSERTATIONS**

*Supervisors are written in brackets. All theses and dissertations without notice are written in Slovak language.*

**VII.1 Graduate Theses****VII.2 Dissertations (PhD.)****VII.3 Habilitations (Assoc. Prof.)****VIII. OTHER ACTIVITIES****VIII.1 Visits of Staff Members to Foreign Institutions****VIII.2 Foreign Visitors to the Department**

- Ph.D.Assoc.Prof. Alexander Balitsky – Izevsk State Technical University, Russia

**VIII.3 Organised Conferences, Seminars and Workshops**

**IX. PUBLICATIONS**

ODLEROVÁ, Eva. Remarks to some axiological questions of ecophilosophy. In *Vedecké práce MTF STU v Bratislave so sídlom v Trnave*, 2005, č. 18, s. 109 - 116. ISSN 1336-1589

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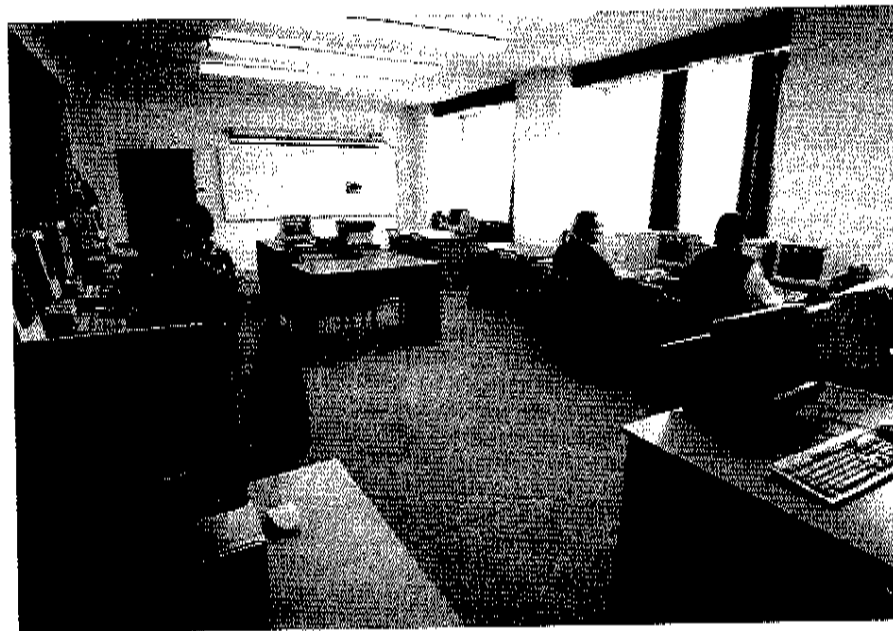
**DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT**

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**I. STAFF**

Professors:	3	Research Fellows:	3
Assoc. Professors:	7	Technical and Admin. Staff:	3
Senior Lecturers:	18	PhD Students:	70
Lecturers:	0		



**The computer room**

**II. EQUIPMENT****II.1 Teaching and Research Laboratory**

- Personal Computer Laboratory
- Ergonomic Laboratory

**II.2 Special Measuring Instruments and Systems**

- Testing system for psychology studies Ergometer
- Basic technical equipment for labour environment studies

**III. TEACHING****III.1 Bachelor Study (Bc.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of Subject	Semester	H/W L-P	Reader's name
Základy manažmentu	1	2-1	Cambál
Semster Project I, II	1,2	0-2	Jedlička, Cambál
Enterprise Economy I	5	3-2	Burc
Enterprise Management	5	3-2	Cambál
Accounting	5	2-2	Horváthová
Ergonomic	5	2-1	Hatier
Semester Project	5	0-2	Štrpka
Marketing	6	3-1	Jedlička
Production Management	6	3-2	Rybanský
Personnel Management	6	2-2	Holková
Computers in Enterprise Practice	6	0-3	Vadkerčí
Enterprise Economy II	6	2-2	Černá
Bachelor Project	6	0-5	Hornák
Basis Management and Marketing	6	3-2	Jedlička
Managerial Ethics	6	2-1	Holková

**III.2 Graduate Study (Ing.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of Subject	Semester	H/W L-P	Reader's name
Innovation Management	1	3-2	Hornák
Operational Research	1	3-3	Štrpka
Strategic Management	2	3-2	Sakál
Semester project I, II	1,2	0-2	Jedlička, Sablik
Production Management II	2	2-2	Rybanský
Financial Management	2	3-2	Brezník
Ergonomic	2	2-1	Hatier
Výrobná prax	2	2 weeks	Štrpka
Managerial Ethics	2	1-1	Burc

Name of Subject	Semester	H/W L-P	Reader's name
Controlling	1	2-1	Brezník
Assertion of Creative Methods	1	1-2	Hornák
System Analysis	1	1-2	Sakál
Starostlivosť o stroje a zariadenia	2	1-1	Jedlička
Economical Analysis	3	2-2	Doubková
Management of Investment Development	3	3-2	Sablík
Project Management	3	2-2	Ončák
Annual project	2	0-5	Jedlička
Final Project	3	0-5	Čambál

#### IV. RESEARCH TARGETS

- Progressive forms of managers education
- Advanced information technologies implementation
- Environmental Management
- Organizational Culture
- Project Management

#### V. EDUCATION AND RESEARCH PROJECTS

##### V.1 Institutional Projects

##### V.2 National Grants (VEGA, KEGA)

- Substance and value of firm industrial and intellectual property, its creation, maintenance, protection, valuation and its main contribution to the firm value maximalization (VEGA 1/2580/05)
- Selection and verification of the appropriate methods for the suggestion, optimisation and supervision of the EU-projects (VEGA 1/2578/05)
- New marketing – management trends leading to increase corporate competitiveness (VEGA 1/2579/05)
- Exploitation personnel indicators at human resource of management in business practice in connection with Slovak republic's entry to the EU (VEGA 1/2586/05)
- The Possibility of Development of Creative Potential of Manager in Small and Middle Enterprise in Slovakia as a Support of Enterprise Culture (VEGA 1/1244/04)
- E-learning utilization in education of production logistics (KEGA 3/3068/05)

##### V.3 International Projects

- Transforming Industry in Slovakia Through Participatory Ergonomics (USA) (International Project MVTs 019/2001)

## **VI. CO-OPERATION**

### **VI.1 National Co-operation**

- Technical University Košice
- Technical University Zvolen
- Faculty of Engineering Bratislava
- Faculty of Engineering Žilina
- University of Economics Bratislava, Faculty of Business Management

### **VI.2 International Co-operation**

- Department of Work Sciences, Brandenburg Technical University, Cottbus, Germany
- Agricultural University of Poznań Chair of Economic and Wood Industry Management, Poznań, Poland
- Institut für Festkörper und Werkstofforschung, Dresden, Germany
- Ufa State Aviation Technical University, Ufa, Russia
- University Pardubice, Faculty of Chemical Technology, Pardubice, Czech Republic
- Technical University of Ostrava, Faculty of Metallurgy and Materials Engineering, Ostrava, Czech republic
- University in Zelena Gora, Poland
- University in Zagreb, Faculty of Forestry, Zagreb, Croatia
- Polytechnic Institute, Kiew, Ukraine

### **VI.3 Contracts with Industry**

- Contract with Jons Manville Slovakia, a.s. in field of work rationalisation
- Contact with OTS, s.r.o Hlohovec: Organisation of Seminar „Brainstorming“
- Contact with Spartan, s.r.o. Trnava (SWEDWOOD Slovakia)

## **VII. THESIS AND DISSERTATIONS**

### **VII.1 Graduate Thesis**

The list of Bachelor Degree Thesis (400) in 2005 available at: <http://olih.cvt.stuba.sk>

### **VII.2 Dissertations (Ph.D.)**

- Viera Bestvinová: Application of controlling in business practice .
- Miriam Chynoradská-Šefčíková: Intangible Assets Valuation

### **VII.3 Habilitations (Assoc. Prof.)**

- Karol Hatiar: Ergonomics in the Research and Education in the areas of Health and Safety, Environmental Health and Industrial Engineering and Management.

### **VII.4 Inauguratings (Prof.)**

- Peter Sakál: Opportunities of system approach applying in the process of industrial enterprise managers education.



## VIII. OTHER ACTIVITIES

### VIII.1 Visits of Staff Members for Foreign Institutions

- Heming institute of Business Administration and Technologies
- Brandenburg Technical University, Cottbus, Germany
- Saubermacher, A.G. Wien, Austria, Project Leonardo da Vinci

### VIII.2 Foreign Visitors to the Department

- Brandenburg Technical University, Cottbus, Germany

### VIII.3 Organised Conferences, Seminars and Workshops

- Scientific Conference „Automotive 2005“
- Specialised course in the field of work rationalisation
- Seminars in the field of project management
- Seminars in the field of manager's skills

## IX. PUBLICATIONS

RYBANSKÝ, Rudolf. *Production Management. Exercise Guide*. Bratislava: STU, 2005. 195 s. ISBN 80-227-2190-5

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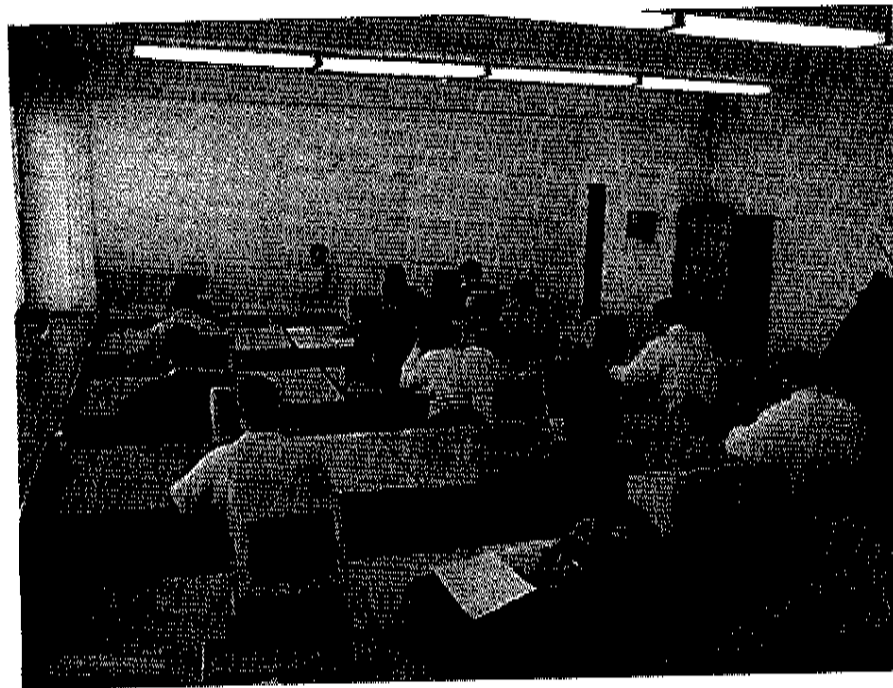
**DEPARTMENT OF INFORMATION TECHNOLOGY AND AUTOMATION**

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**I. STAFF**

Professors:	3	Research Fellows:	2
Assoc. Professors:	5	Technical and Admin. Staff:	4
Senior Lecturers:	15	Ph.D. Students:	9
Lecturers:	0		



**The computer room**

**II. EQUIPMENT****II.1 Teaching and Research Laboratories**

- CAD/CAM System Laboratory
- Automation and Control Laboratory
- Laboratory for software development I
- Laboratory for software development II
- Special PC Laboratory
- Internet Laboratory
- Robotics Laboratory
- Multimedia Laboratory
- Audiovisual classroom
- Data Acquisition laboratory

**II.2 Special Measuring Instruments and Systems**

- PLC Systems

**III. TEACHING****III.1 Bachelor Study (Bc.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Information Technology Basics I,II	1,2	1-2	Schreiber
Programming Languages	1	1-3	Eliáš
Software Technologies I,II	3,4	1-2	Michalčonok, Nemlaha
Graphical Data Processing	5	2-2	Nemlaha
Computer Architecture and Operating Systems	5	2-2	Michalčonok
Software Engineering	5	2-2	Moravčík
Theory of Automatic Control I	16	2-2	Vrban
System Programming	6	2-2	Halenár
Computer Networks	6	2-2	Halenár
Project	6	0-5	Važan, Tanuška
Information Systems I, II	5,6	2-3/4	Tanuška
Computer Science and Society	6	2-0	Moravčík

**III.2 Graduate Study (Ing.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Information System Development	7	2-3	Tanuška
Theory of Automatic Control II	7	2-2	Geše
System Analysis	7	2-1	Schreiber
System Modelling and Simulation	8	2-2	Važan

Name of subject	Semester	H/W L-P	Reader's name
Data visualization	8	3-3	Vaský
Programmable Logical Automatic Machines	7	1-2	Michalčonok
Planning in Production Systems	7	1-2	Iringová
Programmable Logical Controlers	8	2-2	Mudrončík
CAD/CAM Systems	8,9	2-2	Vaský
System Programming I,II	7,8	2-2	Michalčonok, Halenár
Technical Devices of Automatic Control	9	2-2	Michalčonok
Data protection and Information system security	9	2-2	Mišút
Production Systems Design	9	2-3	Božek
Project	9	0-5	Važan
Control of Production Systems	9	2-3	Važan

#### IV. RESEARCH TARGETS

- Control theory, control systems, control systems sensibility and robustness, PLC
- Information and database systems
- Client-server systems (design, tuning, data management, data security, applications)
- Artificial intelligence and expert systems, genetic algorithms
- System modelling and simulation (discrete-event simulation, Petri-nets, queuing theory)
- Computer graphic, graphical and CAD/CAM systems
- CIM
- Multimedia, virtual reality
- e-learning

#### V. EDUCATION AND RESEARCH PROJECTS

- Project ESF - The education of teachers for innovation technology operating. 2005-06
- Project EQUAL – 2005-07
- Project APVT - Application of artificial intelligent methods in modelling and control of critical processes in power industry. 2005-07
- Project APVT – Research of life cycle and ecologization of machining process. 2005-07

##### V.1 Institutional Projects

##### V.2 National Grants (VEGA, KEGA)

- Analysis of the parametrical sensitivity of dynamic systems and processes – VEGA
- Digital phase control system of high accuracy electric drives and their imitation through computer simulation means – VEGA
- New algorithms of power system control in primary and secondary control – VEGA
- A program system for generating 3D model from technical drawing – VEGA
- Virtual laboratory of production system control – KEGA
- New learning technologies – KEGA
- Virtual laboratory of controllers – KEGA
- Virtual laboratory of robotics – KEGA

##### V.3 International Projects

- Socrates Programme (student mobilities abroad, 10 stays in Germany, 2 in Belgium)

- PTP I-II – Partnership for Tomorrow (University of Alberta, Canada), Quality Assurance of High Education

## VI. CO-OPERATION

### VI.1 National Co-operation

- Faculty of Electrotechnic and Computer Science STU Bratislava
- Faculty of Engineering STU Bratislava
- Trnava University Trnava
- University of Cyril and Metod Trnava
- Faculty of Electrotechnic TU Košice
- Fakulty of pedagogical sciences UKF Nitra
- Faculty of Engineering Žilina
- Research Institute of Nuclear Power Supply Trnava
- Nuclear Power Station Jaslovske Bohunice
- AITEN ltd. Trnava

### VI.2 International Co-operation

- IFW e. V. Dresden, Germany
- Politechničeskij universitet Peterburg, Russia
- University of Zelona Gora, Poland
- Politechničeskij institut Iževsk, Russia
- KAHO Gent, Belgium
- FH Köthen, Germany
- FH Darmstadt, Germany
- Brandenburgische Technische Universität, Cottbus, Germany

### VI.3 Contracts with Industry

- The maintenance of the waste management system in the Nuclear power station Jaslovske Bohunice
- IT courses in the Nuclear power station Jaslovske Bohunice
- IT courses in the SE-VYZ
- Development of nuclear fuel database
- Project of a support system for the accident control in the Nuclear power station Jaslovske Bohunice (contract with the Research Institute of Nuclear Power Supply Trnava)
- The implementation of the methodology for integral scantiness benchmark of C30
- The evaluation of measured values in TDS system.
- The modifying of ATDS system
- Development of IS for law office – active debts

## VII. THESIS AND DISSERTATIONS

### VII.1 Graduate Thesis

The list of Bachelor (109) and Graduate Degree (99) Thesis in 2005 available at:  
<http://olih.cvt.stuba.sk>.

## VII.2 Dissertations (Ph.D.)

- Nagy, Roman. Automation of test scenario based on software specification in UML.
- Procháska, Ján. Application of genetic algorithm in test intervals optimisation.
- Miksa, František. Residual tensinty study at track vehicles and its decreasing possibilities.

## VII.3 Habilitations (Assoc. Prof.)

## VIII. OTHER ACTIVITIES

### VIII.1 Visits of Staff Members to Foreign Institutions

- IFW Dresden, Germany (1 stay)
- FH Köthen, Germany (2 stays)

### VIII.2 Foreign Visitors to the Department

- FH Köthen, Germany (1 stay)
- IFW Dresden, Germany (3 stays)

### VIII.3 Organised Conferences, Seminars and Workshops

## IX. PUBLICATIONS

BOŽEK, Pavol – MIKSA, František – NEMLAHA, Eduard. *Production Systems Design II*. Trnava: Tripsoft, 2005. CD. ISBN 80-969390-1-7

JUHÁS, Martin – HUSÁROVÁ, Bohuslava – SCHREIBER, Peter – TANUŠKA, Pavol – VAŽAN, Pavol. *Database Systems*. Trnava: Tripsoft, 2005, CD. ISBN 80-969390-3-3

VAŽAN, Pavol – SCHREIBER, Peter – TANUŠKA, Pavol. *Systems Modelling and Simulation*. Trnava: Tripsoft, 2005. CD. ISBN 80-969390-2-5

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- TANUŠKA, Pavol – SCHREIBER, Peter. The software products testing process. In *Materials Science and Technology* [online]. 5/2005 [cit. 2005-12-20]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.htm>> ISSN 1335-9053
- ELIÁŠ, Andrej – TANUŠKA, Pavol – VAŽAN, Pavol. The dose rate monitoring system through the mobile units. In *Materials Science and Technology* [online]. 5/2005 [cit. 2005-12-20]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.htm>> ISSN 1335-9053
- HALENÁR, Igor – HALENÁR, Róbert. Application Design and its Impact on Software Usability. In *Manufacturing Engineering – Výrobné inžinierstvo*, 2005, roč. 4, č. 3, s. 68-69. ISSN 13356-7972
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- BOŽEK, Pavol. Valuation of quality level of car components. In *Strojárstvo-Strojirenství*, 2005, roč. 9, č. 7-8, s. 59. ISSN 1335-2938
- BOŽEK, Pavol. Verification measuring system of car technical subgroup in operation. In *Strojárstvo-Strojirenství*, 2005, roč. 9, č. 9, s. 115. ISSN 1335-2938
- BOŽEK, Pavol. Control process and hardware of automated testing system. In *Strojárstvo-Strojirenství*, 2005, roč. 9, č. 10, s. 58. ISSN 1335-2938
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- BOŽEK, Pavol. Application of crash state control of transportation and operating devices at virtual environment. In *Strojárstvo-Strojirenství*, 2005, roč. 9, č. 12, s. 59. ISSN 1335-2938
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- ELIÁŠ, A. – MUDRONČÍK, D. Control of virtual technological processes using virtual process controller KRG90. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 255 - 261. ISBN 80-227-2286-3
- HORVÁTH, A. – SCHREIBER, P. Other procedures of generating face with the genetic algorithms. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 385 - 392. ISBN 80-227-2286-3
- HUSÁROVÁ, B. – JUHÁS, M. Advanced simulation model design for home temperature adjustment. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 413 - 419. ISBN 80-227-2286-3
- IRINGOVÁ, M. – BEZÁK, P. Interactive application for workplaces deployment with using of method of centre. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 457 - 462. ISBN 80-227-2286-3



**VII.2 Dissertations (Ph.D.)**

- Nagy, Roman. Automation of test scenario based on software specification in UML.
- Procháška, Ján. Application of genetic algorithm in test intervals optimisation.
- Miksa, František. Residual tensy study at track vehicles and its decreasing possibilities.

**VII.3 Habilitations (Assoc. Prof.)****VIII. OTHER ACTIVITIES****VIII.1 Visits of Staff Members to Foreign Institutions**

- IFW Dresden, Germany (1 stay)
- FH Köthen, Germany (2 stays)

**VIII.2 Foreign Visitors to the Department**

- FH Köthen, Germany (1 stay)
- IFW Dresden, Germany (3 stays)

**VIII.3 Organised Conferences, Seminars and Workshops****IX. PUBLICATIONS**

BOŽEK, Pavol – MIKSA, František – NEMLAHA, Eduard. *Production Systems Design II*. Trnava: Tripsoft, 2005. CD. ISBN 80-969390-1-7

JUHÁS, Martin – HUSÁROVÁ, Bohuslava – SCHREIBER, Peter – TANUŠKA, Pavol – VAŽAN, Pavol. *Database Systems*. Trnava: Tripsoft, 2005. CD. ISBN 80-969390-3-3

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BOŽEK, Pavol. Economics factors valuation in car components production with automatic testing. In *Sociálno-ekonomické spravovanie : teória i praktika*, 2005, č. 1-2, s. 3 – 9. ISSN 1815-7946

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BOŽEK, Pavol – PIVARČIOVÁ, Elena. Application of automatic protection process systém of multimedia content on CD. In *Materials Science and Technology* [online]. 3/2005 [cit. 2005-11-02]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.html>> ISSN 1335-9053

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- BOŽEK, Pavol. Valuation of quality level of car components. In *Strojárstvo-Strojirenstvi*, 2005, roč. 9, č. 7-8, s. 59. ISSN 1335-2938
- BOŽEK, Pavol. Verification measuring system of car technical subgroup in operation. In *Strojárstvo-Strojirenstvi*, 2005, roč. 9, č. 9, s. 115. ISSN 1335-2938
- BOŽEK, Pavol. Control process and hardware of automated testing system. In *Strojárstvo-Strojirenstvi*, 2005, roč. 9, č. 10, s. 58. ISSN 1335-2938
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- BOŽEK, Pavol. Application of crash state control of transportation and operating devices at virtual environment. In *Strojárstvo-Strojirenstvi*, 2005, roč. 9, č. 12, s. 59. ISSN 1335-2938
- BEZÁK, P. – IRINGOVÁ, M. Using genetic algorithms to achieve autonomus motion of robot ARM. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 103 - 110. ISBN 80-227-2286-3
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- RAKOVSKÝ, M. – MUDRONČÍK, D. Software support for pilot bus reduction. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 990 - 997. ISBN 80-227-2286-3
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- STRÉMY, M. – MICHAUČONOK, G. Control system with combined interruption. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 1100 - 1103. ISBN 80-227-2286-3
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- VASKÝ, J. – ELIÁŠ, M. – PALAJ, J. 3D solid model generation from 2D vector drawing. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 1306 - 1311. ISBN 80-227-2286-3
- VAŽAN, P. – SEDLÁK, V. – BEZÁK, T. Combined simulation in simulator witness. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 1312 - 1317. ISBN 80-227-2286-3
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- MUDRONČÍK, D. – TAUFER, I. Industrial Controller – Engineering vs. Education. In *15th International Conference on Process Control 05*. Bratislava: STU, 2005, s. 207 - /1-6. ISBN 80-227-2235-9
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BOŽEK, P. – VIDOVÁ, E. Control of robotized technological workplace at virtual environment. In *TechMat 05 : Perspektivní technologie a materiály pro technické aplikace*. Pardubice: UP, 2005, s. 103 - 104. ISBN 80-7194-803-9

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KOLENO, A. – JASENÁK, J. – MIKSA, F. – ŠÍPEK, V. Residual tension in material. In *Zborník prednášok. Odborný seminár s medzinárodnou účasťou Inovatívne technológie vo zváraní a NDT*. Bratislava: Slovenská zväračská spoločnosť, 2005, nestr. ISBN 80-969393-2-7

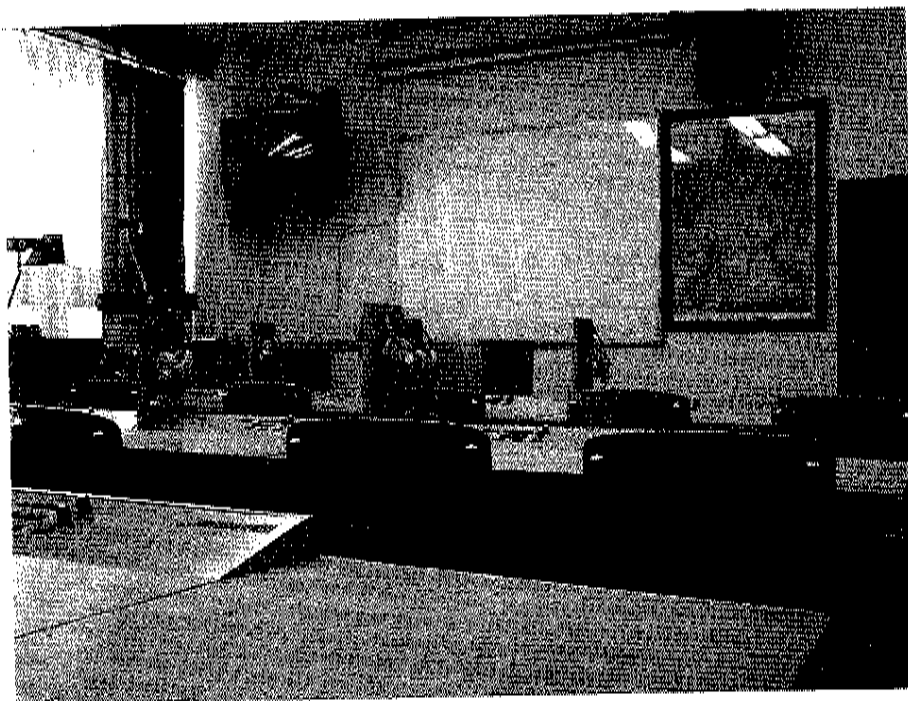
## DEPARTMENT OF LANGUAGES

Head of the Department:  
Juraj Miština, MSc. Eng.

Tel.: ++421-33-511 500  
Fax: ++421-33-511 758  
E-mail: [kojp@mtf.stuba.sk](mailto:kojp@mtf.stuba.sk)

## I. STAFF

Professors:	0	Research Fellows:	0
Assoc. Professors:	0	Technical and Admin. Staff:	1
Senior Lecturers:	10	PhD Students:	0
Lecturers:	0		



Language laboratory

**II. EQUIPMENT****II.1 Teaching Language Laboratories**

- Audio-Video Workshop

**II.2 Special Measuring Instruments and Systems****III. TEACHING****III.1 Bachelor Study (Bc.)**

*H/W: Hours per Week L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
English	2 – 5	0-2	Mironovová, Rusková, Miština, Waleková, Čagáňová, Česneková
German	2 – 5	0-2	Reháková, Fedič, Česneková
Russian	2 – 5	0-2	Rusková, Bujnová
French	2 – 5	0-2	Nižnarová

**III.2 Graduate Study (Ing.)****III.3 Ph.D. Study**

*H/W: Hours per Week L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
English	1/2	0-2	Mironovová, Miština, Čagáňová
German	1/2	0-2	Reháková
Russian	1/2	0-2	Bujnová

**IV. RESEARCH TARGETS**

- Improving professional communication of PhD candidates in written and spoken English using e-mail and Internet
- Investigating methodological aspects of foreign language teaching and implementation of the research results into educational process.
- Foreign language curriculum improvement based on the needs analysis of the Faculty graduates and undergraduates in the field of international professional communication.
- Setting the network for professional information exchange and disseminating effective and attractive LSP (Languages for Specific Purposes) ideas.
- Joining other national networks, disseminating the Slovak experience abroad, strengthening the position and status of the language departments in the engineering universities, basically the status of the Faculty and Slovak University of Technology, innovating continuously the ESP content, tailoring it to the needs of opening global job market.
- Investigating methodology aspects of information and communication technology (ICT) and multimedia use in teaching languages for specific purposes. Developing students' specific skills in the field of using advanced presentation technology, ICT and electronic presentation materials design and soft skills.

## V. EDUCATION AND RESEARCH PROJECTS

### V.1 Institutional Projects

#### V.2 National Grants (VEGA, KEGA)

- Designing Interactive Multimedia Teacher Training Programme for Teachers of Foreign Languages for Specific Purposes. KEGA research grant No 3/57294 327.  
The purpose of the Project is to design an open teacher training programme in a form of an interactive CD which will reinforce the Project impact. The Project team is working on an interactive multimedia material, where teaching tips will be supported by pictures, video clips, animation and other forms of visualisation to make it more attractive and user friendly not only for participants, but in a form of interactive compact disc or web site for wider range of potential users. The ambition of the Project is to cater for wide scale of professional needs and interests of the language teachers, to set the network for professional information exchange and disseminate effective and attractive LSP ideas via internet or using IT. The Project had an ambition to become a model of alternative in-service training for foreign language teachers, or as a model for on-line teacher training in Slovakia.

#### V.3 International Projects

- A Model for an International Collaborative Student Experience - technical English collaboration between Purdue University (USA) and Slovak University of Technology, University Grant (US – SK bilateral project).
- “The Cultured Engineer – The Historical, Philosophical and Ethical Foundation of the Engineering Profession”. Project no.: 29079-IC-1-2005-1-DK-ERASMUS-MOD.
- The principal aim of the project is within a two-year period to develop and promote a module to be incorporated into the curricula of all engineering study programmes in the final year of the bachelor programme. The module corresponding to a standard module (48-hour class contact + 24-hour personal work) is to be accredited 6 ECTS points. A basic idea is that this module should be obligatory in engineering degree courses at partner institutions, but the possibility of making it optional is open, whenever required by local/national higher education regulations.
- Furthermore, the aim is to develop and promote suitable educational materials for the module. An interdisciplinary group of 19 persons - engineers (all with Ph.D. degrees and Master's degrees) and people with an education in liberal arts (Master's degrees, Ph.D. degrees in philosophy and literature) will write a 300-page book for the module, addressing the above-mentioned elements a-h and provide additional background and case material for the module.

## VI. CO-OPERATION

### VI.1 National Co-operation

- Language Department, Faculty of Electrical Engineering and Information Technology  
STU Bratislava

### VI.2 International Co-operation

- The British Council in Bratislava
- Purdue University, Kokomo, Indiana, USA

- The Goethe Institute in Bratislava
- Ambassade de France en Slovaquie, Service de Cooperation et D'Action Culturelle
- Herning Institute of Business Administration and Technology, Denmark
- Copenhagen University, School of Engineering, Denmark
- ČVUT (Czech Technical University), Prague, Czech Republic

### VI.3 Contracts with Industry

## VII. THESIS AND DISSERTATIONS

### VII.1 Graduate Thesis

### VII.2 Dissertations (Ph.D.)

### VII.3 Habilitations (Assoc. Prof.)

## VIII. OTHER ACTIVITIES

### VIII.1 Visits of Staff Members to Foreign Institutions

- Mgr. Juraj Miština - ČVUT (Czech Technical University), Prague, Czech Republic - Socrates Erasmus teacher's mobility;
- PhDr. Emília Mironovová, Herning Institute of Business Administration and Technology, Denmark - Socrates Erasmus teacher's mobility;

### VIII.2 Foreign Visitors to the Department

- Assoc. Prof. Kevin Taylor, Purdue University, Kokomo, Indiana, USA

### VIII.3 Organised Conferences, Seminars and Workshops

- Students Scientific Conference / English and German Language Sections, April 2004

## IX. PUBLICATIONS

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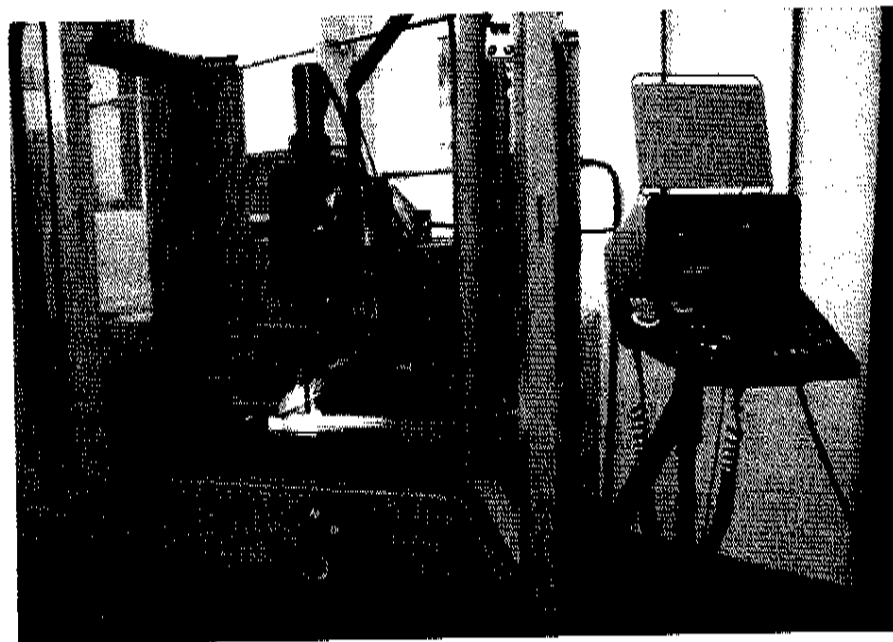
**DEPARTMENT OF MACHINING AND ASSEMBLY**

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**I. STAFF**

Professors:	3	Research Fellows:	2
Assoc. Professors:	6	Technical and Admin. Staff:	4
Senior Lecturers:	2	PhD Students:	5
Lecturers:	2		



„DECKEL“ CNC milling machine

**II. EQUIPMENT****II.1 Teaching and Research Laboratories**

- Measurement Laboratory
- Assembly Laboratory
- Mechanical Engineering Laboratory
- CAD/CAM Laboratory

**II.2 Special Measuring Instruments and Systems**

- CCD camera
- Zeiss length gauge 1 m
- Zeiss universal microscope
- Zeiss universal length gauge
- Hilger Watts autocollimator + mirror polygon
- Zeiss collimator + telescope

**II.3 Special Technological Equipment**

- Milling machine Deckel inclusive educational computerised system
- CNC lathe SUI 500 Combi
- CNC milling machine EAGLE 1000

**III. TEACHING****III.1 Bachelor Study (Bc.)**

*H/W: Hours per Week L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Machining Technology and Metrology	4	3-2	Lipa, Maduda
Machining technology	5	2-2	Peterka, Lipa
Fundamentals of Assembly	5	2-0	Valentovič
Metrology Practice	5	0-3	Maduda, Görög
Semester Project	5	0-2	Janáč
Bachelor Theses	6	0-5	Janáč
Metrology	6	2-1	Maduda, Görög
CAD/CAM systems	6	2-2	Peterka

**III.2 Graduate Study (Ing.)**

*H/W: Hours per Week L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Machining Theory	1	2-2	Peterka
Assembly Theory	1	2-1	Valentovič
Machining Technology	1	2-1	Baránek, Peterka
NC Machine Programming	1	1-2	Peterka, Görög
Cutting Machines and Tools	2	3-2	Valentovič, Baránek
CA Technologies	2	1-2	Peterka

Name of subject	Semester	H/W L-P	Reader's name
Geometrical Product Specification	2	1-1	Štefánek
Measurement and Controlling of workpieces parameters	2	1-1	Maduda
Progressive Machining Methods	3	3-2	Štefánek
Production Planning	3	2-2	Štefánek
Mechanisation and Automation	3	3-2	Valentovič
Final Project	3	0-5	Janáč
Finishing Machining Methods	3	2-1	Lipa
Experimental Machining Methods	3	2-1	Lipa
CAD/CAM Systems	3	1-2	Peterka
Machines, tools and materials for free shape machining	3	3-2	Valentovič, Baránek
CA technologies	3	3-2	Peterka
Modell Studio	3	2-2	Peterka
Progressive Methods of Machinery Product Assembly	3	2-2	Valentovič
Software for Production of Artistic Surfaces	3	0-2	Peterka
Unconventional Machining Technologies	3	2-1	Štefánek
Font Design	3	1-2	Peterka
Prediploma praxis	4		
Diploma project	4		

#### IV. RESEARCH TARGETS

- Theory of machined parts manufacturing, creatics, measurement and assembly,
- CIM, CAD/CAM, CAPP, CAQ, CAA.
- 3D art engraving,
- Manufacturing of dies,
- Quality of measurements.

#### V. EDUCATION AND RESEARCH PROJECTS

##### V.1 Institutional Projects

##### V.2 National Grants (VEGA, KEGA)

- Mathematical methods in production metrology 1/0303/03 (Janáč, A.)
- New production methods, new methods of verification and assembly of complex shaped and precise surface parts 1/0302/03 (Peterka, J.)
- Theory of finishing processes in machining. 1/1079/04 (Lipa, Z.)
- Generating of multimedial, modular teaching software for programming of NC machines 3/2380/04 (prof. Peterka)

##### V.3 International Projects

- CEEPUS PL-0127-03/04 Computer-Aided Systems for Manufacture and Measurement of Machine Elements (Janáč, A.)
- CEEPUS RO-137-03/04 The implementation of European Credit Transfer System into the Short Time Higher Education (Janáč, A.)

**VI. CO-OPERATION****VI.1 National Co-operation**

- Faculty of Mechanical Engineering, Slovak University of Technology, Bratislava
- Slovak Academy of Science
- University of A.Dubcek, Trenčín
- University of Žilina
- Technical University Košice

**VI.2 International Co-operation**

- TU Ostrava, Czechia
- Faculty of Mechanical Engineering, Technical University of Vienna, Austria
- Faculty of Mechatronics and Machinery Design, Kielce, Poland
- ČVUT Praha, Czechia
- VUT Brno, Czechia
- TU Novi Sad, Serbia and Montenegro
- TU Kragujevac
- TU Niš, Serbia and Montenegro
- Johannes Kepler Universität Linz

**VI.3 Contracts with Industry**

- VUNAR a.s. Nové Zámky
- MAGNA SLOVTECA s.r.o. Nové Mesto nad Váhom
- Jacobs Suchard Figaro a.s. Bratislava
- SKLOPLAST a.s. Trnava
- SACHS Slovensko s.r.o. Trnava
- TZK a.s. Trnava
- TOMA Trnava
- TRENŠ Trenčín
- IDC Holding Trnava
- TESS-Servis s.r.o. Piešťany
- Atómové elektrárne Jaslovské Bohunice
- SONY Trnava

**VII. THESIS AND DISSERTATIONS****VII.1 Graduate Thesis**

The list of Bachelor Degree Thesis (60) in 2005 available at: <http://olib.cvt.stuba.sk>.  
The list of Engineer Thesis (44) in 2005 available at: <http://olib.cvt.stuba.sk>

**VII.2 Dissertations (Ph.D.)**

- Bónišová, M. Machinability of super Finish.

**VII.3 Habilitations (Assoc. Prof.)**

- Görög, A. Solution of selections machining metrology problems.

**VII.4 Inaugurations (Prof.)**

- Lipa, Z. Models of chip formation by rough and finish machining of metals.

**VIII. OTHER ACTIVITIES****VIII.1 Visits of Staff Members to Foreign Institutions**

- TU Vienna (Austria)
- WUT Warsaw (Poland)
- ČVUT Praha (Czechia)
- VUT Brno (Czechia)
- VŠB Ostrava (Czechia)
- TU Kielce (Poland)
- TU Zagreb (Croatia)
- IOS Krakov (Poland)
- TU Niš, Serbia and Montenegro

**VIII.2 Foreign Visitors to the Department**

- Prof. P. H. Osanna (TU Vienna), Ass. Prof. N. M. Durakbasa (TU Vienna), Prof. K. Kocman (VUT Brno), Prof. Dr. – Ing. Marcel S. Popa (TU Cluj), Prof. Ing. S. Adamczak, DrSc. (University Kielce)
- Assoc. Prof. Lj. Djordjevic (University of Kragujevac)

**VIII.3 Organised Conferences, Seminars and Workshops**

- Seminar New cutting tools
- Seminar Development of new tools and new coatings
- Seminar Trends in development of CNC programming and computer supported pre-production and production steps

**IX. PUBLICATIONS**

VELÍŠEK, Karol – PECHÁČEK, František – KOŠTÁL, Peter – ŠTEFÁNEK, Michal. *Assembly machines and equipment*. Bratislava: STU, 2005. 197 s. ISBN 80-227-2187-5

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**DEPARTMENT OF MATERIALS ENGINEERING**

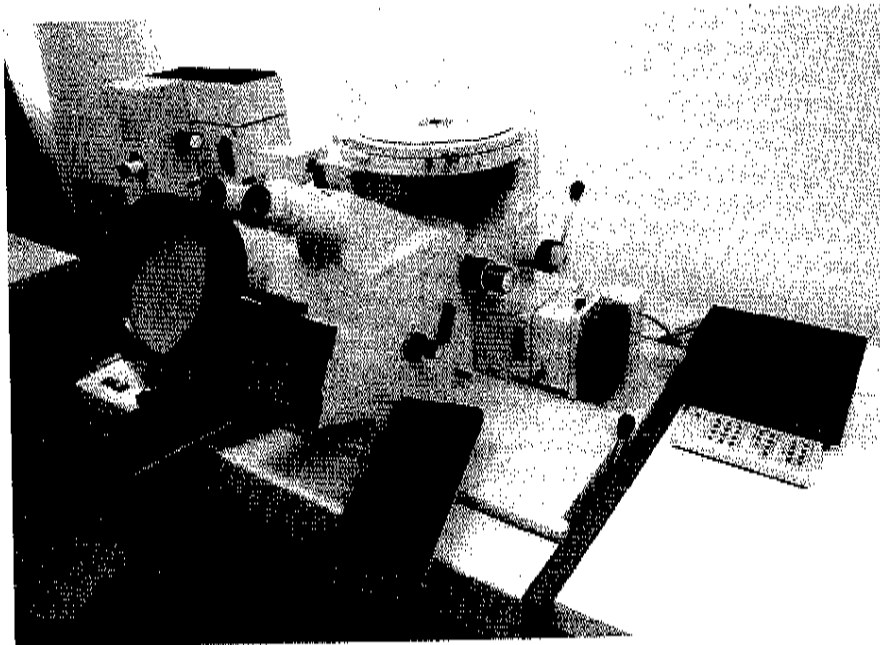
Head of the Department:  
Peter Grgač, PhD, Prof.

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**I. STAFF**

Professors:	3
Assoc. Professors:	3
Senior Lecturers:	9
Lecturers:	0

Research Fellows:	5
Technical and Admin. Staff:	6
PhD Students:	5



**Metallographic microscope**

**II. EQUIPMENT****II.1 Teaching and Research Laboratories**

- X-ray Diffraction Laboratory
- Electron Microscopy Laboratory
- Light Microscopy Laboratory
- Laboratory of Physical Measurement
- Mechanical Testing Laboratory
- Heat Treatment Laboratory
- Laboratory of Hard Magnetic Materials
- Laboratory of Vacuum and Plasma Metallurgy
- Laboratory of Isostatic Pressing
- Electron Probe Microanalysis Laboratory
- Metallography Centrum of Excellence

**II.2 Special Measuring Instruments and Systems**

- Transmission Electron Microscopes JEOL 200 CX, TESLA BS 500
- Microanalyser SEMQ
- Scanning Electron Microscopes TESLA BS 300, TESLA BS 343
- X-ray Diffractometers, HZG 4, MIKROMETA 2, Philips PW1710
- Light Microscopes NEOPHOT 21, NEOPHOT 32
- Induction Thermomagnetometer
- Line Precisions Saw ISOMET 5000, Automatic Mounting Press SIMPLIMET 1000, Grinder-Polisher MINIMET 1000 Automatic Grinder-Polisher BETA with VECTOR Power Head
- Microhardness Tester IDENTAMET 1105
- Carbon Coater Equipment
- Diferencial Thermic and Dilatometric Analyser NETZSCH 402
- Image Analyser MINI BVS
- FPZ 100/1 Direct Stress Testing Machine
- EDZ 40 dyn Direct Stress Lasting Machine
- Hardness Testers ZWICK 3212, RB 1, HPO 250, HPO 3000
- Pendulum Impact Testing Machines PS 30
- Isostatic Press QICH 16
- Vacuum furnaces KOOP, Degussa
- Plasma furnace

**III. TEACHING****III.1 Bachelor study (Bc.)**

*H/W:* Hours per Week      *L-P:* Lectures-Practices

Name of subject	Semester	H/W L-P	Reader's name
Engineering materials	1	3-2	Martinkovič
Material Science I	2	3-3	Grgač, Martinkovič

Name of subject	Semester	H/W L-P	Reader's name
Materials Science II	3	3-3	Moravčič
Heat Treatment Technology	5	1-2	Grgač
Mechanical Testing and Defectoscopy of Materials	5	2-2	Martinkovič
Experimental Methods in Research of Material Structure and Properties	5	2-2	Čaplovič
Semestral Project	5	0-2	Martinkovič
Heat Treatment of Materials	6	1-2	Grgač
Bachelor Thesis	6	0-5	Martinkovič
Corrosion and Surface Treatment	6	2-2	Březina

### III.2 Graduate study (Ing.)

*H/W:* Hours per Week      *L-P:* Lectures-Practices

Name of subject	Semester	H/W L-P	Reader's name
Advanced Materials and Technology	1	2-2	Grgač
Vacuum Technology in Mechanical Engineering	1	2-2	Žitňanský
Physical Metallurgy and Threshold States of Materials	1	2-2	Dománková
Theory of Phase Transformation	2	2-2	Dománková
Experimental Methods in Material Research I	2	2-2	Čaplovič
Metallography	3	2-1	Čaplovič
Composite Materials	3	2-2	Šebo
Experimental Methods of Material Research II	3	2-2	Čaplovič
Degradation Processes and Time Life Prediction	3	2-2	Hazlinger
Final Project	3	0-5	Ožvold
Fractography	3	2-1	Bošanský
Vacuum Technology in Heat Treatment	3	1-2	Žitňanský
Advanced Methods of Heat Treatment	3	2-2	Hazlinger
Materials of Nuclear Power Plant Facilities	3	1-1	Kupča
Projecting of Heat Treatment Production Processes and Systems	3	2-2	Onderčanin

### IV. RESEARCH TARGETS

- Vacuum metallurgy, metal refinement, crystallisation of metals, materials science
- Tool steels and nickel alloys
- Biocompatible materials
- Powder metallurgy
- Corrosion resistant steels
- Weldability of steels
- Hard magnetic materials
- Boronizing of steels

## V. EDUCATION AND RESEARCH PROJECTS

### V.1 Institutional Projects

### V.2 National Grants (VEGA, KEGA)

- Research and development of preparation of Ti alloy for implants. VEGA 1/1081/04, (Žitňanský, M.). Conception of scientific research is based on gradual building of high-tech centre with the use of significant computer technology support in network: Design of individual implant 3D. Implant model preparation by using Rapid Prototyping-model analysis by orthopaedic surgeon. Implant creating by using Rapid Technologies. Investment casting of microcasts. Special modification of microstructure with firm characteristics prediction. Implant testing by certified centre. Creating of integrated bio-layer on implants. Implantation by original methods and original instruments that represents novelty in the Slovak republic
- Development of methods of human anatomic skeleton implants preparation. APVT-20-050702, (Žitňanský, M.). Research and development of a model total hip replacement (THR) and spinal fixator with the goal to construct at prevalence measure so working process utilising contemporary research knowledge of top Slovak specialists in materials research and orthopaedic surgery
- New wear resistant materials of eutectic type. VEGA 1/0305/03, (Grgáč, P.). The complex oriented project is aimed at the study of rapid solidification of undercooled melts of novel high alloyed alloys of eutectic type in the discrete microvolumes. The influence of consequences of rapid nonequilibrium solidification on the structure development and phase composition of compacts from rapidly solidified powder in the process of hot isostatic pressing will be analysed in details using the physical methods of material study. The connection between experimental results and numerical simulations of rapid cooling and solidification of alloys with intermediate phases of solidification origin in microvolumens will be studied
- Study of the plastic deformation influence to corrosion resistance of some austenitic stainless steels. VEGA 1/2113/05, (Dománková, M.). Austenitic stainless steels are prone to sensitisation. In the sensitised condition, the steels are quite susceptible to intergranular corrosion and intergranular stress corrosion cracking. The sensitisation is caused by the precipitation of chromium rich carbides at the grain boundaries. The precipitation of carbides  $M_{23}C_6$  causes formation of the chromium depletion regions with a chromium content below 12 wt.%. The goal of this project is characterisation and quantification of factors influencing the sensitisation of the AISI 304 and AISI 316 type steels. The project will be concentrated on quantification of the following factors: degrees of strain, grain boundary character distribution, and concentration of interstitial elements.
- Development of new super hard materials based on carbon and nitride films with special emphasis to diamond and cubic boron nitride. APVT-20-034404, (Kuníková, T.). Development of diamond and DLC films prepared on biocompatible materials; development of deposition techniques for preparation of super hard layers, especially TiC, SiC carbides and TiN, AlN nitrides. Study and development of growth characteristics of cubic boron nitride layers subjected to its application in engineering, medicine and electronics. Development of „in-situ“ methods for investigation of prepared layers and their properties.
- Study and numeric simulation of degradation processes in materials. VEGA 1/2111/05, (Hazlinger, M.). The research project deals with the study of degradation processes and



failure of parts depending on microstructural and technological properties for selective methods of the heat treatment. The study will be carried out using different heat-treated specimens to be tested in laboratory conditions at various temperatures and under various mechanical loads (used mechanical loads will be statical, dynamical, and fatigue). Experimental specimens will be analysed in terms of fractography and morphological changes in microstructure. The experiments will be performed using simultaneously computer simulation and numerical methods of solution in the field of degradation and testing procedures of materials. The development of new computing techniques, material's models, and application of non-linear structural elements for selective tests of materials will be also introduced in the project.

### V.3 International Projects

- CEEPUS Project PL 0013-04/05 (Žitňanský, M.)
- EUREKA Project E! 3437 Progressive Surfacing of Metals (Hudáková, M.)

## VI. CO-OPERATION

### VI.1 National Co-operation

- AVANTEK Nové Mesto nad Váhom. Laser marking.
- FÚ SAV Bratislava (Academy of Science). Thermal analysis.
- ÚMMS SAV (Academy of Science) Bratislava. Isostatic pressing.
- VÚZ Bratislava. Weldability of steels.
- ZŤS MATEC Dubnica n./Váhom. Advanced cutting.
- Atomic Power Plant Research Institute VUJE a.s. Trnava. Atomic energy materials.
- IMR SAS Košice. Grant project.
- FNE SUT Bratislava. Grant project.
- VUSAPL Nitra. Grant project.
- Orthopaedic Clinic FN LF UK Bratislava. Grant project, APVT project.

### VI.2 International Co-operation

- Institute of Solid State and Research Materials IFW Dresden Germany. TEM microscopy.
- Military Academy Brno Czech Republic. Nitriding of steels.
- Silesian Technical University in Gliwice Poland. Grant project.

### VI.3 Contracts with Industry

- SACHS ltd. Trnava – microanalysis of materials
- Slovnaft ltd. Bratislava – material expertise, welding expert opinion
- SLOVALCO ltd. Žiar n. Hronom- microanalysis of materials
- SE a.s. Atomic power plant Mochovce – material analyse
- PFS ltd. Brezová – expertise of heat treatment of springs
- NChZ Nováky – material expertise
- Elektrokarbon Topoľčany – material expertise
- TRENS Trenčín – material expertise
- PUNCH Trnava – material expertise
- KOMPOZITUM Topoľčany – mechanical testing of materials

## VII. THESIS AND DISSERTATIONS

### VII.1 Graduate Thesis

The list of Bachelor Degree Thesis in 2004 (112) available at: <http://oljib.cvt.stuba.sk>.

### VII.2 Disertations (PhD.)

### VII.3 Habilitations (Assoc. Prof.)

## VIII. OTHER ACTIVITIES

### VIII.1 Visits of Staff Members to Foreign Institutions

- Osaka University, Japan – professor one day
- Osaka City University, Japan - professor one day
- IFW Dresden, Germany – senior lecturer and associate professor a week
- IFW Dresden, Germany –senior lecturer six months
- IFW Dresden, Germany – PhD student three month
- Buehler GmbH, Dusseldorf, Germany - associate professor a week
- University of Torino, Italy - senior lecturer a week
- ESRF Grenoble, France - senior lecturer a week
- Buehler Dusseldorf, Germany - senior lecturer a week
- Institute of Metals and Technology Lubljana, Slovenija – two senior lecturers two days
- VOEST-ALPINE Shienen GmbH Laoben, Austria – senior lecturer two days
- Silesian Technical University, Gliwice, Poland – senior lecturer five days
- Institute of Metals and Technology Lubljana, Slovenija – associate professor six month
- Industry research Centre OCAS N.V. Zelzate, Belgium - two MSc students one resp. six months
- Ghent University, Belgium – two Bc students three months
- TU VŠB Ostrava, Czech republic - professor one day

### VIII.2 Foreign Visitors to the Department

- Wetzig Klaus, prof. Dr., IFW Dresden Germany – two days
- 18 MSc students, Silesian Technical University, Gliwice, Poland – a week
- Bonek Mirek, Dr., Silesian Technical University, Gliwice, Poland – a week
- Križan Daniel, Dr., Rijks Universitiet Gent, Belgium – a week
- Koruk Ali Ihsan, Dr., Industry Research Centre OCAS N.V. Zelzate, Belgium – three days
- Razgulajev Eugen, Buehler GmbH Germany - three times one day
- Čihal Vladimír, prof. DrSc., TU VŠB Ostrava, Czech republic – one day
- Jurčí Peter, Dr., Ecosond Prague, Czech Republic – three times two days

## IX. PUBLICATIONS

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HRIVŇÁK, Ivan – ČAPLOVIČ, Ľubomír – BAKAY, Gejza – BITTER, Aurel. Metal dusting of inlet tube made of alloy 800. In *Kovové materiály*, 2005, roč. 43, č. 4, s. 290 - 299. ISSN 0023-432X

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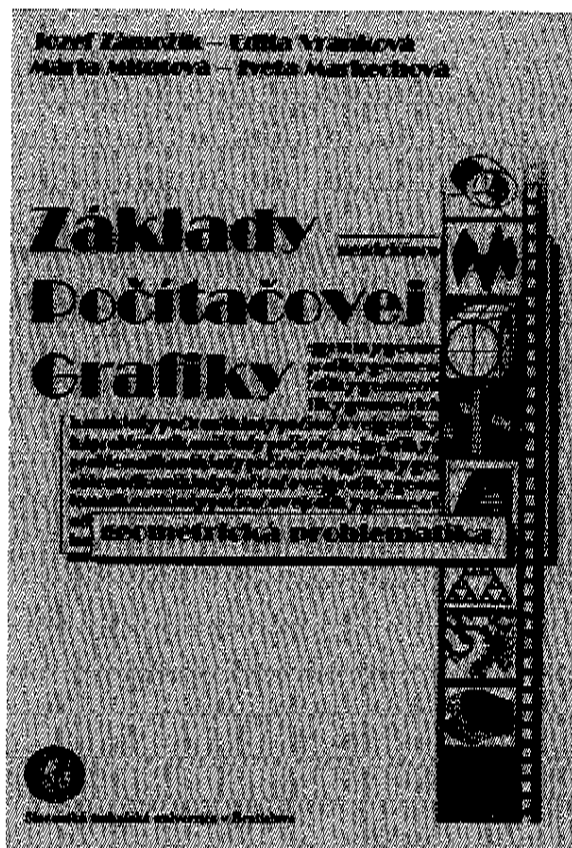
## DEPARTMENT OF MATHEMATICS

Head of the Department:  
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## I. STAFF

Professors:	0	Research Fellows:	0
Assoc. Professors:	4	Technical and Admin. Staff:	0
Senior Lecturers:	14	PhD Students:	5
Lecturers:	0		



Cover of the textbook „The basics of Computer Graphics“

**II. EQUIPMENT****II.1 Teaching and Research Laboratories**

- 1 special teaching rooms

**II.2 Special Measuring Instruments and Systems**

- 20 computers

**III. TEACHING****III.1 Bachelor Study (Bc.)**

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Mathematics I	1	2-3	Červeňanský
Analytic Geometry	1	1-2	Mišútová
Descriptive Geometry	1	1-2	Mišútová
Mathematics II	2	2-3	Halabřín
Linear Algebra	3	2-2	Halabřín

**III.2 Graduate Study (Ing.)**

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Introduction to Discrete Mathematics	1	2-2	Červeňanský
Insurance and Financial Mathematics	1	1-2	Urbaníková
Mathematical Methods of Planning and Evaluating of Experiments	1	2-2	Halabřín
Mathematical Methods of Evaluating of Experiments	1	1-1	Halabřín
Numerical Mathematics	2	2-1	Červeňanský
Fuzzy Systems	1	2-1	Halabřín
Fuzzy Sets	1	2-1	Halabřín

**IV. RESEARCH TARGETS**

- Properties of solutions of ordinary differential equations
- Metrics and topological properties of real functions
- Computer graphics – geometry problems
- Fractal and chaos
- Graph theory – algebraical and topological graph theory
- Geometric interpolation of massifs
- Image processing – algorithms
- Fuzzy sets and systems
- Rationalization of teaching in sphere of contents, methods and forms

**V. EDUCATION AND RESEARCH PROJECTS**

- Environment friendly filler materials and technologies for metal, non metal and metal combination solid state joining
- Analysis of the dynamics of singularly perturbed differential equations near non hyperbolic critical manifold

**VI. COOPERATION****VII. THESIS AND DISSERTATIONS****VII.1 Graduate Thesis****VII.2 Dissertations (Ph.D.)**

- Renáta Masárová: Transformations of set of sums of convergent series.
- Marcel Abas: Cayley graphs and Cayley maps.

**VII.3 Habilitations (Assoc. Prof.)**

- Mária Mišútová: Rationalization of teaching mathematical courses at university of technology.
- Oleg Palumbíný: Differential equations in teaching of mathematics on technical university.

**VIII. OTHER ACTIVITIES**

- Distance Education Courses
- 2 Courses in Mathematics
- Mathematics for Engineers
- Seminar: Teaching of Mathematics in Bachelors' Courses
- Pre-studies Courses of Mathematics
- Computational Geometry and Related Problems
- International Conference: Mathematics in Technical Education

**VIII.1 Members of Department in Aboard****VIII.2 Invited Lectures from Aboard**

- Prof. František Bubeník, Czech Technical University in Prague
- Prof. Roman Bek, Czech Technical University in Prague
- Prof. Jaroslav Černý, CSc., KM FSV, Czech Technical University in Prague
- Jiří Dočkal, ÚM FS Technical University in Brno
- Prof. Zděnek Jankovský, FS Technical University in Brno
- Prof. Milada Kočandrlová, KM FSV, Czech Technical University in Prague
- Prof. Anežka Wohlmuthová, KM FSV ČVUT, Czech Technical University in Prague,
- Prof. Čeněk Zlatník, CSc. KTM FSI ČVUT, Czech Technical University in Prague

## IX. PUBLICATIONS

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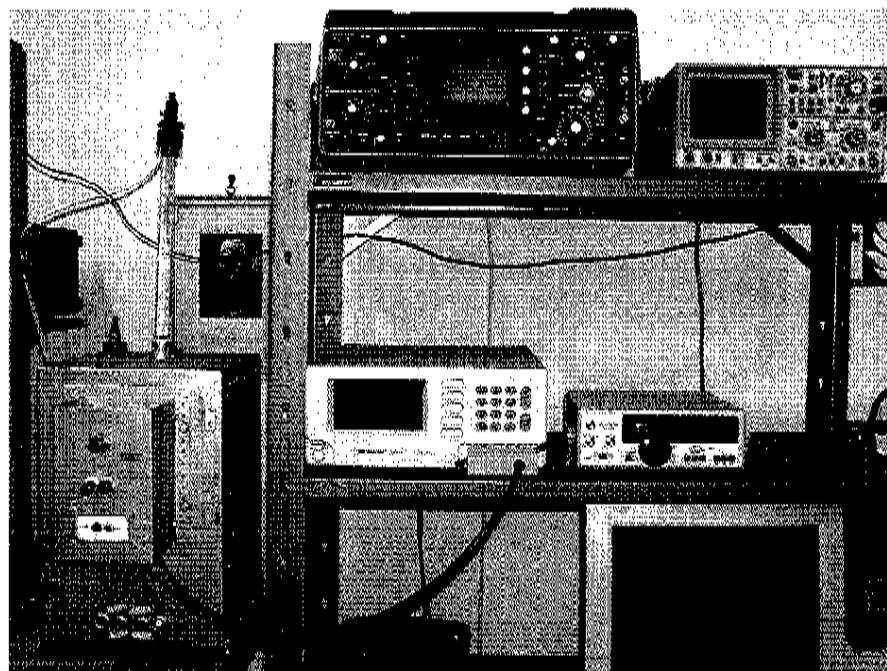
**DEPARTMENT OF NON-METALLIC MATERIALS**

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**I. STAFF**

Professors:	1	Research Fellows:	0
Assoc. Professors:	3	Technical and Admin. Staff:	3
Senior Lecturers:	4	PhD Students:	2
Lecturers:	0		



Laboratory of power electronics and electronic devices

## II. EQUIPMENT

### II.1 Teaching and Research Laboratories

- Laboratory of Technical experiment I, teaching of the mechanics, thermodynamics and electromagnetism,
- Laboratory of Technical experiment II, teaching of the quantum mechanics and the nuclear physics,
- Laboratory of advanced materials, effect of the process technology on microstructure, conductivity, dielectric response, mechanical, dilatation properties and optical properties of ceramics, glasses, nano-composites and superionic fluoride eutectic composites may be investigated.
- Laboratory of infra-red spectroscopy and optical spectroscopy
- Laboratory of electron microscopy

### II.2 Special Measuring Instruments and Systems

- Impedance spectroscopy in the temperature range 20-600°C,
- Modular spectroscopy in the frequency range 1 – 106 Hz, up to 300 °C,
- Flow Sorb, fy. Micrometrics, determination of the surface of the powder systems, accuracy 0,5 – 3 %,
- Arbitrary function generator SFG – 830.
- Optical photo spectroscope with local microanalyzer (the power for the spectra excitation is the pulse laser)
- scanning electron microscope JEOL JSM-35, beam voltage 35 kV, secondary electrons projection
- FT-IR spectrometer Spectrum BX, Perkin Elmer, MIRacle ATR Accessory

## III. TEACHING

### III.1 Bachelor study (Bc.)

*H/W: Hours per Week      L-P:      Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Technical Physics I	2	2-2	Labaš
Technical Physics II	3	2-2	Minárik
Introduction to Technological Processes of Non-metallic materials	1	2-2	Labaš
Chemistry glass and ceramics	1	2-1	Galusek
Introduction to Technical Experiment	3	0-2	Labaš
Non-metalic Materials	6	2-2	Kozík
Statistio Physios	6	2-1	Kalužný
Final Project	5	0-5	All DNM

### III.2 Graduate study (Ing.)

*H/W: Hours per Week      L-P:      Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Machinery of Plastic Technology	8	2-2	Horváth

Structure and Properties of Plastics	7	2-2	Sorentínyova
Name of subject	Semester	H/W L-P	Reader's name
Physical properties of Materials	7	2-1	Ožvold
Structure and properties of Non-metallic Materials	7	3-1	Minárik
Tools for Plastics Production I	7	2-1	Jurdíková
Machines and Tools for Plastics Production	7	2-1	Náplava
Theory and Technology of Ceramic Materials Processing	7	2-2	Kozík
Plastics Treatment	8	2-2	Horváth
Theory and Technology of Plastics Treatment	9	3-2	Jahnátek
Metrology and Testing of Plastics	9	2-2	Grom
Tools for Plastics Production	9	3-2	Horváth, Jurdikova
Production, Manipulating and Automation Technique	9	2-1	Horváth
Final Project	9	0-5	All DNM
Physical Methods of Non-metallic study	9	2-1	Kubliha
Ceramics Materials	9	2-2	Kozík
Semiconductor Materials and Technologies	9	2-1	Labaš
Basis of Semiconductor Physics	8	2-1	Labaš
Projection Products from Plastic.	9	2-1	Náplava
Enviromental physics.	7	2-1	Kalužny

#### IV. RESEARCH TARGETS

- investigation of relationship between preparatory conditions, microstructure and physical properties of ceramics (based on  $ZrO_2$ ,  $YBaCuO$  and basalt), ceramic composites and glasses (systems  $TeO_2 - ZnO$ ,  $TeO_2 - ZnO - ZnCl_2$ ,  $TeO_2 - PbCl_2$  etc.), rubber and ferrite – plastic composites,
- investigation of materials structure, modelling and simulations.
- investigation of the physical properties plastics

#### V. EDUCATION AND RESEARCH PROJECTS

##### V.1 Institutional Projects

##### V.2 National Grants (VEGA, KEGA)

- Investigation of influence of processing technologies on physical properties of materials with disordered structure. No 794 (Kalužný J.)
- Optimalization of preparation technology of progressive materials by numerical modelling. No 1/1080/047 (Minárik S.)
- Implementation of measuring electrical parameters in to quality control and technology of non-metallic materials APVT-20-011304 (Labaš V.)
- Achievement of the requirements of occupative structure of region by increasing of the directness of abstract of the subject of physics on secondary schools. No. 3/2346/04 (Kalužný J.)

##### V.3 International Projects

## **VI. CO-OPERATION**

### **VI.1 National Co-operation**

- Institute of Physics of the Slovak Academy of Sciences
- Model and numerical simulation of technology, structure and properties of advanced materials, in co-operation with Department of Applied Mechanics
- Faculty of Mechanical Engineering, ŽU Žilina
- Faculty of Mechanical Engineering, STU Bratislava
- Faculty of Chemical Engineering, STU Bratislava
- Faculty of Industrial Technologies, University of Trenčín
- VÚSAPL Nitra
- VIPO Partizánske

### **VI.2 International Co-operation**

- The preparation of the experimental materials (glass, ceramics) in cooperation with Laboratory of Inorganic Materials, common working place of Institute of Inorganic Chemistry, Academy of Sciences and Institute of Chemical Technology, Prague, Czech Republic,
- Centre d'Etude des Matériaux Avancés, University of Rennes, France.
- National Institute of Materials Physics, Bucharest, Romania

### **VI.3 Contracts with Industry**

- Research Institute of Plastic Materials in Nitra.
- CHEMAX Slovakia
- Volkswagen a.s., Slovakia

## **VII. THESIS AND DISSERTATIONS**

### **VII.1 Graduate Thesis**

The list of Bachelor Degree Thesis in 2004 (30) available at: <http://olib.cvt.stuba.sk>.

### **VII.2 Dissertations (PhD)**

- Čička Roman: Investigation of Structure, Microstructure and Electrical Properties of Eutectic Composites  $\text{Al}_2\text{O}_3\text{-(Y}_2\text{O}_3\text{)ZrO}_2$  Prepared by Directional Solidification.

### **VII.3 Habilitations (Assoc. Prof.)**

## **VIII. OTHER ACTIVITIES**

### **VIII.1 Visits of Staff Members to Foreign Institutions**

- Laboratory of Inorganic Materials, common working-place of Institute of Inorganic Chemistry, Academy of Sciences and Institute of Chemical Technology, Prague, Czech Republic.



## VIII.2 Foreign Visitors to the Department

- Prof. Mihai Popescu, National Institute of Materials Physics, Bucharest, Romania

## VIII.3 Organised Conferences, Seminars and Workshops

- Seminars:  
Sorentíniová Zuzana: Magnetoplastics  
Jurdíková Jana: Thermally Stimulated Depolarization Current  
Kaššáková Viera: Secondary school education and its relation to students successfulness and interest in study at technical universities  
Dušan Galusek: Alumina Oxide and Nanoworld.

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KALUŽNÝ, Ján. *Environmental Physics*. Bratislava: STU, 2005. 141 s. ISBN 80-227-2236-7

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KOZÍK, Tomáš – LABAŠ, Vladimír. Technologic texture and its importance in insulators. In *Proceedings of the 11th International workshop on Applied Physics of Condensed Matter APCOM 2005*. Žilina: ŽU, 2005, s. 80 – 85. ISBN 80-8070-411-2

- BOŠÁK, O. – KALUŽNÝ, J. – KUBLIHA, M. – PREŤO, J. – VACVAL, J. – LABAŠ, V. The investigation of the vulcanisation processes of the rubber blend utilizing electric methods. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 121 - 126. ISBN 80-227-2286-3
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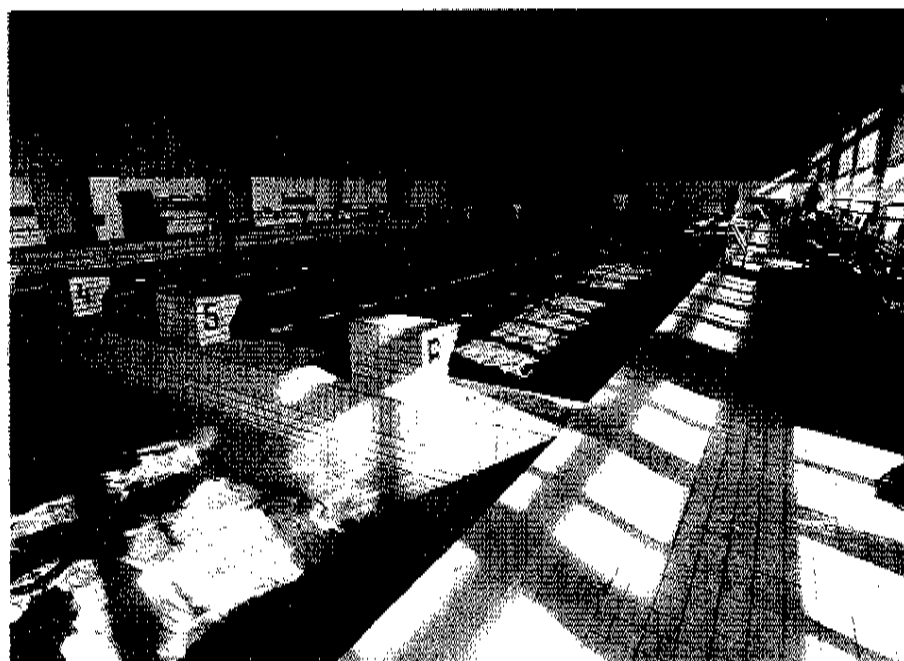
**DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS**

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**I. STAFF**

Professors:	1	Research Fellows:	0
Assoc. Professors:	1	Technical and Admin. Staff:	7
Senior Lecturers:	11	Ph.D. Students:	4
Lecturers:	0		



**Swimming hall**

**II. EQUIPMENT****II.1 Teaching and Research Laboratories**

- Gymnasium
- Fitness Centre
- Swimming Pool
- Track and Fields
- Tennis Courts
- Stadium (Baseball, Softball)

**II.2 Special Measuring Instruments and Systems**

- Dynamometers
- Bicycle-ergo meter

**III. TEACHING****III.1 Bachelor Study (Bc.)**

*H/W: Hours per Week L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Physical Education and Sports	1-6	2-1	Adamec, Blaškovič, Glesk

**III.2 Graduate Study (Ing.)**

*H/W: Hours per Week L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Physical Education and Sports	1-8	2-1	Adamcová, Gálik, Hlavatý, Merica, Rafaj, Morvay, Novotná, Lukačovičová, Csáderová
Olympism	1	2-1	Glesk, Merica

**IV. RESEARCH TARGETS**

- Physical Culture and Fitness of People

**V. EDUCATION AND RESEARCH PROJECTS****V.1 Institutional Projects****V.2 National Grants (VEGA, KEGA)**

- VEGA 1/2532/05 – “The modelling of adaptive mechanisms in chosen sports” - 2005-2007

**V.3 International Projects**

**VI. CO-OPERATION****VI.1 National Co-operation****VI.2 International Co-operation****VI.3 Contracts with Industry****VII. THESIS AND DISSERTATIONS****VII.1 Graduate Thesis****VII.2 Dissertations (Ph.D.)****VII.3 Habilitations (Assoc. Prof.)****VIII. OTHER ACTIVITIES****VIII.1 Visits of Staff Members to Foreign Institutions****VIII.2 Foreign Visitors to the Department****VIII.3 Organised Conferences, Seminars and Workshops**

- Winter training camp for students
- Summer training camp for students
- Seminars:
- 17.6. 2005 – „The adaptation in training process”

**IX. PUBLICATIONS**

GLESK, Pavol – KURHAJEC, Peter. *Marathon running*. Bratislava: MV SR, 2005. 146 s. ISBN 80-969399-7-1

MACEJKOVÁ, Yveta – HLAVATÝ, Rastislav. *Biomechanics and technique of swimming strokes*. Bratislava: UK, 2005. 56 s. ISBN 80-89197-31-2

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BENCE, Matej – MERICA, Marián – HLAVATÝ, Rastislav. *Swimming*. Banská Bystrica: UMB, 2005. 197 s. ISBN 80-8083-140-8

HLAVATÝ, Rastislav. The relationship of reaction time and the front-crawl swimming start. In *Vedecké práce MŠF STU v Bratislave so sídlom v Trnave*, 2005, č. 18, s. 39 - 43. ISSN 1336-1589

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HLAVATÝ, Rastislav. The effect of antropometrical parameters on spatial characteristics of front-crawl stroke cycle. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 366 - 368. ISBN 80-227-2286-3

MERICA, M. – NOVOTNÁ, S. Technical encompassment carving ski at students of university. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 797 - 800. ISBN 80-227-2286-3

GÁLIK, Karol. The limiting of tennis stroke speed by the combination of its force and control. In *Vedecké práce: Adaptácia v tréningovom procese*. Bratislava: STU, 2005, nestr. ISBN 80-227-2243-X

GLESK, Pavol. Overload and overtraining as the ineligible aspects in adaptation of athletes. In *Vedecké práce: Adaptácia v tréningovom procese*. Bratislava: STU, 2005, nestr. ISBN 80-227-2243-X

GLESK, Pavol. The adaptation processes as the inevitable part of sports training. In *Vedecké práce: Adaptácia v tréningovom procese*. Bratislava: STU, 2005, nestr. ISBN 80-227-2243-X

LUKAČOVIČOVÁ, Elena. Sports tennis training. In *Vedecké práce: Adaptácia v tréningovom procese*. Bratislava: STU, 2005, nestr. ISBN 80-227-2243-X

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CSÁDEROVÁ, Žaneta. The effect of stimulant substances using on the adaptation process and sports performance in male bodybuilding and fitness. In *Vedecké práce: Adaptácia v tréningovom procese*. Bratislava: STU, 2005, nestr. ISBN 80-227-2243-X

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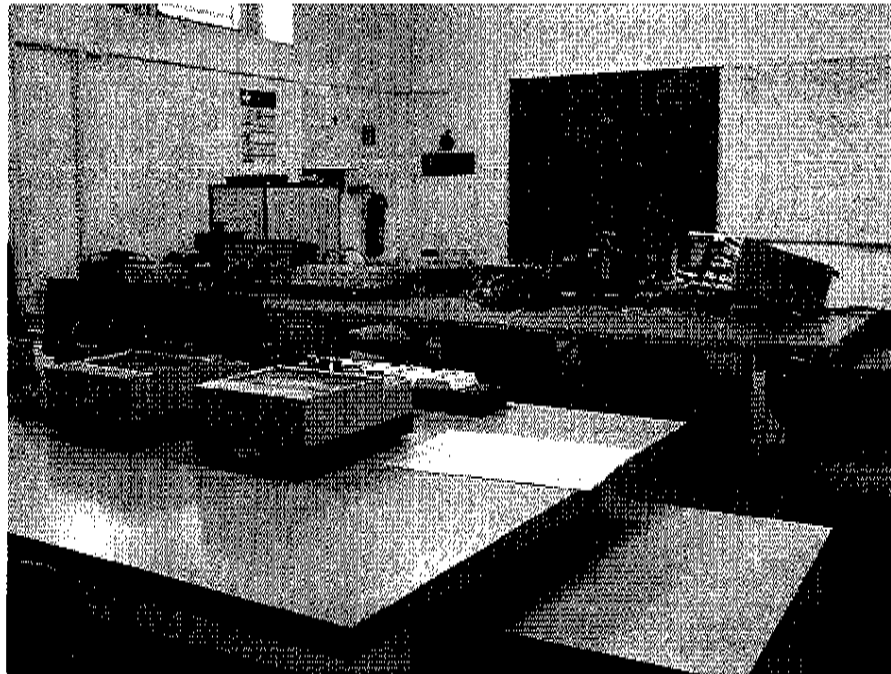
**DEPARTMENT OF PHYSICS**

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**I. STAFF**

Professors:	0	Research Fellows:	1
Assoc. Professors:	1	Technical and Admin. Staff:	3
Senior Lecturers:	10	PhD Students:	5
Lecturers:	0		



**Laboratory of power electronics and electronic devices**

## II. EQUIPMENT

### II.1 Teaching and Research Laboratories

- Laboratory of Physics I-II; teaching of the mechanics, thermodynamics, electromagnetism, optics and atomic physics;
- Laboratories of Electrical engineering; teaching of the elementary Electrical engineering;
- Laboratory of power electronics and electronic devices;
- Laboratory of Interferometry techniques, applications of interferometry to elastic and elastic – plastic properties investigations.

### II.2 Special Measuring Instruments and Systems

- Unimer 07, revisions and measurement of electrical properties of instruments;
- He – Ne laser dedicated to holography.
- System for scalar speed control of induction motor

## III. TEACHING

The objective of teaching physics and electrical engineering is to train engineers who should be competent to solve problems concerning a wide range of industry including materials engineering, industrial technologies, management and ecology, information technology, etc. The study involves a necessary theoretical introduction into subjects that provides general engineering education followed by special courses. The topics of lectures, laboratory and seminar exercises were chosen to provide students with useful knowledge from the field of physics and electrical engineering. At the same time students obtain fundamentals for creative work in engineering practice. The Physics Department is committed to providing a supportive environment in which students can achieve their full potential, and faculty and staff can make their maximum contribution while enjoying the rewards of professional development.

Our goals are to help students:

- Appreciate the role of science in society and the historical development of physics in the ongoing quest to discover the structure of the universe;
- Gain an understanding of the basic principles and the experimental basis of the various fields of physics, electrical engineering and the logical relationships of the various fields;
- Develop competence in constructing and using laboratory instruments and to draw valid conclusions from experimental data

### III.1 Bachelor Study (Bc.)

*H/W:* Hours per Week

*L-P:* Lectures-Practices

Name of subject	Semester	H/W L-P	Reader's name
Introduction to University Physics	1	0-2	Krajčovič
Physics I	2	2-2	Ůžvoldová
Physics II	3	2-2	Kvetan, Krajčovič



Name of subject	Semester	H/W L-P	Reader's name
Laboratory Exercises in Physics	3	0-2	Hološová
Electrical Engineering	4	3-3	Jančuška
Electrical Engineering	4	2-2	Riedlmajer

### III.2 Graduate Study (Ing.)

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Applied Physics	7	2-2	Jančuška

## IV. RESEARCH TARGETS

In 2005, Department of Physics has continued research activities in accordance with planned institutional projects national grant projects VEGA. The projects have followed up with our previous research programs. They were focused on investigation of relations between preparatory conditions, microstructure and physical properties of ceramics (based on zirconia and basalt), composites prepared by directional solidification (oxide and fluoride systems), fluoride, oxide and chalcogenide special glasses, and fluoride or oxide superionics. The aim of this research area is to contribute to the fundamental understanding of materials and to optimize their composition and properties for important technological applications. The emphasis was laid on the investigation of the materials structure, defects, electrical and dielectric properties, mechanical properties, optical properties and Raman scattering. Modeling and simulation of the microstructure, defect structure, transport properties, relaxation processes and electron spectra or lasing mechanisms were developed.

The next research activity is the study of cataclysmic variable stars and related objects. We are mainly interested in the accretion process of matter and accretion disc structure. The recent topic presented in the last conference is the study of flickering variability as one typical feature of accretion of matter in general. This short time light variations should manifest the turbulent viscosity in the disc, therefore the physical mechanism of angular momentum transport.

## V. EDUCATION AND RESEARCH PROJECTS

### V.1 Institutional Projects

- The education process intensification in the subject Electrical Engineering. (Jančuška, I.)
- The improvement of the teaching process and scientific-research activity of students in the Trnava region at FMS&T. (Krajčovič, J.)
- Microstructure and physical properties of oxides, halides and chalcogenides for optonics and superionics. (Trnovecová, V.)

### V.2 National Grants (VEGA, KEGA)

- Interactive Multimedia Project as schooling Physics for Technical Universities of Slovak Republic. KEGA No. 3/108003. (Ožvoldová, M.)
- Microstructure and physical properties of oxides, halides and chalcogenides for optonics and superionics. VEGA No. 1/2100/05. (Trnovecová, V.)

- Structure of transfer region in cataclysmic binaries and related objects. VEGA 2/4015/4

### **V.3 International Projects**

- Study materials for education of Physics of the high school. This is an experimental program in course delivery using the World Wide Web.
- HPC Europa

## **VI. CO-OPERATION**

### **VI.1 National Co-operation**

- Institute of Physics of the Slovak Academy of Sciences.
- Department of Solid State Physics, Faculty of Math. Physics & Informatics, Comenius University Bratislava.
- Faculty of Mechanical Engineering ŽU Žilina
- Faculty of Mechanical Engineering STU Bratislava
- Faculty of Chemical and Food Technology STU Bratislava
- Faculty of Electrical Engineering and Information Technology, STU Bratislava
- Astronomical Institute of Slovak Academy of Sciences
- Faculty of Natural Sciences of Matej Bel University
- Military Academy in Liptovský Mikuláš
- Faculty of Natural Sciences, University of Pavol Jozef Šafárik, Košice
- Faculty of Education, University of Trnava
- Department of Physics of Constantine the Philosopher University in Nitra

### **VI.2 International Co-operation**

- Laboratory of Inorganic Materials, common working-place of Institute of Inorganic Chemistry, of Sciences of Czech. Rep. and Institute of Chemical Technology, Prague, Czech Republic
- Institute of Crystallography, Russian Academy of Sciences, Moscow, Russia
- Institute of Physics, Faculty of Electrical Engineering and Computer Science, Brno University of Technology
- Institute of Radiotechnics and Electronics, Ac. of Sciences, of Czech. Rep. Prague
- Institute of General Physics, Russian Ac. of Sciences, Moscow, Russia
- Pennsylvania State University, USA
- Institut d'Astrophysique de Paris

### **VI.3 Contracts with Industry**

- Slovak Power, Jaslovské Bohunice Nuclear Power Plant
- Chemolak a.s., Smolenice
- Createch, Piešťany
- VUJE, Trnava
- SACHS, Trnava
- IZOMAT a.s., Nová Baňa
- MATEC, Dubnica n/Váhom
- SONY Slovakia Ltd.

## VII. THESIS AND DISSERTATIONS

### VII.1 Graduate Thesis

The list of Bachelor Degree Thesis in 2005 (10) available at: <http://olih.cvt.stuba.sk>

### VII.2 Dissertations (PhD)

### VII.3 Habilitations (Assoc. Prof.)

## VIII. OTHER ACTIVITIES

### VIII.1 Visits of Staff Members to Foreign Institutions

- MZLU Brno, Czech Republic
- CINECA Bologna, Italy
- INAF Catania, Italy
- Institute of Physics, Academy of Sciences of Czech Republic

### VIII.2 Foreign Visitors to the Department

- Assoc. Prof. Stanislav Bartoň – MZLU Brno, Czech Republic

### VIII.3 Organised Conferences, Seminars and Workshops

- **Seminars:**  
 Július Krempaský – Einstein and cosmology  
 Andrej Škubla – Structure and physical properties of some crystals and special glasses  
 with application in non-linear optics, photonics and superionics  
 Dagmar Senderáková – Acquisition of holography interferometry

## IX. PUBLICATIONS

TRNOVCOVÁ, V. – ŠKUBLA, A. – SCHULTZE, D. Anisotropy of the ionic conductivity in potassium bismuth/rare earth molybdate crystals. In *Solid State Ionics*, 2005, č. 176, s. 1739 – 1742. ISSN 0167-2738

TRNOVCOVÁ, V. – ZAKALYUKIN, R.M. - SOROKIN, N.I. - LEŽAL, D. – FEDOROV, P.P. - ILLEKOVÁ, E. – ŠKUBLA, A. – KADLEČÍKOVÁ, M. Physical properties of fluoride glasses for ionics. In *Materials Science Forum*, 2004, vol. 480-481, s. 299 – 304.

TRNOVCOVÁ, Viera – HANIC, František – ŠRÁMKOVÁ, Tatjana – ŠKUBLA, Andrej. Martensitic  $\alpha \leftrightarrow \gamma$  phase transition and ionic conductivity in „pure“ and doped  $\text{LiIO}_3$  single crystals. In *Materials Science Forum*, 2004, vol. 480-481, s. 405 - 410.

HRIC, L. – GÁLIS, R. – DOBROTKA, A. – ŠÍMON, V. Symbiotic binary YY Her – looking for consistent model of photometric and spectroscopic behaviour. In *The Astrophysics of Cataclysmic Variables and Related Objects : ASP Conference Series*, 2005, vol. 330, s. 455 – 456.

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HRIC, L. – GÁLIS, R. – NIARCHOS, P. – DOBROTKA, A. – ŠIMON, V. – ŠMELCER, L. – VELIČ, Z. – HÁJEK, P. – GAZEAS, K. – SOBOTKA, P. – KOSS, K. The photometric study of the symbiotic binary YY Her. I. The eclipsing model. In *Contribution Astronomy Obs.*, 2005, vol. 35, s. 1 – 21.

RIEDLMAJER, Róbert. Application of diagnostic methods at the control of reserved technical equipment of electrical. In *Materials Science and Technology* [online]. 3/2005 [cit. 2005-11-02]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.html>> ISSN 1335-9053

HOLOŠOVÁ, Helena. Didactic efficiency increase in teaching Physics I course. In *Vedecké práce MTF STU v Bratislave so sídlom v Trnave*, 2005, č. 18, s. 45 - 49. ISSN 1336-1589

RIEDLMAJER, Róbert – KVETAN, Karol. The analysis of the acceleration microsensors disposals. In *Vedecké práce MTF STU v Bratislave so sídlom v Trnave*, 2005, č. 18, s. 129 - 134. ISSN 1336-1589

HOLOŠOVÁ, Helena. The application of differentiated teaching in physics I focused on solving of non specific transfer tasks. In *Vedecké práce MTF STU v Bratislave so sídlom v Trnave*, 2005, č. 19, s. 19 - 24. ISSN 1336-1589

KRAJČOVIČ, Jozef – JANČUŠKA, Igor. Measuring the small circular aperture diameter by optical interferometry. In *Vedecké práce MTF STU v Bratislave so sídlom v Trnave*, 2005, č. 19, s. 33 - 38. ISSN 1336-1589

JANČUŠKA, I. – VRAGAŠ, S. The diode bridge rectifier measurement. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 481 - 487. ISBN 80-227-2286-3

KRAJČOVIČ, J. – JANČUŠKA, I. The small round aperture diameter measurement. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 598 - 604. ISBN 80-227-2286-3

KVETAN, K. The testing of imaging detector for ionizing radiation. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 684 - 690. ISBN 80-227-2286-3

RIEDLMAJER, R. – FILANOVÁ, J. Characteristics of scalar speed control of induction motor. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 1018 - 1022. ISBN 80-227-2286-3

OŽVOLDOVÁ, M. – TRNOVCOVÁ, V. – ŠKUBLA, A. – PEDLÍKOVÁ, J. – GREGUŠ, J. – KADLEČÍKOVÁ, M. Absorption, photoluminescence and Raman Spectra of lead tellurite glasses doped with  $Pr^{3+}$  or  $Er^{3+}$ . In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. ISBN 80-227-2286-3

TRNOVCOVÁ, V. – KALUŽNÁ, M. – FURÁR, I. – HANIC, F. – FILANOVÁ, J. Influence of technological texture on electrical properties of porcelain insulators. In *Proceedings of the 13th International Scientific Conference CO-MAT-TECH 2005*. Bratislava: STU, 2005, s. 1230 - 1240. ISBN 80-227-2286-3

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engineering universities. In *ICEER-2005: Iner Conference for Enginerring Education and Research*. Tainan: National Cheng Kung University, 2005, s. 1 – 4. ISBN 0-97412552-3-7

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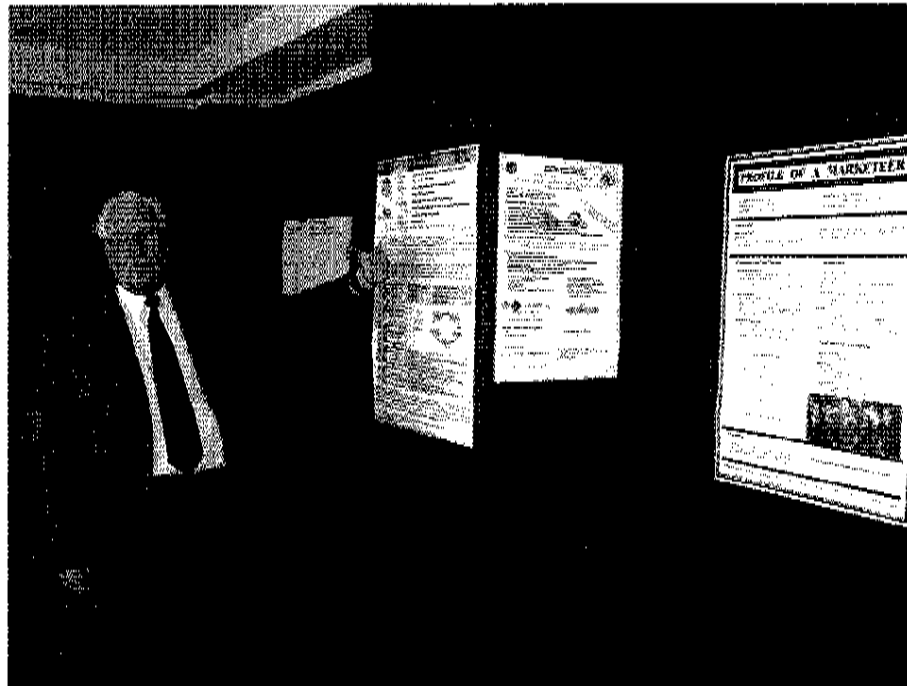
**DEPARTMENT OF QUALITY ENGINEERING**

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**I. STAFF**

Professors:	1	Research Fellows:	0
Assoc. Professors:	3	Technical and Admin. Staff:	2
Senior Lecturers:	2	PhD Students:	0
Lectures:	0		



**The conference poster section**

**II. EQUIPMENT****II.1 Teaching and Research Laboratory**

- Teaching Laboratory for Quality Management

**II.2 Special Measuring Instruments and Systems****III. TEACHING****III.1 Bachelor Study (Bc.)**

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Enterprise Economy	5	3-2	Bestvinová
Statistical Methods	5	2-2	Kučerová
Enterprise Management	5	3-2	Čambál
Accounting	5	2-2	Homokyová
Engineering Metrology /Practice/	5	0-3	Maduda
Semestral Project	5	0-2	
Human Ecology	6	0-3	Odlerová
Marketing in Quality Management	6	3-2	Šalgovičová
Quality Management	6	3-2	Linczený
Statistical Methods of Quality Inspection	6	2-3	Kučerová
Personal Management	6	2-2	Holková
Final Project	6	0-5	
Industrial Psychology	6	0-2	Schuller

**III.2 Graduate study (Ing.)**

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Operational Research	7	3-3	Štrpka
Production Management	8	3-3	Rybanský
Tools and Techniques of Quality Management	7	3-3	Paulová
Logistics in Quality Assurance	8	2-3	Mlkva
Engineering Metrology /Practice/	7	0-2	Maduda
Introduce of Managers Low	8	2-1	Halada
Quality Management	8	3-2	Linczený
Semestral Project	8	0-5	
Introduction of scientific work	9	0-2	Holkovič
Computer Aided Quality Control	9	2-2	Mlkva
Quality Economic	9	2-2	Nováková
Reliability Assurance	9	2-2	Bílý
Project Management	9	1-1	Ončák
Final Project	9	0-5	
Quality Management Cases Studies	9	0-3	Paulová



**IV. RESEARCH TARGETS**

- Quality control in industrial enterprises
- Quality control in service enterprises
- Quality Control in public organisation
- Quality of Communications with Customers
- Monitoring of Customers' Satisfaction in Quality Management and Marketing

**V. EDUCATION AND RESEARCH PROJECTS****V.2. National Grants (VEGA, KEGA)**

- Monitoring of Customers' Satisfaction in Quality Management and Marketing /VEGA 1/0103/03
- Project of Quality Management in Non-governmental Health-Service Institutions /KEGA 3/3190/05
- Implementation of subject Quality Management in secondary trade school /KEGA 3/3016/05
- Distance education in efectivity improvement methods area and TQM efectivity /KEGA 3/3113/05

**V.3. International Projects**

- The project of Regional strategy RIS Trnava

**VI. CO – OPERATION****VI.1. National Co-operation**

- Technical University Košice
- Technical University Zvolen
- Faculty of Engineering Bratislava
- Faculty of Engineering Žilina

**VI.2. International Co-operation**

- Agricultural University of Poznań Chair of Economic and Wood Industry Management, Poznań, Poland
- University of Zagreb Faculty of Forestry, Department for production Organization in Wood Industry
- University of West Hungary Faculty of Forestry, Department of Forest Policy and Economy

**VI.3. Contracts with Industry**

- Contract with ŠGÚ DŠ Bratislava, Mlynská dolina č. 1 “ Transformation of SMQ according to ISO 9000:2000”

- DAKVO, a.s. Žilina, Framborská 58 “ Document Preparation for certificate of SMQ”

## VII. THESIS AND DISSERTATIONS

### VII.1. Graduate Thesis

The list of Bachelor Degree Thesis in 2004 (54) available at: <http://olib.cvt.stuba.sk>.

### VII.2. Dissertations Ph.D)

- Kučerová, M. Implementation of statistical methods in quality management.

### VII.3. Habilitations (Assoc.Prof.)

- Paulová, I. Subscription to chosen methods implementation of systematic approach to evaluation MQ efectivity.

## VIII. OTHER ACTIVITIES

### VIII.1 Visits of Staff Members to Foreign Institutions

### VIII.2 Foreign Visitors to the Department

- M.Sc. Predrag Dašič, prof. HTTS Kruševac, Kosančičeva 36, 37000 Kruševac, Serbia and Mantenegro

### VIII.3 Organised Conferences, Seminars and Workshops

- International Conference „New Trends in Quality Management“

## IX. PUBLICATIONS

ŠALGOVIČOVÁ, Jarmila. *Marketing in quality management*. Bratislava: STU, 2005. 202 s. ISBN 80-227-2288-X

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NOVÁKOVÁ, Renata. The positives and the negatives of automobile industry. In *Forum manažera*, 2005, vol. 1, č. 1, s. 12 - 13. ISSN 1336-7773

ŠALGOVIČOVÁ, Jarmila – BÍLÝ, Matej. Importance of ISO 9001:2000 Standard for Buyer–Supplier Relationships. In *Kvalita*, 2005, roč. 13, č. 1, s. 14 - 16. ISSN 1335-9231

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ŠALGOVIČOVÁ, Jarmila. New marketing and quality management rules for global markets. In *Zborník príspevkov z medzinárodnej vedeckej konferencie: II. časť: Globalizácia a jej sociálno-ekonomické dôsledky '05*. Žilina: ŽU, 2005, s. 192 - 196. ISBN 80-8070-463-5

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PAULOVÁ, Iveta. Application of the self-assessment method in support of the improvement of the quality management system efficiency. In *Forum ekonomiczne 2005. Economic forum 2005*. Poznań: Akademia Rolnicza, 2005, s. 28- 29.

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ŠALGOVIČOVÁ, Jarmila – BÍLÝ, Matej. Model of quality management system for Univesities. In *Materials Science and Technology* [online]. 5/2005 [cit. 2005-12-20]. Dostupné na internete: <http://mtf.stuba.sk/casopis/obsah.html>

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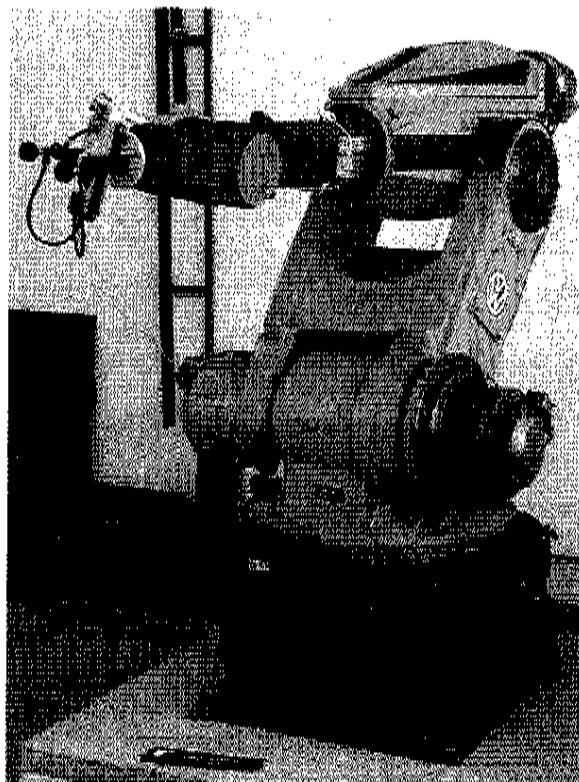
**DEPARTMENT OF TECHNOLOGICAL DEVICES AND SYSTEMS**

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**I. STAFF**

Professors:	1	Research Fellows:	2
Assoc. Professors:	0	Technical and Admin. Staff:	3
Senior Lecturers:	5	PhD Students:	2
Lecturers:	0		



**Robot-manipulator**

**II. EQUIPMENT****II.1 Teaching and Research Laboratories**

- CAD Laboratory
- Laboratory of Robotics
- Laboratory of Pneumatics

**II.2 Special Measuring Instruments and Systems**

- Modular education system for simulation and analysis of controlling of production systems
- 3D modelling software – Mechanical Desktop 5, CATIA

**III. TEACHING****III.1 Bachelor Study (Bc.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Basics of manufacturing technologies and systems.	1	2-2	Marůnek + Heads of Departments
Mechanisation and automation	5	2-2	Košťál
Cuttings Tools	5	2-2	Pecháček
NC Machine Programming	5	0-2	Košťál
Semestral project	5	0-2	Javorová, Charbulová
Computer aided design I.	6	0-3	Košťál
Fixture and machine tools technological equipment	6	2-2	Baránek
Industrial robots and manipulators	6	2-2	Velíšek
Bachelor project	6	0-5	Košťál, Pecháček

**III.2 Technological Devices and Systems Graduate Study (Ing.)***H/W: Hours per Week**L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Machining machines	1	2-2	Velíšek
NC Machine Programming	1	0-3	Košťál
Theory of systems	1	2-2	Košťál
Assembly machines	2	2-2	Pecháček
Machines for special technologies	2	2-1	Košťál
Theory of automata	3	2-2	Košťál
Production systems I.	3	2-2	Velíšek
Designing of Production Processes and Systems	3	2-2	Baránek
Operation of production systems	3	2-2	Baránek
Diploma project	3	0-5	Košťál, Pecháček



**IV. RESEARCH TARGETS**

- Clamping of nonrotary workpieces
- Thematic Network on Manufacturing Technologies
- New Conception of Integrated Multifunction Manufacturing System

**V. EDUCATION AND RESEARCH PROJECTS****V.1 Institutional Projects****V.2 National Grants (VEGA, KEGA)**

- VEGA No.706 – Prismatic workpieces clamping by modular system fixtures
- Výskum a implementácia PLM pre virtuálne závody (najmä malé a stredné) v Slovenskej republike

**V.3 International Projects**

- CEEPUS CII-PL-033-01-0506 Development of mechanical engineering (design technology and production management) as an essential base for progress in the area of small and medium companies' logistics – research, preparation and implementation of joint programs of study.
- CEEPUS CII-RO-0041-01-0506 Teaching "STATE-OF-THE-ART" product development processes.

**VI. CO-OPERATION****VI.1 National Co-operation**

- Faculty of Mechanical Engineering, Slovak University of Technology, Bratislava
- Faculty of Special Technique, University of Trenčín, Trenčín
- Faculty of Mechanical Engineering, University of Technology, University of Košice
- Faculty of Mechanical Engineering, University of Technology of Žilina, Žilina

**VI.2 International Co-operation**

- Faculty of Mechanical Engineering, University of Technology, Vienna, Austria
- Faculty of Mechanical Technology, Silesian University of Technology, Gliwice, Poland
- University of Technology and Economics, Budapest, Hungary
- Department of Manufacturing Engineering, Technical university of Cluj-Napoca, Romania
- Department of Robotics and Manufacturing System Automation, University of Zagreb, Croatia
- Institute of Production Engineering, University of Maribor, Slovenia
- Faculty of Mechanical Engineering, University of Technology, Brno, Czech Republic
- Department of Production Engineering, Faculty of Engineering, University of Rijeka, Rijeka, Croatia
- Institute of Mechanical Technology, Poznan University of Technology, Poznan, Poland
- KOMAG, Gliwice, Poland

- Department of Materials Handling and Logistik, Faculty of Mechanical Engineering, University Miskolc, Hungary
- Institute of Production Machines, Systems and Robotics, Faculty of Mechanical Engineering, University of Technology, Brno, Czech Republic
- Production Engineering Institute, Cracow University of Technology, Cracow, Poland
- Politehnica University of Bucharest, Faculty of Engineering and Management of Technological Systems, Department of Production Engineering, Romania
- Department of Manufacturing Engineering, Faculty of Machine Building, Transilvania University of Brasov, Romania
- Faculty of Engineering, University of Debrecen, Hungary
- Faculty of Machine Technology, Technical University of Sofia, Sofia, Bulgaria
- Faculty of Engineering, North University of Baia Mare, Baia Mare, Romania
- Faculty of Technology, Tomas Bata University in Zlin, Zlin, Czech Republic
- Faculty of Mechanical Engineering, University of Liberec, Liberec, Czech Republic
- Faculty of Mechanical Engineering, Technical University of Ostrava, Ostrava, Czech Republic

### **VI.3 Contracts with Industry**

- VUNAR, Nové Zámky
- ŽOS, Trnava
- TOMA, Trnava
- VOJUS, Považská Bystrica
- SMC, Bratislava
- FESTO Didactic, Germany
- FESTO Slovakia, Bratislava
- EKOM, Piešťany
- ELSYS, Piešťany
- SONY Slovakia, Trnava

## **VII. THESIS AND DISSERTATIONS**

### **VII.1 Bachelor and Graduate Thesis**

The list of Bachelor Degree Thesis (31) and Graduate Degree (30) in 2005 available at: <http://olib.cvt.stuba.sk>

### **VII.2 Dissertations (Ph.D.)**

### **VII.3 Habilitations (Assoc. Prof.)**

## **VIII. OTHER ACTIVITIES**

### **VIII.1 Visits of Staff Members to Foreign Institutions**

- TU Vienna, Austria, 4x
- TU Budapest, Hungary, 2x
- TU Cluj – Napoca, Romania, 3x

- TU Zlín, Czech Republik, 1x
- TU Liberec, Czech Republik, 2x
- PS Gliwice, Poland, 2x
- KOMAG Gliwice, Poland, 3x

### VIII.2 Foreign Visitors to the Department

- Assoc. Prof. Ferenc Alpek, Budapest, Hungary
- Prof. Zdenek Kolibal, VUT Brno, Czech Republik
- Prof. Branko Katalinic, TU Viena, Austria
- Prof. Predrag Dasic, HTTS Krusevac, Serbia and Monte Negro
- Prof. Janko Hodolic, University of Novy Sad, Serbia and Monte Negro
- Prof. Miroslav Radovanovic, University of Nis, Serbia and Monte Negro
- MSc. Gerhard Kucera, TAVR Viena, Austria, 5x
- MSc. Peter Novotný, TAVR Viena, Austria, 5x

### VIII.3 Organised Conferences, Seminars and Workshops

## IX. PUBLICATIONS

VELÍŠEK, Karol – PECHÁČEK, František – KOŠŤÁL, Peter – ŠTEFÁNEK, Michal: *Assembly machines and devices*. Bratislava: STU, 2005. 197 s. ISBN 80-227-2187-5

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CHARBULOVÁ, Marcela. Micro – and macro-geometry of ceramic coatings applied by plasma jet. In *Materials Science and Technology* [online]. 5/2005 [cit. 2005-12-20]. Dostupné na internete: <<http://mtf.stuba.sk/casopis/obsah.html>> ISSN 1335-9053

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**DEPARTMENT OF WELDING**

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**I. STAFF**

Professors:	3	Research Fellows:	3
Assoc. Professors:	1	Technical and Admin. Staff:	3
Senior Lecturers:	6	PhD Students:	12
Lecturers:	0		



**Welding aggregates**

## II. EQUIPMENT

### II.1 Teaching and Research Laboratories

- Welding school for gas welding, welding with covered electrode and GMAW
- Resistant welding laboratory
- Plasma welding laboratory

### II.2 Special Measuring Instruments and Systems

- Welding current detector for resistant welding
- Friction and Wear Tester TE97A
- Memory Oscilloscope M621

## III. TEACHING

### III.1 Bachelor Study

### III.2 Graduate Study

*H/W: Hours per Week*

*L-P: Lectures-Practices*

Name of subject	Semester	H/W L-P	Reader's name
Welding Technology	5	2-2	Marônek
Theory of Welding	7	3-2	Magula,Bošanský
Special Welding Methods	9	3-2	Tuřňa
Weldment Design and Production	9	2-2	Ulrich
Projecting of Manufacturing Processes and Systems in Welding	9	2-1	Monček
Control and Computer Technology in Welding	9	2-1	Marônek
Welding Machines and Equipments	8	2-2	Gatál
Assembly of Welded Units	9	2-2	Gatál
Tribology, Surface Engineering	7	2-1	Blaškovitš
Technical Preparation of Production	9	2-1	Polák
Non-destructive Weld Joint Testing	9	2-1	Polák
Adhesive Bonding	7	2-1	Marônek
Construction and design	9	3-2	Ulrich
Industrial technologies and production equipments	8	2-1	Kovačový
Welding Certification	8	2-1	Polák
Repairs and renovation	8	2-1	Blaškovitš
Design for welding manufacturing	9	2-2	Ulrich
Brazing/Soldering of metallic and non-metallic materials	9	2-1	Koleňák
Applied engineering and production	9	3-2	Blaškovitš
Joining of materials	8	2-1	Marônek, Koleňák
Joining in automotive Industry	9	2-2	Marônek, Koleňák
Technologies and equipments for joining and cutting of materials	9	2-2	Tuřňa

## IV. RESEARCH TARGETS

- Soldering and brazing



- Explosive welding
- Weldability of steels
- Welding of plastic materials
- Surfacing and Tribology
- Adhesive bonding

## **V. EDUCATION AND RESEARCH PROJECTS**

### **V.1 Institutional Projects**

### **V.2 National Grants (VEGA, KEGA, APVV, PROGTECH)**

- Determination of defects acceptance in fused welding joints.
- Environmentally suitable filler materials for joining metallic and non-metallic materials.
- Harmonization of education process in welding specialization – creation of a new studying specialization in the second level of university study.
- The research of progressive laser welding technologies and systems for industrial using.
- Research of mechatronic systems and progressive technologies for surface material engineering.
- Laser deposition of layers improving the utility properties and life of production tools.
- Development of the leadfree active solder and research of material solderability of metallic and ceramic materials with the utilization of ultrasonic activation.
- Optimization of welding technology at processing of distinguished fragments manufacture in progressive agriculture equipments.
- Research of tribology measured quantity methods in industrial and metallurgy sphere in Slovak Republic.
- Progressive technologies and automatized complexes supported industrial development for competitive industrial production.

### **V.3 International Projects**

## **VI. COOPERATION**

### **VI.1 National Co-operation**

- SES -Timače
- SL - Komárno
- MATEC Dubnica n/V.
- Faculty of Mechanical Engineering, University of Transport and Communication in Žilina
- Faculty of Mechanical Engineering , Slovak University of Technology, Bratislava
- Thermosolar - Žiar n/H.
- SLOVALCO a. s. - Žiar n/H.
- MFF-UK, Department of Solid State Physics , Bratislava
- AE - Jaslovské Bohunice
- VÚJE – Trnava
- SKLOPLAST - Trnava
- VÚZ PI SR Bratislava

- US Steel, Košice
- VUSTAP, Považská Bystrica
- IBOK, a. s. Bratislava

#### **VI.2 International Co-operation**

- Materials Research Corp., New York
- Faculty of Mechanical Engineering, Ljubljana
- Welding Institute, Ljubljana
- VITO, Belgium + VTI members
- Technische Universität Dresden

#### **VI.3 Contracts with Industry**

- SE a. s. Atomová elektrárň Jaslovské Bohunice
- VUSAM a. s. Zvolen
- PRVÁ ZVÁRAČSKÁ a. s. Bratislava
- VÚZ PI SR Bratislava
- IBOK, a. s. Bratislava

### **VII. THESIS AND DISSERTATIONS**

#### **VII.1 Graduate Thesis**

The list of Bachelor Degree Thesis (50) in 2005 available at: <http://olib.cvt.stuba.sk>.

#### **VII.2 Dissertations (Ph.D.)**

#### **VII.3 Habilitations (Assoc. Prof.)**

### **VIII. OTHER ACTIVITIES**

#### **VIII.1 Visits of Staff Members to Foreign Institutions**

- Fronius, Wells, Austria
- Faculty of Mechanical Engineering, ČVUT Praha
- Technical university Dresden
- Annual assembly of International Institut of Welding (IIW)

#### **VIII.2 Foreign Visitors to the Department**

- prof. Dr. Miroslav RADOVANIČ, Faculty mechanical Engineering University NIŠ, Republica Serbia and Montenegro
- Uwe FÜSSEL, Michael SCHNICK, Jörg ZSCHETZSCHE, N. GOLLER, Mechanical Engineering, University of Technology Dresden
- prof. Ing. Andrzej Kolasa, PhD, DSc., Eng. Director Institute of Materials Processing, Faculty of Production Engineering, WARSAW UNIVERSITY OF TECHNOLOGY
- prof. Ing. Petr Zuna, PhD. D.Eng.h.c., Faculty of Mechanical Engineering, Czech Technical University in Prague, Dean, President of the Engineering Academy of the Czech

- Republic, The Member of Government Research and Development Council
- prof. Ing. Jiří Dunovský, PhD. EWE, Faculty of Mechanical Engineering, Czech Technical University in Prague
- prof. Ing. Jaroslav Koukal, PhD, Faculty of Mechanical Engineering, Department of Welding, Czech Welding Institute, Ltd., Director, VŠB – Technical University in Ostrava
- prof. Dr. hab. inž. Stanislaw Adamczak, dr.h.c., Kilece University of Technology Faculty of Mechatronics and Machinery Design, KIELCE
- prof. Ing. Milan Forejt, PhD., Faculty of Mechanical Engineering, Institute of Technology, University of Technology, BRNO
- prof. Ing. Antonín Víteček, PhD., Faculty of Mechanical Engineering, VŠB – Technical University in Ostrava
- doc. Ing. Viktor Kreibich, PhD., Faculty of Mechanical Engineering, Czech Technical University in Prague
- doc. Ing. Jan Suchánek, PhD. Faculty of Mechanical Engineering, Czech Technical University in Prague
- Ing. Dušan Sevcik, M.M.E., M.I.E. Aust. Industrial Contract Designers (N.S.W.) PTY.LTD. Design Engineers, SYDNEY, AUSTRALIA
- Dr.ir. Ali Ihsan Koruk, Research Engineer Welding Technology, ARCELOR Innovation R&D, ZELZATE, BELGIUM
- Ing. Martin Klečka, LAO Lasers and Applied Optics, LAO Industrial Systems, s.r.o. PRAGUE
- Ing. Jiří Brynda, ŠKODA JS a.s., PLZEŇ
- Jihad Bou Nassif, Mech. Eng. Technical Manager, Gresam Company, Ltd. BEIRUT, LEBANON
- Ing. Václav Minařík, CSc., Czech Welding Society –ANB, Director, PRAGUE
- Dipl. Ing. Robert Nemethy, EWE., Chef de projets, SBB CFF FFS, Chemins de fer Fédéraux suisses CFF, Infrastructure Voie de communications, Rails, BERNE
- Ph.D. Dr. Béla Palotás, MSc, Mech. Eng., Weld. Eng., Technical University Budapest Department of Materials Science & Engineering, BUDAPEST
- Eva Pongrácz, D.Sc. (tech.)Senior researcher, Department of Process and Environmental Engineering, University of Oulu, FINLAND

### VIII.3 Organised Conferences, Seminars and Workshops

- Lead free solders in electronic industry
- Welding 2005 - benefits of application of new materials, methods and welding technologies for progress in industrial production
- ESAB - arc welding in car production, 2005

## IX. PUBLICATIONS

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## COMPUTATIONAL TECHNOLOGY CENTRE

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The activity of the CTC:

- administration and economic activities connected with information systems and technology for dean's office and departments.
- implementation and operation of automated information systems of the Faculty in the following fields :
  - work and wages - for personnel department, work economy and wages and salaries accountancy departments
  - accountancy and budget - for finance accountancy department
  - property - for the department of estate
  - materials and technology purchase and service - for stock economy
  - students - for Registrar's office
- service of the classrooms with personal computers and their performance
- system operation of computational systems
- administration of INTRANET
- service and administration of SANET
- maintenance of installed means of computational technology
- consultancy in the field of software and hardware, and purchase of computational technology for departments and divisions



**The computer room**

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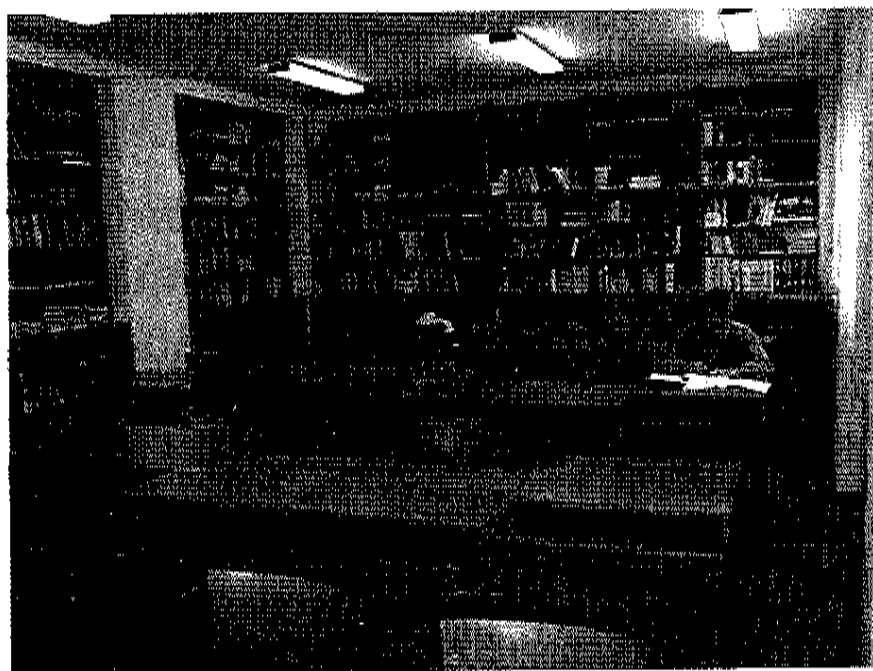
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The academic library is an independent workplace of the Faculty. It contains nearly 70,000 library units and provides library-information service to more than 3,100 users.

The virtual library, on-line catalogues and multimedia workplace are being built up. The library is a part of scientific and research base of the Faculty.

The academic library edited:

- Journal - Research papers of FMST
- Journal - Materials Science and Technology
- Proceeding of the international scientific conference CO-MAT-TECH.



**Study room**

## APPENDIX A LIST OF FACULTY DEPARTMENTS

Slovenská technická univerzita Materiálovo-technologická fakulta		STU MIF	Slovak University of Technology Faculty of Materials Science and Technology	Slowakische Technische Universität Fakultät für Materialwissenschaft und Technologie
Zoznam katedier				
No.	Slovak Name of Department	Abbreviation	English Name of Department	German Name of Department
1	Katedra aplikovanej informatiky a automatizácie	KALA	Department of Applied Informatics and Automation	Lehrstuhl für angewandte Informatik und Automatisierung
2	Katedra aplikovanej mechaniky	KAM	Department of Applied Mechanics	Lehrstuhl für angewandte Mechanik
3	Katedra environmentálneho a bezpečnostného inžinierstva	KEBI	Department of Environmental and Safety Engineering	Lehrstuhl für Umwelt und Sicherheitsingenieurwesen
4	Katedra fyziky	KF	Department of Physics	Lehrstuhl für Physik
5	Katedra humanitných vied	KHV	Department of Humane Sciences	Lehrstuhl für Humanwissenschaften
6	Katedra inžinierstva kvality	KIK	Department of Engineering Quality	Lehrstuhl für Qualitätssicherung
7	Katedra inžinierskej pedagogiky a psychológie	KIPP	Department of Engineering Pedagogy and Psychology	Lehrstuhl für Ingenieurpädagogik und Psychologie
8	Katedra matematiky	KM	Department of Mathematics	Lehrstuhl für Mathematik
9	Katedra materiálového inžinierstva	KMI	Department of Materials Engineering	Lehrstuhl für Werkstofftechnik
10	Katedra nekovových materiálov	KNM	Department of Non-Metallic Materials	Lehrstuhl für Nichtmetallmaterialien
11	Katedra obrábania a montáže	KOM	Department of Machining and Assembly	Lehrstuhl für spanende Fertigung und Montage
12	Katedra odbornej jazykovej prípravy	KOJP	Department of Languages	Lehrstuhl für Fremdsprachen
13	Katedra priemyselného inžinierstva a manažmentu	KPM	Department of Industrial Engineering and Management	Lehrstuhl für Industrieingenieurwesen und Management
14	Katedra technologických zariadení a systémov	KTZŠ	Department of Technological Devices	Lehrstuhl für technologische Anlagen und Systeme
15	Katedra telesnej výchovy a športu	KTVS	Department of Physical Education and Sports	Lehrstuhl für Körperkultur und Sport
16	Katedra tvárnenia	KT	Department of Forming	Lehrstuhl für Umformen
17	Katedra zlievarenstva	KZI	Department of Foundry	Lehrstuhl für Gießen
18	Katedra zvarovania	KZv	Department of Welding	Lehrstuhl für Schweißen
19	Detasované pracovisko (Brezno, Dubnica, Komárno, Nitra)	DP	Detached workplace in ...	Außenarbeitsstelle in ...

## APPENDIX B LIST OF ACCREDITED STUDY PROGRAMMES

No.	Name of Study Programme	Abreviation	English Name of Study Programme	German Name of Study Programme
	<b>Bakalarske štúdium (Bc.)</b>		<b>Bachelor Study (B.S.)</b>	<b>Bachelor-Studium</b>
1	Technológia strojárkej výroby	BTSV	Machine Production Technology	Technologie der Maschinenbauproduktion
2	Technologické zariadenia a systémy	BTZS	Technological Devices and Systems	Technologische Anlagen und Systeme
3	Materiálové inžinierstvo	BMI	Materials Engineering	Werkstofftechnik
4	Inžinierstvo životného prostredia	BIŽP	Environmental Engineering	Umwelttechnik
5	Aplikovaná informatika a automatizácia v priemysle	BAIAP	Information Technology and Automation in Industry	Angewandte Informatik und Industrieautomatisierung
6	Priemyselné inžinierstvo a manažment	BPIM	Industrial Engineering and Management	Industrielle Ingenieurwesen und Management
7	Inžinierstvo kvality produkcie	BIKP	Quality Engineering	Qualitätssicherung
8	Zabezpečovacia technika	BZT	Safety of Technology Systems and Processes	Sicherheitstechnik
	<b>Inžinierske štúdium (Ing.)</b>		<b>Master Study (M.S.)</b>	<b>Ingenieurstudium (Dipl.-Ing.)</b>
1	Technológia strojárkej výroby	TSV	Machine Production Technology	Technologie der Maschinenbauproduktion
2	Technologické zariadenia a systémy	TZS	Technological Devices and Systems	Technologische Anlagen und Systeme
3	Materiálové inžinierstvo	MI	Materials Engineering	Werkstofftechnik
4	Inžinierstvo životného prostredia	IŽP	Environmental Engineering	Umwelttechnik
5	Aplikovaná informatika a automatizácia v priemysle	AIAP	Information Technology and Automation in Industry	Angewandte Informatik und Industrieautomatisierung
6	Priemyselné inžinierstvo a manažment	PIM	Industrial Engineering and Management	Industrielle Ingenieurwesen und Management
7	Inžinierstvo kvality produkcie	IKP	Quality Engineering	Qualitätssicherung
	<b>Doktorandské štúdium (Ph.D.)</b>		<b>Ph.D. Study</b>	<b>Doktorandenstudium (Dr.)</b>
1	Automatizácia a riadenie špec. riadenie procesov	DAR	Automation and Control	Automatisierung und Steuerung
2	Inžinierstvo kvality produkcie	DIKP	Quality Engineering	Qualitätssicherung
3	Materiálové inžinierstvo a mechanizmy materiálov	DMI	Material Engineering	Werkstofftechnik
4	Podnikový manažment	DPM	Plant Management	Betriebswirtschaft
5	Strojárske technológie a materiály	DSTM	Machine Technologies and Materials	Maschinenbautechnologien und Werkstoffe
6	Teória vyučovania predmetov všeobecno-vzdelávacej a odb. povahy	DTVP	Theory of Technical Subjects Training	Theorie des Unterrichts der technischen Fächer,
	<b>Doplňujúce pedagogické štúdium</b>		<b>Complementary Teacher Training</b>	<b>Pädagogische Ergänzungsstudium</b>
1	Učiteľstvo technických odborných predmetov	PUTOP	Teaching the Technical Subjects	Lehrer für technische Fächer

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**FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY**  
**SLOVAK UNIVERSITY OF TECHNOLOGY BRATISLAVA**  
Authorised contributions from departments  
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