

***FACULTY OF MANAGEMENT SCIENCE  
AND INFORMATICS***

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***ANNUAL REPORT 2010***

***UNIVERSITY OF ŽILINA***



Edited by Faculty of Management Science and Informatics  
University of Žilina  
SLOVAKIA  
Printed by EDIS - Žilina University publisher

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## **FACULTY OF MANAGEMENT SCIENCE AND INFORMATICS**



### ***Foreword***

The Faculty of Management Science and Informatics is one of seven Faculties of the University of Žilina. It was established in 1990 as a result of integrating the Department of Technical Cybernetics, which at that time was part of the Faculty of Mechanical- Electro Engineering, with the programme Cybernetics in Transport and Communications, and also the Department Mathematical Methods and the Department of Economy in Transport, which was part of the Faculty of Operation and Economy of Transport and Communications, and also the Institute for Development of Communications. This year the Faculty of Management Science and Informatics celebrated its 20<sup>th</sup> anniversary, which was an occasion to look back and recall some important persons and their activities, especially in the first years after the Faculty's creation.

The first study programmes after the creation of the Faculty were **Information and Control Systems** and **Applied Mathematics**. New trends in information and communication technologies, which influenced innovation in the study programmes, as well the acceptance of the Bologna Process rules in higher education, led in 2002 to the need to restructure these programmes. At present, we offer the study at the all three levels programmes (**Bachelors, Masters and Doctoral**). All programmes are officially approved by the Accreditation Commission of the Slovak Republic. The programmes are interdisciplinary; they were conceived and created based on many years of the Faculty's successful educational tradition. Detailed descriptions of these programmes is performed in following text

Education at each of these three levels has a theme of active and cooperative participation of lecturers, students, research workers and doctoral students. Students are involved in projects, for their bachelors or masters theses, which are part of the scientific work of research groups in the Faculty, in the wider University or in external cooperating organisations.

The Faculty primarily specialises in control and management activities in extensive systems. These include problems of managing and optimising the transfer of objects, as well as the designing of integrated interactive information systems for decision making support including economic connections and technical background. There are the problems of control and optimization for transport of subjects (information, goods and passengers), transfer of information, processing of information and design of integrated interactive information systems for support of decision-making, including economic considerations and technical security. The Faculty is interested in control and information systems with application for management, and transport systems from

small-sized networks, such as a firm or company, through medium-sized, such as a region, to large-sized networks

During its existence, the Faculty of Management Science and Informatics, as a scientific-pedagogical institution, became a worthy equal partner to similar faculties not just in Slovakia, but abroad as well. The creation of this reputation and identity was a strenuous process but now the scientific and academic staff of the Faculty, as well as their graduates, have achieved a well-deserved position in the world-wide academic (informatics and management) community.

In conclusion I would like to stress that the main task of the technical-oriented faculties is to conduct continual education and research so that the knowledge obtained permits the graduates to contribute to society. I believe that our Faculty's activities are helping our present and future students to be fully valuable individuals, capable of using their knowledge, skills and experiences in the conditions of the new millennium

Prof.Ing. Karol M a t i a š k o , PhD.  
Dean

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e-mail: ida.stankovianska@fri.uniza.sk

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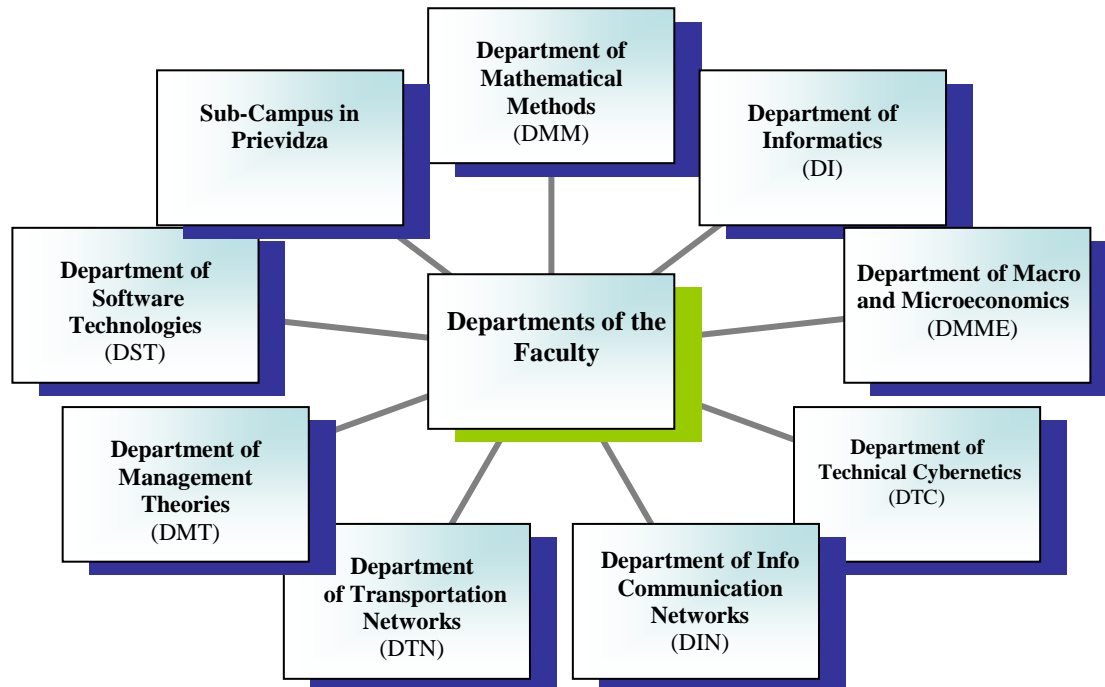
Assoc. Prof. Ing. Peter **F a b i á n**, PhD.  
Vice-Dean for International Affairs  
Tel.:+421-41- 513 42 06  
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Assoc.Prof. Ing. Michal **Z á b o v s k ý**, PhD.  
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e-mail: michal.zabovsky@fri.uniza.sk

**Faculty Registrar:** Ing. Beata **H o l k o v á**, PhD.  
Tel.: +421-41-513 40 75  
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### **Departments of the Faculty:**

The FMSI has eight Departments and one Sub-Campus. They are:



### **Educational Activities**

Educational activities consist of:

- Design and realization of technical means for information and management systems
- Analysis and synthesis of regulation and automation systems
- Control and optimisation methods
- Data transmission and data processing
- Issues concerning multimedia information systems, graphic systems and simulation of components for communication networks, systems and mathematical modelling
- Management, marketing, logistics, entrepreneurial skills, creation of transport and communication systems

At the present Faculty provides educational programmes in following accredited programmes of study:

Full time 3–year **Bachelors Degree** programme in:

- **Informatics**
- **Computer Engineering**
- **Management**

The programme is a well-rounded higher education in the 1<sup>st</sup> degree.

Target of the **Bachelors level** consists in preparation of experts for application of acquired knowledge in their professional life and at the same time to be able for study in the higher levels (MSc. PhD).

Additional 2 years **Masters Degree** programmes of study are in the following accredited fields:

- **Information Systems**
- **Computer Engineering**
- **Management**

In the Programme **Information Systems** there are possibilities for the students to make choice in following Professional Orientations:

- **Applied Informatics**
- **Systems of Support for Decision-Making**
- **Information-Communication Networks**
- **Business Informatics**
- **Distributed and Parallel Systems**

Targets of the **Masters level** consist in preparation of experts for commanding places in the area of application of acquired knowledge in the praxis, in the research and science and at the same time to be able for study in the doctoral level

### ***Doctoral Programme***

The Doctoral Programme at the Faculty involves the following scientific disciplines:

- **Applied Informatics**
- **Management**

Doctoral Programme is the highest level of higher education. The aim of the Doctoral Programme is to prepare the graduate student for independent, creative scientific-research work by giving the student comprehensive theoretical knowledge and mastery of the methods of scientific work as demonstrated in a given scientific project. The programme lasts three years (full time) or five years (part time). The Doctoral Programme requires 3 semesters of advanced study, satisfactory completion of a comprehensive examination, then, after 3<sup>rd</sup> semesters, submission of a written dissertation, based on independent original research that must be a significant contribution to the field of study. Oral examination consists of a defence of the dissertation. The graduate is granted the scientific academic title „**Philosophiae Doctor** (abbr. **PhD.**)“, which is written in abbreviation after the candidate's name.

### ***Scientific and Professional Orientation of the Faculty:***

The Faculty is involved in the following scientific fields:

- Analysis, synthesis and design of integrated information and control systems
- Creation of integrated systems for the support of decision-making, including its economical correlations and technical equipment requirements
- Management, marketing, logistics and enterprising in the general field of transportation and communication systems

- Problem-solving design in transportation and communication systems and relative tasks of control
- Control and optimisation of transportation of products and persons
- Control and optimisation of database creation, transmission and data processing
- Analysis, synthesis and design of multimedia information systems
- Analysis, synthesis and design of geographical information systems
- Design and realization of simulation components for communication networks and systems
- Design and realization of technical means for information and control systems

### ***Scientific activities of the Faculty:***

In **2010** there were **2** projects of **International Science and Technology Cooperation**, **10** projects supported from **Science and Education Grant Agency** and **Cultural and Education Grant Agency – Ministry of Education in Slovak Republic** solved at the Faculty. They are:

#### **International Science and Technology Cooperation**

1. STF LoE S36/02 *Customer in the Loop (Using Networked Devices enabled Intelligence for Proactive Customers Integration as Drivers of the Integrated Enterprise)*  
Assoc.Prof.Ing. Tatiana **Kováčiková**, PhD.
2. ETSI STF 331 *ICT GRID Technologies Interoperability and Standardization*  
Assoc.Prof.Ing. Tatiana **Kováčiková**, PhD.

#### **Science and Education Grant Agency – Ministry of Education in Slovak Republic**

1. 1/0598/10 *Using of Visualization Techniques by Investigation of Wide-Ranging Databases*  
Assoc.Prof.Ing. Michal **Zábovský**, PhD
2. 1/0361/10 *Optimal Design of Public Operating Systems in Undetermined Conditions*  
Prof.Ing. Jaroslav **Janáček**, PhD.
3. 1/0667/10 *Soft Technique in Modelling and Prediction of Economical and Financial Time Ranges,*  
Ing. Lucia **Pančíková**, PhD.
4. 1/0796/08 *Modelling and Data Processing in Wide-Ranging Databases*  
Prof.Ing. Karol **Matiaško**, PhD.
5. 1/0808/08 *Self-Adjusting and Teaching Algorithms of Automatic Control*  
Prof.Ing. Mikuláš **Alexík**, PhD.
6. 1/0664/08 *Design of Algorithms for Adjustment of Data Based on of Several Values Logics and Fuzzy Logics*  
Assoc.Prof.Ing. Vitaly **Levashenko**, PhD.



7. 1/0495/08 *Design of New Access System and Methods for References of Effectively Exploitation and Optimal Combination of Production Inputs by Using of Macro- and Micro-Economy Aspect and Prior Orientation to Human Capital*  
Assoc.Prof.Ing.Alžbeta **Kucharčíková**, PhD
8. 1/0135/08 *Optimisation Problems in Logistics and Transportation Systems*  
AssocProf.RNDr. Štefan **Peško**, PhD.
9. 1/0878/08 *Development of Knowledge Management Theory* (research of problems for enterprise management based upon work and using of knowledge from the economic science point of view  
Prof.-Ing. Štefan **Hittmár**, PhD.

#### **Cultural and Education Grant Agency - Ministry of Education in Slovak Republic**

1. 421-032ŽU-4/2010 *Repeatedly Applicable Education Objects for Digital Library*  
Prof.Ing. Matilda **Drozdová**, PhD.

#### **Scientific Board:**

**Chairman:** Prof.Ing Karol **M a t i a š k o**, PhD.

**Members:** Assoc.Prof.Ing. Martina **B l a š k o v á**, PhD.  
Assoc.Prof.Ing. Pavel **Č i č á k**, PhD.  
Prof.Ing. Milan **D a d o**, PhD.  
Prof.Ing. Matilda **D r o z d o v á**, PhD.  
Ing. Mária **Ď u r i š o v á**, PhD.  
Assoc.Prof.Ing. Peter **F a b í a n**, PhD.  
Assoc.Prof.RNDr. Elena **G r a m a t o v á**, PhD.  
Assoc.Prof. Zdeněk **H a v l i c e**, PhD.  
Prof. Ing. Štefan **H i t t m á r**, PhD.  
Assoc.Prof.Ing. Miroslav **H r n ě i a r**, PhD.  
Assoc. Prof. Ing. Vladimír **J a m r i c h**, PhD.  
Prof. RNDr. Jaroslav **J a n á ě k**, PhD.  
Assoc.Prof.Ing. Ľudmila **J á n o š í k o v á**, PhD.  
Prof. Ing. Martin **K l i m o**, PhD.  
Prof.Ing. Milan **K o l e s á r**, PhD.  
Assoc.Prof.Ing. Tatiana **K o v á ě i k o v á**, PhD.  
Assoc.Prof.Ing. Emil **K r š á k**, PhD.  
Assoc.Prof.Ing.. Penka **M a r t i n c o v á**, PhD.  
Assoc. Prof. Ing. Juraj **M i ě k**, PhD.  
Assoc. Prof. Ing. Vladimír **M l y n a r o v i ě**, PhD.  
Assoc. Prof. RNDr. Stanislav **P a l ú c h**, PhD.  
Prof. Ing. Ladislav **Š i m á k**, PhD.  
Prof. Ing. Karel **Š o t e k**, PhD.  
Prof.Dr.Ing. Róbert **Š t e f k o**, PhD.  
Prof.Ing. Liberios **V o k o r o k o s**, PhD.  
Prof.Ing. Peter **Z á v o d n ý**, PhD.

In the procedure to be appointed as a **Professor** in 2010 was successful

1. **Assoc.Prof.Ing. Matilda Drozdová, PhD.**

In the procedure to be appointed as a **Associated Professor** were successful

1. **Ing. Emil Kršák, PhD.**
2. **Ing. Peter Matís, PhD.**
3. **Ing. Katarína Bachratá, PhD.**
4. **Ing. Ľuboš Buzna, PhD.**
5. **Dr. Konrad Glebocký, PhD.**

Scientific Board of the Faculty, after successful defence of Dissertation Thesis, has appointed in 2010 with title **PhD.** following graduates of Doctoral Programme:

1. Ing. Roman Kaloč
2. Ing. Elena Polohová
3. Ing. Ivana Drotárová
4. Ing. Jaroslava Štaffenová
5. Ing. Michal Fraňo
6. Ing. Patrik Hrkút
7. Ing. Ján Janech
8. Ing. Andrej Holúbek
9. Mgr. Vladimír Medviď
10. Ing. Mária Čerňanská
11. Ing. Ondrej Škvarek
12. Ing. Juraj Boroň

### ***Publication Activities:***

Members of the Faculty of Management Science and Informatics have published in the year 2010 results of research activity in **206** publications. Among them there are **3** on the level of scientific monographs, **3** university textbooks published in Slovakia, **3** scientific works published in prestigious scientific foreign journals, **24** scientific works in foreign journals, **29** Scientific Works in Domestic Journals and **3** Scientific Works in Foreign Reviewed Proceedings. Some of the more significant titles there are in the following list.

### Scientific Monographs

JANÁČEK, J.: *Designing spatially extensive service systems*  
2010, 1 ed. - ISBN 978-80-554-0219-2

HITKA, M.: *Corporate culture in human resource management*  
2010, 1 ed. - ISBN 978-80-228-2151-3

MIČEK, J., JURÍČEK, J.: *Noise in signal processing systems*  
1 ed. - ISBN 978-80-554-0171-3

### University Textbooks published in Slovakia

BACHRATÝ, H., GRENDÁR, M., BACHRATÁ, K.: *How to calculate the probability?*  
2010, 1 ed. - ISBN 978-80-554-0226-0

MATIS, P.: *Geographic information systems*  
2010, 1 ed. - ISBN 978-80-554-0214-7

KUCHARČÍKOVÁ, A., TOKARČÍKOVÁ, E.: *Basics of economic theory*  
3<sup>rd</sup> update and suppl. ed. - ISBN 978-80-554-0179-9

### Scientific Articles in Prestigious Foreign Journals

HANULIAK, I., HANULIAK, P.: *Performance evaluation of iterative parallel algorithms*  
In: *Kybernetes* - Vol. 39, No. 1 (2010), pp. 107-126

POČTA, P., TURSKÝ, J., PALÚCH, P.: *Design and evaluation of novel VoIP link adaptation algorithm based on GTS function*  
In: *AEU-international journal of electronics and communications* - Vol. 64, no. 3 (2010), pp. 191-201

BOHÁČIK, J.: *Discovering fuzzy rules in databases with linguistic variable elimination*  
In: *Neural network world* - Vol. 20, sp. iss. 1 (2010), pp. 45-61

### Scientific Articles in Foreign Journals

GRONDŽÁK, K., KORTIS, P.: *Modified maximum clique exact algorithm*  
In: *Radio-electronic and computer systems* - No. 2 (43) (2010), pp. 82-85

JANECH, J.: *Distributed database systems in the dynamic netArticles environment*  
In: *International journal on information technologies and security* - Year 2, no. 1 (2010), pp. 43-52

MATIS, P.: *Creation of new distribution network distribution of mail in Slovak republic*  
In: *Promet - Traffic & Transportation* - Vol. 22, no. 6 (2010), pp. 413-418

DICOVA, J., ONDRUŠ, J.: *Road charging in urban areas in the middle-size city*  
In: *Archives of transport system telematics* - Vol. 3, Issp. 1 (February 2010), pp. 39-44

VODÁK, J.: *How to measure return on investment into human capital development*  
In: *Sosyal Bilimler Dergisi* - Vol. 7, No. 1 (2010), pp. 1-20

BLAŠKOVÁ, M., BLAŠKO, R.: *Motivation policies in the public sector of the Slovak Republic*  
In: *Viešoji politika ir administravimas* - No. 32 (2010), pp. 19-31

- LENDEL, V., VARMUS, M.: *Proposal of model for creating innovation strategy*  
In: Scientific papers of the University of Pardubice - Vol. 16, č. 1 (2010), pp. 178-191
- LENDEL, V., KUBINA, M.: *New trends in customer relationship management and their application in Slovak enterprises*  
In: Trendy ekonomiky a manžmentu - Vol. 4, č. 06 (2010), pp. 19-26
- GAŠPARÍK, J., LENDEL, V.: *Process portal for railway sector*  
In: Logi - Vol. 1. No. 1 (2010), pp. 33-43
- LENDEL, V., VARMUS, M.: *Innovative potential of the strategy*  
In: Ekonomika - Management - Inovace - Vol. 2, č. 1 (2010), pp. 47-53
- DICOVA, J., ONDRUŠ, J.: *Development of public passenger transport in Slovakia*  
In: Logi - Vol. 1. No. 1 (2010), pp. 20-25
- KARDOŠ, M., DROZDOVÁ, M.: *Analytical method of CIM to PIM transformation in Model Driven Architecture (MDA)*  
In: Journal of information and Organizational sciences - Vol. 34, no.1 (2010), pp. 89-99
- LISTER, R ... [et al.]: *Naturally occurring data as research instrument: analyzing examination responses to study the novice programme*  
In: ACM SIGCSE Bulletin - Vol. 41, no. 4 (2009), pp. 156-173
- MARČEK, M., MATUŠÍK, P., MARČEK, D.: *Forecasts for financial data using ARCH-GARCH and Brown's exponential smoothing model*  
In: ECON '10 - Vol. 17, no. 1 (2010), pp. 26-32
- BIZOŇOVÁ, Z., PILÁTOVÁ, K.: *Model-driven analysis towards interoperability of assessments in LMS*  
In: Journal of information and organizational sciences - Vol. 34 (2010), no. 1, pp. 27-39
- BLAŠKOVÁ, M.: *Creative proactive-concluding theory of motivating*  
In: Verslas: teorija ir praktika - Vol. 11, no. 1 (2010), pp. 39-48
- GRONDŽÁK, K, KORTIS, P.: *Heuristic algorithm for the PIN code generation*  
In: International journal on information technologies and security - Year 2, no. 1 (2010), pp. 53-58
- BOHÁČIK, J.: *Survey of methods for extracting fuzzy rules using classification ambiguity*  
In: International journal on information technologies and security - Vol. 2, no. 2 (2010), pp. 33-44
- JANÁČEK, J., LINDA, B., RIČELOVÁ, E.: *Optimization of municipalities with extended competence selection*  
In: Prague economic papers - Vol. 19, No. 1 (2010), pp. 21-34
- MATIS, P.: *Creation of distribution network with a use of aggregation methods*  
In: Perner's Contacts -Vol. 5, č. 1 (2010), pp. 170-178
- POTTER, M., MATIS, P.: *Geomarketing potential in solving the tasks of segmentation and targeting market*  
In: Perner's Contacts - Vol. 5, no. 1 (2010), pp. 95-103
- ADAMKO, N., KLIMA, V., MARTON, P.: *Designing railway terminals using simulation techniques*  
In: International Journal of Civil Engineering - Vol. 8, No. 1 (3-2010), pp. 57-67

MATIS, P.: *Finding a solution for a complex street routing problem using the mixed mode transportation*

In: Transport - Vol. 25, No. 1 (2010), pp. 29-35

MIKUŠ, Ľ.: *Rating errors in backbone netArticles*

In: Elektrotechnika - published 24.-03.31.2010

### Scientific Articles in Domestic Journals

STANÍKOVÁ, K.: *SOA - new phenomenon*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 199-208

JANECH, J. BAČA, T.: *Distributed database system in vehicular ad-hoc network environment*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 95-104

BAČA, T., JANECH, J.: *DSM tool UML .FRI in educational process*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 3-10

LADOVSKY, T.: *The matrix permutation problem in fuzzy arithmetic*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 4 - spec. ispp. (2010), pp. 365-374

HORVATH, M. MARČEK, D.: *Linguistically fuzzy rules derived by neutral network*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 73-79

ZAITSEVA, E., LEVASHENKO, V., KAVALÍK, Š.: *Boolean derivatives in reliability analysis*

In: Journal of information, control and management system - Vol. 8, No.2 (2010), pp. 217-228

LENDEL, V., KUBINA, M.: *Identification of general relations between management and CRM*

In: Studia commercialia Bratislavensia - Roč. 3, č. 9 (1/2010), pp. 68-7

LENDEL, V.: *Lateral Marketing – success is through innovation*

In: Marketing inspirations - Roč. 5, č. 1 (2010), pp. 20-26

RICHTER, L.: *Bata's ideas as inspiration*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 169-176

KUBINA, M.: *Principles of cooperation for successful use of customer relationship management in business praxis*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 31-36

HITTMÁR, Š.: *Model of management in the transport firm*

In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 53-62

- MUŽÍKOVÁ, K.: *Effective decision making in the prisoner's dilemma scenario*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 139-148
- SOVIAR, J.: *Theoretical approach to the environment of management study*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 81-85
- SOVIAR, J., STRIŠŠ, J.: *Business ethics - frame recommendations for the Slovak environment*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 87-91
- LENDEL, V., ŠTENCL, M.: *Possibility of applying artificial intelligence in terms of intelligent transport systems*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 37-45
- VARMUS, M.: *Particularities of marketing mix in the services sphere*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 101-106
- FAKTOR, M.: *Computing the ARC length of the trajectory in electron model in atom of hydrogen with space structure of Vivian's curve*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 21-26
- NATŠINOVÁ, Z. S.: *Application of the methods decision tables and decision-making process in management*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 149-157
- NATŠINOVÁ, Z. S.: *Application method decision tables*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 51-56
- KORMANCOVÁ, M.: *How to develop the talents of employees in desired direction?*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 25-30
- MAJEROVÁ, R.: *Planning on the base of human-potential effectiveness*  
In: HRM&E - Vol. 4, no. 1 (2010), pp. 51-62
- HODOŇ, M.: *EGNOS influence on the positioning accuracy*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 63-72
- JUREČKA, M.: *Recommendations for pulse coupled neural network parameters setting*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 105-110

- MAJEROVÁ, R.: *Relation between HR system and effectiveness evaluation*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 1 (2010), pp. 47-50
- CHOCHLÍK, M.: *Generating object factory classes with the Mirror reflection library*  
In: Journal of Information, Control and Management Systems - Vol. 8, no. 2 (2010), pp. 83-94
- MURÍN, M., ULBRICHT, M.: *Mathematical model of multicriteria scheduling in grid environment and its performance*  
In: Journal of Information, Control and Management Systems - Vol. 8, No. 2 (2010), pp. 129-138
- ONDRUŠ, J., DICOVÁ, J.: *Importance of Safety Mark for Transport Organizations*  
In: Doprava a spoje - Č. 1 (2010), pp. 183-189
- ČERŇANSKÁ, M., ŠKVAREK, O.: *Clustering of Slovak sentence melody - methods and results*  
In: Communications - Vol. 12, No. 1 (2010), pp. 58-64
- BOHÁČIK, J., MATIAŠKO, K., ROSSETI, R.: *Summary of making fuzzy rules from decision trees based on cumulative information and classification ambiguity*  
In: Journal of Information Technologies - No. 1 (2010), pp. 1-17
- Scientific Articles in Foreign Reviewed Proceedings**
- GÁBRYŠOVÁ, M., VODÁK, J.: *How to successfully build business in times of crisis*  
In: Partnerstwo i współpraca a kryzys gospodarczo-społeczny v Europie środkowej i wschodniej - pp. 262-276
- LENDEL, V., KUBINA, M.: *The importance and role of CRM in current period of Globalization and economic crisis*  
In: Globalization and crises in modern economy - pp. 127-132
- MARČEK, D., MATUŠÍK, P.: *Machine Learning with a teacher and without teacher: a statistical and soft approach*  
In: Cognition and Artificial Life X - pp. 239-244

## **Academic Senate:**

**Chairman:** RNDr. Štefan K o v a l í k , PhD.

**Senate Registrar:** Assoc.Prof.Ing. Ľudmila J á n o š í k o v á , PhD.

### **Chamber of Employees:**

Assoc.Prof.Ing. Martina B l a š k o v á , PhD.	Ing. Jozef J u r í č e k , PhD..
RNDr. Hynek B a c h r a t ý , PhD.	Assoc.Prof.RNDr. Katarína B a c h r a t á , PhD
RNDr. Peter V a r š a PhD.	Assoc.Prof.RNDr.Stanislav P a l ú c h , PhD.
Ing. Jozef G a j d o š í k	Assoc.Prof.Ing. Emil K r š á k , PhD.
Ing. Juraj D u b o v e c , PhD.	Ing. Jozef M i č i c
Mgr.Ing. Lubomír S a d l o ň , PhD.	Ing. Ján K a p i t u l í k , PhD.

### **Chamber of Students:**

Eduard B a r a n i a k	Marek Š a j n a
Jakub K o r d i a k	Daniela S k o v a j s o v á
Lukáš L e h o t a	Jaroslav V e r n í č e k
Juraj K u b i c a	

## **Official guests from foreign institutions accepted by Deans Office in 2010:**

1. Prof. DrSc. Vyacheslav **Kharchenko** , National Aerospace University, Kharkiv, (UE)
2. Prof. Esa **Salmikangas** , JAMK University of Applied Sciences, Jyväskylä, (FIN)
3. Prof. Nadežda **Fila**, Transport and Telecommunication Institute, Riga (LT)
4. Prof. Dr.Ing. h.c. multip. Eckehard **Schnieder**, TU Braunschweig, (D)
5. Assoc.Prof. Jouni **Huotari**, PhD., JAMK University of Applied Sciences, (FIN)
6. Prof. Wojciech **Kornet**, College of Computer Science and Business Administration in Lomża, (PL)
7. Dr.Ing. Ryszard. **Szcebiot**, College of Computer Science and Business Administration in Lomża, (PL)
8. Prof. Thomas **Semmler**, Telecom Bretagne, Brest, (F)
9. Prof. José **Therssen**, Telecom Bretagne, Brest, (F)
10. Mrs. Catarina. **Sable**, Telecom Bretagne, Brest, (F)
11. Mr. André **Guyomar**, Telecom Bretagne, Brest, (F)
12. Ms. Evgenia **Novikova**, SPbSUT, St. Petersburg, (RUS)
13. Ms. Natalia **Nikiforova**, SPbSUT, St. Petersburg, (RUS)
14. Prof. Konstantin **Lomakin**, SibSUTI, Novosibirsk, (RUSS)
14. Dipl.Ing. Birgit **Graf**, Hochschule für Telekommunikation, Leipzig, (D)
15. Dipl.-Ing. Undine. **Pielot**, Hochschule für Telekommunikation, Leipzig, (D)
16. Mr. Helmut **Reinke**, Hochschule für Telekommunikation, Leipzig, (D)
17. Mrs. Amaria **Khiter**, Telecom Lille, (F)



**Abroad stays of the Faculty staff and Doctoral Students:  
In the 1<sup>st</sup> Quarter 2010**

	<i>Name</i>	<i>Institute - Country</i>	<i>from</i>	<i>to</i>
1.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	3.1.2010	12.1.2010
2.	Alexík Mikuláš, Prof. Ing. PhD.	EUROSIM Vienna University	16.1.2010	17.1.2010
3.	Marček Dušan, Prof. Ing. CSc.	HTW Drážďany (D)	27.1.2010	19.2.2010
4.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	10.2.2010	20.2.2010
5.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Brusel (B)	31.1.2010	4.2.2010
6.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	18.1.2010	30.1.2010
7.	Klimo Martin, Prof. Ing. PhD.	EU Commission (B)	9.2.2010	11.2.2010
8.	Bizoňová Zuzana, Ing. PhD.	Juridical Building (A)	2.2.2010	5.2.2010
9.	Palúch Peter, Ing. PhD.	Wyzsza Szkola Inform. (PL)	23.2.2010	27.2.2010
10.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	28.2.2010	13.3.2010
11.	Varša Peter, RNDr. PhD.	Organiz. ETUI (RO)	1.3.2010	6.3.2010
12.	Klimo Martin, Prof. Ing. PhD.	EU Commission (B)	10.3.2010	11.3.2010
13.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	21.3.2010	1.4.2010
14.	Bizoňová Zuzana Ing. PhD.	University di Messina (I)	21.3.2010	25.3.2010
15.	Alexík Mikuláš, Prof. Ing. PhD.	University of England (GB)	23.3.2010	28.3.2010
16.	Márton Peter, Ing. PhD.	Wien Zvbf (A)	30.3.2010	31.3.2010

**In the 2<sup>nd</sup> Quarter 2010**

	<i>Name</i>	<i>Institute - Country</i>	<i>from</i>	<i>to</i>
1.	Kováčiková Tatiana, Assoc.Prof. Ing.PhD.	ETSI Sofia Antipolis (F)	5.4.2010	15.4.2010
2.	Baďura Štefan, Ing.	TU Vien (A)	7.4.2010	9.4.2010
3.	Lieskovský Anton, Ing.	TU Vien (A)	7.4.2010	9.4.2010
4.	Klimo Martin, prof. Ing. PhD.	EU Commission Valencia (E)	12.4.2010	15.4.2010
5.	Bachratá Katarína, RNDr. PhD.	Oxford University (GB)	23.4.2010	26.4.2010
6.	Peter Márton, Ing. PhD.	HTW Dresden (D)	25.4.2010	1.5.2010
7.	Fabián Peter, Assoc.Prof. Ing. CSc.	MAICH Chania (GR)	26.4.2010	1.5.2010
8.	Kováčiková Tatiana, Assoc.Prof. Ing.PhD.	ETSI Sofia Antipolis (F)	2.5.2010	13.5.2010
9.	Levashenko Vitaly, Assoc.Prof. Ing. PhD.	University Informatics Minsk	2.5.2010	9.5.2010
10.	Jánošíková Ľudmila, Assoc.Prof. Ing.PhD.	Wessex Institute (CY)	4.5.2010	9.5.2010
11.	Janáček Jaroslav, Prof. RNDr. CSc.	Wessex Institute (CY)	4.5.2010	9.5.2010
12.	Kapitulík Ján, Ing. PhD.	HTW Dresden (D)	4.5.2010	9.5.2010
13.	Klimo Martin, Prof. Ing. PhD.	Unit E1 INFSO (B)	5.5.2010	6.5.2010
14.	Zaitseva Elena, Assoc.Prof. Ing. PhD.	University of IT (PL)	12.5.2010	16.5.2010
15.	Bizoňová Zuzana, Ing. PhD.	Kongres Kalimera Kriti (GR)	15.5.2010	23.5.2010
16.	Kováčiková Tatiana, Assoc.Prof. Ing.PhD.	ETSI Sofia Antipolis (F)	16.5.2010	20.5.2010
17.	Alexander Ferianc, Ing.	Polytechnica Poznan (PL)	19.5.2010	21.5.2010
18.	Kováčiková Tatiana, Assoc.Prof. Ing.PhD.	ETSI Sofia Antipolis (F)	23.5.2010	7.6.2010
19.	Varša Peter RNDr. PhD.	SIC Radovlica (SL)	29.5.2010	5.6.2010
20.	Blaško Rudolf, RNDr. PhD.	Mykolas Romeris Uni. (LT)	31.5.2010	5.6.2010
21.	Blašková Martina, Assoc.Prof. Ing. PhD.	Mykolas Romeris Uni. (LT)	31.5.2010	5.6.2010
22.	Márton Peter, Ing. PhD.	ETH Zurich (CH)	14.6.2010	14.6.2010
23.	Klimo Martin, Prof. Ing. PhD.	European Commission (B)	23.6.2010	24.6.2010
24.	Tulejová Lucia, Ing.	University of and Astana	25.6.2010	2.7.2010
25.	Ďurišová Mária, Ing. PhD.	University of and Astana	25.6.2010	2.7.2010
26.	Stankovianksa Ida, RNDr. CSc.	University of and Astana	25.6.2010	2.7.2010
27.	Buzna Ľuboš, Ing. PhD.	ETH Zurich (CH)	26.6.2010	30.6.2010
28.	Kováčiková Tatiana, Assoc.Prof. Ing.PhD.	Q-Free ASA, Trondheim (N)	28.6.2010	1.7.2010

**In the 3<sup>rd</sup> Quarter 2010**

	<i>Name</i>	<i>Institute - Country</i>	<i>from</i>	<i>to</i>
1	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	4.7.2010	14.7.2010
2.	Klimo Martin, prof. Ing. PhD.	EU Commision (B)	15.7.2010	16.7.2010
3.	Varša Peter, RNDr. PhD.	TU Lisboa (PT)	17.7.2010	24.7.2010
4.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	18.7.2010	2.8.2010
5.	Bad'ura Štefan, Ing.	SJB Institute of Technol.(IN)	2.8.2010	9.8.2010
6.	Marček Dušan, Prof. Ing. CSc.	Yantai University (CHINA)	7.8.2010	14.8.2010
7.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	14.8.2010	29.8.2010
8.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	5.9.2010	12.9.2010
9.	Janáček Jaroslav, Prof. RNDr. CSc.	Univerzita Molde (N)	10.9.2010	20.9.2010
10.	Koháni Michal, Ing. PhD.	Univerzita Molde (N)	10.9.2010	20.9.2010
11.	Zábovský Michal, Assoc.Prof. Ing. PhD.	JAMK Jyväskylä (FIN)	13.9.2010	17.9.2010
12.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	EuroTeleserv (LX)	15.9.2010	17.9.2010
13.	Kováčiková Tatiana, Assoc.Prof. Ing. PhD.	ETSI Sofia Antipolis (F)	20.9.2010	28.9.2010
14.	Bizoňová Zuzana, Ing., PhD.	University Maribor (SL)	21.9.2010	25.9.2010
15.	Martón Peter Ing. PhD.	TU Berlin (D)	21.9.2010	24.9.2010
16.	Bizoňová Zuzana, Ing., PhD.	Catalonia Barcelona (E)	26.9.2010	30.9.2010
17.	Klimo Martin, Prof. Ing. PhD.	EU Commision (B)	26.9.2010	29.9.2010
18.	Zaitseva Elena Assoc.Prof. Ing. PhD.	Belarusian State University	26.9.2010	3.10.2010
19.	Fabián Peter Assoc.Prof. Ing. CSc.	IGP Lisboa (PT)	28.9.2010	3.10.2010

**In the 4<sup>th</sup> Quarter 2010**

	<i>Name</i>	<i>Institute - Country</i>	<i>from</i>	<i>to</i>
1	Kováčiková Tatiana Assoc.Prof. Ing. PhD.	BNetzS Mainz (D)	4.10.2010	8.10.2010
2	Hodoň Michal Ing.	University sv. Š. Godollo (H)	4.10.2010	6.10.2010
3	Karpiš Ondrej Ing. PhD.	University of Katowice (PL)	5.10.2010	8.10.2010
4	Kapitulík Ján Ing. PhD.	University of Katowice (PL)	5.10.2010	8.10.2010
5	Ševčík Peter Ing. PhD.	University of Katowice (PL)	5.10.2010	8.10.2010
6	Hittmár Štefan prof. Ing. PhD.	University of Wroclav (PL)	7.10.2010	8.10.2010
7	Bad'ura Štefan Ing.	University of Wroclav (PL)	17.1.2010	19.10.2010
8	Kováčiková Tatiana Assoc.Prof. Ing. PhD.	ATB Bremen, ETSI (F)	17.10.2010	23.10.2010
9	Blašková Martina Assoc.Prof. Ing. PhD.	Politechnika Czestochowa(PL)	22.10.2010	24.10.2010
10	Levashenko Vitaly Assoc.Prof. Ing. PhD.	Belarusian State University	24.10.2010	31.10.2010
11	Klilmo Martin Prof. Ing. PhD.	EU COMMISSION (B)	26.10.2010	26.10.2010
12	Kováčiková Tatiana Assoc.Prof. Ing. PhD.	ETSI Antipolis (F)	31.10.2010	9.11.2010
13	Kováčiková Tatiana Assoc.Prof. Ing. PhD.	ETSI Antipolis (F)	20.11.2010	4.12.2010
14	Dicová Jana Ing. PhD.	Silesian University (PL)	20.10.2010	23.10.2010
15	Blaško Rudolf RNDr. PhD.	Politechnika Czestochowa(PL)	22.10.2010	24.10.2010
16	Varša Peter RNDr. PhD.	ITC ILO Torino (I)	8.11.2010	13.11.2010
17	Zaitseva Elena Assoc.Prof. Ing. PhD.	UIPP,,BSU Minsk (Belarus)	15.11.2010	27.11.2010
18	Tarábek Peter Ing. PhD.	University of Wroclav (PL)	19.11.2010	22.11.2010
19	Šajna Marek Ing.	University of Wroclav (PL)	19.11.2010	22.11.2010
20	Fabián Peter Assoc.Prof. Ing. PhD	TU Berlin (D)	29.11.2010	4.12.2010
21	Klimo Martin Prof. Ing. PhD.	EU Comission (B)	2.12.2010	2.12.2010

### **Turnover of staff in 2010**

Within the space of year 2010 the Faculty has accepted into pedagogical and scientific staff following members:

1. Ing. Ján J a n e c h , PhD
2. Ing. Michal B r u n c k o , PhD.
3. Ing. Andrej H o l ú b e k , PhD.

In the same period following members left the Faculty:

1. RNDr. Miroslav I l i a š , PhD.
2. Prof. Ing. Karel Š o t e k , PhD.
3. Ing. Štefan B o c k o
4. Assoc. Prof. Ing. Juraj S l o v á k , PhD.
5. Assoc. Prof. Ing. Jozef S t r i š š , PhD.
6. Assoc. Prof. Ing. Jiří S l a v í k , PhD.
7. Prof. Ing. Mikuláš A l e x í k , PhD.
8. Prof. Ing. Petr C e n e k , PhD.
9. Ing. Mgr. Alžbeta K a n á l i k o v á , PhD.
10. Ing. Jana J a c k o v á
11. RNDr. Mária B r e z á n i o v á , PhD.

### **Human resource management**

As far as the required qualification structure of the pedagogical staff at the FMSI is concerned, the situation seen within the University's context is shown in following table. It shows current number of employees at the Faculty and its development in according to categories within the period 2005-2009.

<b>CATEGORY/YEAR</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Professors	10	9	11	10	9
Guest Professors	1	2	1	1	0
Assoc. Prof.	11	15	12	15	16
Senior Lecturers PhD.	27	35	45	58	56
Senior Lecturers	42	26	16	13	9
Assistants	2	1	1	0	0
Lectors	7	6	6	5	4
Research staff	13	9	9	6	8
Tech. Admin. Staff	49	49	52	47	44
<b>Total</b>	<b>162</b>	<b>152</b>	<b>153</b>	<b>155</b>	<b>146</b>

**Programmes of Study:**

**Bachelors Degree Programme: *INFORMATICS***

**1<sup>st</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
1	<b>COMPULSORY</b>				
	5BF001	Algebra	2-2-0	6	DMM
	5BI037	Informatics 1	2-2-2	8	DI
	5BF015	Mathematics for Informatics	2-2-0	8	DMM
	5BL033	Introduction to studies	2-0-2	3	DIN
	5BE001	Basics of Economic Theory	2-2-0	5	DMME
	<b>OPTIONAL</b>				
	5BF009	Practice of Mathematics	0-2-0	1	DMM
	5BL015	Foreign Language	0-2-0	3	FSc_DL
	5BL009	Physical Education	0-0-2	1	IPE

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
2	<b>COMPULSORY</b>				
	5BA026	Algorithmic Graphs Theory	2-2-0	6	DMM
	5BA024	Discrete Probability	2-2-1	6	DTN
	5BI038	Informatics 2	2-2-2	7	DI
	5BN010	Communication Technologies	2-0-2	5	DIN
	5BE002	Microeconomics	2-2-0	6	DMME
	<b>OPTIONAL</b>				
	5BL016	Foreign Language	0-2-0	3	FSc_DL
	5BL010	Physical Education	0-0-2	1	IPE

**Recommended number of credits in the 1<sup>st</sup> year of study: 60**

**2<sup>nd</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
3	<b>COMPULSORY</b>				
	5BI039	Informatics 3	2-1-2	5	DI
	5BH001	Logical Systems	2-0-2	6	DTC
	5BF017	Mathematical Analysis 1	2-2-1	6	DMM
	5BI025	Assemblers	2-0-2	5	DTN
	<b>OPTIONAL</b>				
	5BE009	Economy of Enterprise	2-1-0	5	DMME
	5BI045	Graphics in Computers Applications	1-0-3	4	DIN
	5BI033	Spreadsheets	2-0-2	3	DI
	5BI035	Techniques of Programming 1	0-0-2	4	DI
	5BL017	Foreign Language	0-2-0	3	FSc_DL
	5BL011	Physical Education 3	0-0-2	1	IPE

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
4	<b>COMPULSORY</b>				
	5UI024	Data Structures 1	2-0-2	6	DTN
	5BA022	Discrete Optimisation	2-0-2	6	DTN
	5BH018	Digital Computers	3-0-1	6	DTC
	5BI006	Basics of Database Systems	2-0-2	6	DI
	<b>OPTIONAL</b>				
	5BE008	Macroeconomics	2-2-0	5	DMME
	5BE014	Small and Medium Entrepreneurship	2-2-0	6	DMME
	5BA008	Numerical Methods	2-0-2	3	DMM
	5BI044	Computers Graphic and Animation	1-0-3	4	DIN
	5BA030	Probability and Statistics	2-2-0	6	DTN
	5BL018	Foreign Language 4	0-2-0	3	FSc_DL
	5BL012	Physical Education 4	0-0-2	1	IPE

Recommended number of credits in the 2<sup>nd</sup> year of study: 120  
3<sup>rd</sup> year of study

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
5	<b>COMPULSORY</b>				
	5UA013	Modelling and Simulation	2-0-2	6	DTN
	5BS001	Operational Systems	2-0-2	6	DI
	5US003	Software Engineering	2-0-4	6	DI
	<b>OPTIONAL</b>				
	5US005	GIS Application in the Management	2-0-2	6	DTN
	5BI031	Database System - Access	2-0-2	4	DI
	5BS005	Identification of Systems	2-0-2	6	DTC
	5UM023	Communication Management	2-2-0	5	DMT
	5BF019	Mathematical Analysis 3	2-1-1	6	DMM
	5BH023	Microprocessors	2-0-2	6	DTC
	5US007	Multimedia Information Systems	2-0-2	6	DTN
	5UA005	Petri Nets	2-0-2	6	DTN
	5BL003	Law 1	2-2-0	4	DMME
	5BL035	Sociology for Managers	1-2-0	4	DMNT
	5BH021	Technical Equipment of PC	0-0-2	3	DTC
	5BI029	Basics of Programming in WINDOWS	2-0-2	4	DST
	5UA03	Game Theory	2-2-0	6	DMM
5BL013	Physical Education 5	0-0-2	1	IPE	

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
6	<b>COMPULSORY</b>				
	5BZ001	Bachelors Project	0-0-8	12	G
	5BL040	English Language 1	0-0-0	3	FSc_DL
	<b>OPTIONAL</b>				
	5IUE04	Taxes and Budget	2-1-0	5	DMME
	5BS012	Implementation of UNIX-LINUX	2-0-2	6	DMM
	5BS004	Information and Control Systems in Transport	2-0-1	3	DST
	5BI032	Compilers	2-0-2	6	DI
	5BS002	Management Information Systems	2-0-2	6	DMT
	5BA020	Modern Approximate Methods	2-0-2	4	DMM
	5UI014	Computers Graphics	2-0-2	6	DTN
	5BI022	Open Source Software	1-0-3	4	DMM
	5UI002	Reliability Theory	2-0-2	5	DI

6	5BL004	Law 2	2-2-0	5	DMME
	5BL06	Psychology	2-1-0	4	G
	5BL14	Physical Education 6	0-0-2	1	IPE

### **Compulsory Optional Courses**

Groups of Compulsory Optional Courses include further themes from kernel of knowledge for study field Information Systems in the Master's Degree Programme. Student is to choose the groups of courses, which correspond to his future professional orientation (*Applied Informatics*, Distributed and Parallel Systems, Systems of Support for Decision-Making, Business Informatics, Information-Communication NetArticles). These groups of Compulsory optional course are connected with the Programmes of study in MSc. Degree level due to professional orientation. Minimum number of credits to conclude the Bachelors Programme of study: **180**

#### **Applied Informatics**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5US009	Internet and Intranet Application Development	2-0-2	4	DI
	<b>COMPULSORY OPTIONAL</b>				
Spring	5BI41	JAVA – Language and Development Applications	2-0-2	6	DI
	5BA006	Modelling and Optimisation	2-0-2	6	DTN
	5BI046	Software Modelling	2-0-2	6	DI

#### **Systems for Support of Decision-Making, Business Informatics**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5BE07	Finance of Enterprise	2-0-2	6	DMME
	<b>COMPULSORY OPTIONAL</b>				
Spring	5BA06	Modelling and Optimisation	2-0-2	6	DTN
	5BI046	Software Modelling	2-0-2	6	DI

#### **Information-Communication NetArticles**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5BN003	Computer NetArticles 1	2-0-4	6	DIN
	5BN011	Computer NetArticles 3	2-0-2	6	DIN
	<b>COMPULSORY OPTIONAL</b>				
Spring	5US004	Analysis of Processes	2-0-2	6	DIN
	5BN004	Computer NetArticles 2	2-0-4	6	DIN

### **Optional Courses**

Following courses are recommended for the students intending to study in Masters Degree Programme

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>OPTIONAL</b>				
	5BF019	Mathematical Analysis 3	2-2-1	6	DMM
	<b>COMPULSORY OPTIONAL</b>				
Spring	5BA030	Probability and Statistics	2-2-0	6	DTN

**Bachelors Degree Programme: COMPUTER ENGINEERING**

**1<sup>st</sup> year**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
1	<b>COMPULSORY</b>				
	5BF001	Algebra	2-2-0	6	DMM
	5BI037	Informatics 1	2-2-2	8	DI
	5BF017	Mathematical Analysis 1	2-2-1	6	DMM
	5BE001	Basics of Economic Theory	2-2-0	6	DMME
	5BF005	Basics of Physics	3-1-1	6	FEE
	<b>OPTIONAL</b>				
	5BF009	Practice of Mathematics	0-2-0	1	DMM
	5BL015	Foreign Language 1	0-2-0	3	FSc-DL
5BL009	Physical Education	0-0-2	1	IPE	

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
2	<b>COMPULSORY</b>				
	5BF004	Electrical Circuits	2-2-0	5	DTC
	5BI038	Informatics 2	2-2-2	7	DI
	5BN010	Communication Technologies	2-0-2	5	DIN
	5BF014	Mathematical Analysis 2	2-2-1	6	DMM
	5BH008	Theory of Automatic Control 1	2-1-1	6	DTC
	<b>OPTIONAL</b>				
	5BL016	Foreign Language 2	0-2-0	3	FSc-DL
	5BL010	Physical Education 2	0-0-2	1	IPE

Recommended number of credits in the 1<sup>st</sup> year of study: 60

**2<sup>nd</sup> year**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
3	<b>COMPULSORY</b>				
	5BF007	Electronics	2-0-2	6	DTC
	5BI039	Informatics 3	2-1-2	5	DST
	5BH001	Logical Systems	2-0-2	6	DTC
	<b>COMPULSORY OPTIONAL</b>				
	5BF019	Mathematical Analysis 3	2-2-1	6	DMM
	5BN003	Computer NetArticles 1	2-0-4	6	DIN
	5BH009	Theory of Automatic Control 2	2-0-3	6	DTC
	5BS011	UNIX – Development Environment	1-0-3	4	DMM
	<b>OPTIONAL</b>				
	5BI045	Graphics in Computers Applications	1-0-3	4	DIN
	5BI025	Assemblers	2-0-2	5	DTN
	5BL017	Foreign Language 3	0-2-0	3	FSc-DL
5BL011	Physical Education 3	0-0-2	1	IPE	

From the group of Compulsory optional courses student has to choose min one course

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
4	<b>COMPULSORY</b>				
	5BA024	Discrete Probability	2-2-1	6	DTN
	5BH002	Measurements	2-0-2	6	DTC
	5BL032	Legal and Ethic Aspects of Information Technologies	2-0-0	3	DMT
	5BH018	Digital Computers	3-0-1	6	DTC
	5BH004	Digital Systems	2-0-2	6	DTC
	<b>COMPULSORY OPTIONAL</b>				
	5BN004	Computer NetArticles 2	2-0-4	6	DIN
	5BH022	Elements of Automatic Systems	2-0-2	6	DTC
	5BI006	Basics of Database Systems	2-0-2	6	DI
	<b>OPTIONAL</b>				
	5BF010	Complex Variable and Integral Transformation	2-1-1	4	DMM
	5BA008	Numerical Methods	2-0-2	3	DMM
	5BI044	Computers Graphic and Animation	1-0-3	4	DIN
	5UE004	Basics of Electronic Business	2-0-2	6	DIN
	5BL018	Foreign Language 4	0-2-0	3	FSc-DL
	5BL012	Physical Education 4	0-0-2	1	IPE

3<sup>rd</sup> year

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
5	<b>COMPULSORY</b>				
	5BH005	Electronic Systems	2-0-2	6	DTC
	5BH019	Construction and Technology of Electronic System Production	1-0-3	4	DTC
	5BS001	Operational Systems	2-0-2	6	DI
	<b>COMPULSORY OPTIONAL</b>				
	5BH013	Microcomputers and their Applications	1-0-3	6	DTC
	5BH023	Microprocessors	2-0-2	6	DTC
	5BI029	Basic Programming in Windows	2-0-2	4	DST
	<b>OPTIONAL</b>				
	5BI007	Algorithms and Computational Complexity	2-0-0	3	DI
	5BI031	Database Systems – MS Access	2-0-2	4	DI
	5BS005	Identification of Systems	2-0-2	6	DTC
	5UM023	Communication Management	2-2-0	5	DMT
	5US007	Multimedia Information Systems	2-0-2	6	DTN
	5UA005	Petri Nets	2-0-2	6	DTN
	5BN011	Computers NetArticles 3	2-0-2	6	DIN
	5BL003	Law 1	2-2-0	4	DMME
	5BL035	Sociology for Managers	1-2-0	4	DMT
	5BH021	Technical Equipments of PC	0-0-2	3	DTC
	5US009	Internet and Intranet Application Development	2-0-2	4	DST
5BL013	Physical Education 5	0-0-2	1	IPE	

From the group of Compulsory optional courses student has to choose min one course



Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
6	<b>COMPULSORY</b>				
	5BH0020	Computer Engineering	2-0-4	6	DTC
	5BZ001	Bachelors Project	0-0-8	12	G
	5BL040	English Language	0-0-0	3	FSc-DL
	<b>COMPULSORY OPTIONAL</b>				
	5BI010	JAVA – Language and Development Applications	2-0-2	6	DI
	5BH014	Computer Process Control	2-0-3	7	DTC
	<b>OPTIONAL</b>				
	5BS012	Implementation of UNIX - LINUX	2-0-2	6	DMM
	5BS004	Information and Control Systems in Transport	2-0-1	3	DST
	5BI032	Compilers	2-0-2	6	DI
	5BE014	Small and Medium Entrepreneurships	2-2-0	6	DMT
	5BL004	Law 2	2-2-0	5	DMME
	5BL006	Psychology	2-1-0	4	G
	5BA010	Scheduling Theory	2-2-0	6	DMM
	5UI002	Reliability Theory	2-0-2	5	DI
5BL014	Physical Education 6	0-0-2	1	IPE	

**From the group of Compulsory optional courses student has to choose min one course**

**Minimum number of credits to conclude the Bachelors Programme of study: 180**

**Abbreviations:** DMM - Department of Mathematical Methods  
DI - Department of Informatics  
DTC - Department of Technical Cybernetics  
DIN - Department of Information NetArticles  
DTN - Department of Transportation NetArticles  
DMT - Department of Management Theories  
DMME - Department of Macro and Microeconomics  
DST - Department of Software Technology  
G - Guarantee for Programme of Study  
FEE - Faculty of Electrical Engineering  
FSc-DL - Faculty of Science – Department of Languages  
IPE - Institute of Physical Education

**Bachelors Degree Programme: MANAGEMENT**

**1<sup>st</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
1	<b>COMPULSORY</b>				
	5BF001	Algebra	2-2-0	6	DMM
	5BI047	Informatics for Management 1	2-1-1	6	DI
	5BF017	Mathematical Analysis 1	2-2-1	6	DMM
	5BL03	Law 1	2-2-0	6	DMME
	5BE001	Basics of Economic Theory	2-2-0	6	DMME
	<b>OPTIONAL</b>				
	5BF009	Practice of Mathematics	0-2-0	1	DMM
	5BL015	Foreign Language 1	0-2-0	3	FSc-DL
5BL009	Physical Education	0-0-2	1	IPE	

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
2	<b>COMPULSORY</b>				
	5BI040	Informatics for Management 2	2-1-1	6	DI
	5BE014	Small and Medium Entrepreneurship	2-2-0	6	DMT
	5BM010	Management	2-2-0	6	DMT
	5BE002	Microeconomics	2-2-0	6	DMME
	5BE016	Business Economy	3-2-0	6	DMT
	<b>OPTIONAL</b>				
	5BL016	Foreign Language 2	0-2-0	3	FSc-DL
	5BL010	Physical Education 2	0-0-2	1	IPE

**Recommended number of credits in the 1<sup>st</sup> year of study: 60**

**2<sup>nd</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
3	<b>COMPULSORY</b>				
	5BA015	Economical Statistics	2-1-1	6	DTN
	5BE005	Financial Accounting	2-2-0	6	DMME
	5BS013	Information Systems of Enterprise	2-0-2	6	DMT
	5UM011	Project Management	2-1-1	6	DMT
	<b>OPTIONAL</b>				
	5BI045	Graphics in Computers Applications	1-0-3	4	DIN
	5BI033	Spreadsheets	2-0-2	3	DI
	5BL17	Foreign Language 3	0-2-0	3	FSc-DL
	5BL11	Physical Education 3	0-0-2	1	IPE

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
4	<b>COMPULSORY</b>				
	5BE018	Marketing	2-2-0	6	DMT
	5BM016	Operational Management	3-1-0	6	DMT
	5BM014	Human Resource Management	2-2-0	6	DMT
	<b>OPTIONAL</b>				
	5BA008	Numerical Methods	2-0-2	3	DMM
	5BI044	Computers Graphic and Animation	1-0-3	4	DIN
	5BI046	Software Modelling	2-0-2	6	DST
	5BL018	Foreign Language 4	0-2-0	3	FSc-DL
5BL012	Physical Education 4	0-0-2	1	IPE	

Recommended number of credits in the 2<sup>nd</sup> year of study: 120

3<sup>rd</sup> year of study

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
5	<b>COMPULSORY</b>				
	5BM013	Quality Management	2-2-0	6	DST
	5BE007	Finance of Enterprise	2-2-0	6	DMME
	<b>OPTIONAL</b>				
	5US005	GIS Application in the Management	2-0-2	6	DTN
	5BI031	Database Systems – MS Access	2-0-2	4	DI
	5BS007	Multimedia Information Systems	2-0-2	6	DTN
	5BH021	Technical Equipments of PC	0-0-2	3	DTC
	5UA003	Game Theory	2-2-0	6	DST
5BL013	Physical Education 5	0-0-2	1	IPE	

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
6	<b>COMPULSORY</b>				
	5BZ001	Bachelors Project	0-0-8	12	G
	5BL002	Foreign Language 1	0-0-0	3	FSc-DL
	<b>OPTIONAL</b>				
	5BS004	Information and Control Systems in Transport	2-0-1	3	DST
	5II014	Computers Graphics	2-0-2	6	DTN
5BL014	Physical Education 6	0-0-2	1	IPE	

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5UE013	Controlling	2-1-0	4	DMME
	5BM015	Supply Management	2-1-0	4	DMT
	5BA013	Modelling and Simulation	2-0-2	6	DTN
5BL035	Sociology	1-2-0	4	G	

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
	<b>COMPULSORY OPTIONAL</b>				
<b>Spring</b>	5UE022	Taxes and Budget	2-0-1	5	DMME
	5BL036	Business Ethics	2-1-0	4	DMT
	5BE020	Financial Analysis	2-1-1	4	DMME
	5BM018	Quality in Services	2-1-0	4	DM
	5BE008	Macroeconomics	2-2-0	5	DMME
	5BM006	Marketing Communication	2-1-0	4	DMT
	5BF014	Mathematical Analysis 2	2-2-1	6	DMM
	5BL038	Politology	2-2-0	4	DMT
	5BL004	Law 2	2-2-0	5	DMME
	5BL006	Psychology	1-2-0	4	G

**Minimum number of credits to conclude the Bachelors Programme of study: 180**

**Abbreviations:** DMM - Department of Mathematical Methods  
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 DTN - Department of Transportation NetArticles  
 DMT - Department of Management Theories  
 DMME - Department of Macro and Microeconomics  
 DST - Department of Software Technology  
 G - Guarantee for Programme of Study  
 FEE - Faculty of Electrical Engineering  
 FSc-DL - Faculty of Science – Department of Languages  
 IPE - Institute of Physical Education

**[www.fri.uniza.sk](http://www.fri.uniza.sk)** link: Study - Bachelors study

**Masters Degree Programme: INFORMATION SYSTEMS**

**1<sup>st</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
1	<b>COMPULSORY</b>				
	5IN017	Architecture of NetArticles	2-0-2	5	DIN
	5II015	Data Structures 2	2-0-2	5	DTN
	5II007	Database Systems 2	2-0-2	5	DI
	5IN009	Optimisation of NetArticles	2-0-2	5	DTN
	<b>COMPULSORY (due to Professional Orientation)</b>				
	5IP001	Project 1	0-2-4	6	G

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
2	<b>COMPULSORY</b>				
	5IS008	Architectures of Information systems	2-0-2	5	DIN
	5II008	Discrete Simulation	2-0-2	5	DTN
	5IA002	Theory of Information	2-0-2	5	DMM
	<b>COMPULSORY (due to Professional Orientation)</b>				
	5IP002	Project 2	0-2-4	6	G

**Recommended number of credits in the 1<sup>st</sup> year of study: 60**

**2<sup>nd</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
3	<b>COMPULSORY</b>				
	5II017	Cryptography and Safety	2-0-2	5	DMM
	5IP005	Internship	0-0-0	0	G
	<b>COMPULSORY (due to Professional Orientation)</b>				
		5IP003	Project 3	0-2-4	6

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
4	<b>COMPULSORY</b>				
	5IZ001	Diploma Thesis	0-0-20	30	G
	5IL004	English Language 2	0-0-0	3	DL

**Minimum number of credits to conclude the form of study: 120**

**Groups of Compulsory Optional courses from the kernel of the Programme of Study**

**Systems of Support for Decision-Making**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5II001	Fuzzy Sets and Neural NetArticles	2-0-2	5	DTN
	5IE001	Theory of Enterprise	2-2-0	5	DMME

Semester	<b>COMPULSORY OPTIONAL</b>				
Spring	5US005	GIS Application in the Management	2-0-2	5	DTN
	5IN008	Communication Systems	2-0-2	5	DTN
	5IA006	Mathematical Programming	2-0-2	5	DTN

**Applied Informatics**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department	
Semester	<b>COMPULSORY OPTIONAL</b>					
	Autumn	5II013	Advanced Object Technologies	2-0-2	5	DTS
		5IE001	Theory of Enterprise	2-0-2	5	DMME

Semester	<b>COMPULSORY OPTIONAL</b>				
Spring	5II028	Database Languages	2-0-2	5	DI
	5II012	Data Mining	2-0-2	5	DI
	5IS006	Geographic Information Systems	2-0-2	5	DTN

**Information Communication NetArticles**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department	
Semester	<b>COMPULSORY OPTIONAL</b>					
	Autumn	5IN007	Signal Transmissions	2-0-2	5	G-FEE
		5IP007	Design of NetArticles	2-0-2	5	G-FEE

Semester	<b>COMPULSORY OPTIONAL</b>				
Spring	5IN003	Integration of NetArticles	2-0-2	5	DIN
	5IN010	Theory of NetArticles	2-0-2	5	DIN

**Business Informatics**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5IE017	Econometrics	2-0-2	5	DMME
	5IE015	Finance	2-2-0	5	DMME
	5II001	Fuzzy Sets and Neural NetArticles	2-0-2	5	DTN

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Semester	<b>COMPULSORY OPTIONAL</b>				
Spring	5IE010	Accounting and Analysis	3-2-0	5	DMME
	5II024	Artificial Neural NetArticles and Soft Computing	2-0-2	5	DMME

### Distributed and Parallel Systems

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>COMPULSORY OPTIONAL</b>					
Autumn	5IS007	Distributed Systems	2-0-2	5	DTC
	5IS011	HPC and Grid computing	2-0-2	5	DTC
	5IS013	Parallel Developing Standards Open MP and MPI	2-0-2	5	DTC

Semester	<b>COMPULSORY OPTIONAL</b>				
Spring	5IA006	Mathematical Programming	2-0-2	5	DTN
	5II026	Complexity of Distributed and Parallel Algorithms	2-0-2	5	DTC

### Groups of Optional courses

#### Systems of Support for Decision-Making

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>OPTIONAL</b>					
Autumn	5IS007	Distributed Systems	2-0-2	5	DTC
	5IS009	Expert Systems	2-0-2	6	DTN
	5IN005	Architecture of NetArticles	2-0-2	5	DIN

Semester	<b>OPTIONAL</b>				
Spring	5US04	Analysis of Processes	2-0-2	5	DIN
	5II028	Database Languages	2-0-2	5	DI
	5IE012	Prognostics	2-0-2	6	DMME
	5IS002	Real Time Systems Programming	2-0-2	5	DI
	5UI002	Reliability Theory	2-0-2	5	DI

### Applied Informatics

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>OPTIONAL</b>					
Autumn	5IS009	Expert Systems	2-0-2	6	DTN
	5IS011	HPC and Grid computing	2-0-2	5	DTC
	5IN005	Architecture of NetArticles	2-0-2	5	DIN

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>Semester</b>	<b>OPTIONAL</b>				
<b>Spring</b>	5US004	Analysis of Processes	2-0-2	5	DIN
	5IM014	Quality Management – Access and TQM Methods	2-1-0	5	DMT
	5IE012	Prognostics	2-0-2	6	DMME
	5IS010	Real Time Systems Programming	2-0-2	5	DI
	5UI002	Reliability Theory	2-0-2	5	DI

### Information Communication NetArticles

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>Semester</b>	<b>OPTIONAL</b>				
<b>Autumn</b>	5IS009	Expert Systems	2-0-2	6	DTN
	5IS011	HPC and Grid computing	2-0-2	5	DTC
	5IS013	Parallel Developing Standards Open MP and MPI	2-0-2	5	DTC

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>Semester</b>	<b>OPTIONAL</b>				
<b>Spring</b>	5IS006	Geographical Information Systems	2-0-2	5	DTN
	5IE012	Prognostics	2-0-2	6	DMME
	5IS002	Real Time Systems Programming	2-0-2	5	DI
	5UI002	Reliability Theory	2-0-2	5	DI

### Business Informatics

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>Semester</b>	<b>OPTIONAL</b>				
<b>Autumn</b>	5IE005	Management Accounting	2-2-0	6	DMME
	5II013	Advanced Object Oriented Technologies	2-0-2	5	DI
	5IN005	Architecture of NetArticles	2-0-2	5	DIN
	5II023	Artificial Intelligence	2-0-2	5	DTN

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
<b>Semester</b>	<b>OPTIONAL</b>				
<b>Spring</b>	5II003	Database Languages	2-0-2	5	DI
	5IE012	Prognostics	2-0-2	6	DMME



**Distributed and Parallel Systems**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>OPTIONAL</b>				
	5IS009	Expert Systems	2-0-2	6	DTN
	5IN005	Architecture of NetArticles	2-0-2	5	DIN

Semester	<b>OPTIONAL</b>				
Spring	5US004	Analysis of Processes	2-0-2	5	DIN
	5IS006	Geographical Information Systems	2-0-2	5	DTN
	5IM014	Quality Management – Access and TQM Methods	2-1-0	5	DMT
	5IE012	Prognostics	2-0-2	6	DMME
	5IS010	Real Time Systems Programming	2-0-2	5	DI
	5UI002	Reliability Theory	2-0-2	5	DI

Minimum number of credits to conclude the form of study: 120

**Masters Degree Programme: COMPUTER ENGINEERING**

**1<sup>st</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
1	<b>COMPULSORY</b>				
	5IPOP1	Project 1	0-2-4	6	G
	5IH009	Digital Signal Processing 1	2-0-2	5	DTC
	5IH013	Technical Means of Control and Information Systems	2-0-2	5	DTCE
	5IH011	Introduction to the Theory of Discrete Systems	2-2-0	6	DMT

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
2	<b>COMPULSORY</b>				
	5IH002	Design of the Customer Integrated Circuits	2-0-2	5	DTC
	5IH006	Digital Data Transmission	2-0-2	5	DTC
	5IPOP2	Project 2	0-2-4	6	G

Recommended number of credits in the 1<sup>st</sup> year of study: 60

**2<sup>nd</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
3	<b>COMPULSORY</b>				
	5IN005	NetArticles Architecture	2-0-2	5	DIN
	5IP005	Internship	0-0-0	6	DMT
	5IPOP3	Project 3	0-2-4	6	G

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
4	<b>COMPULSORY</b>				
	5IZ001	Diploma Thesis	0-0-20	30	G
	5IL004	English Language 2	0-0-0	3	DL

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5IH007	Adaptive Systems of Automatic Control	2-0-2	5	DTC
	5IS007	Distributed Systems	2-0-2	5	DTCT
	5II017	Cryptography and Safety	2-0-2	5	DMM
	5II013	Advanced Object Oriented Technologies	2-0-2	5	DI
	5II021	Basics of Programming in the Kernel of an Operational System	2-0-2	5	DI

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Spring	<b>COMPULSORY OPTIONAL</b>				
	5II012	Data Mining	2-0-2	5	DI
	5IH008	Digital Signal Processing 2	2-0-2	5	DTC
	5IA002	Theory of Information	2-2-0	5	DMM

From the group of Compulsory Optional Courses student must choose courses to fulfil minimum number of credits **15**  
**Minimum number of credits to conclude the form of study: 120**

**Masters Degree Programme: MANAGEMENT**

**1<sup>st</sup> year of study**

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
1	<b>COMPULSORY</b>				
	5IE017	Econometrics	2-0-2	5	DMT
	5IE005	Management Accounting	2-2-0	6	DMME
	5IM021	Marketing Control	2-2-0	6	DMT
	5US003	Software Engineering	2-0-4	6	DI
	5PM1	Project 1	0-2-4	6	G

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
2	<b>COMPULSORY</b>				
	5IM026	International Management and Marketing	2-2-0	6	DMT
	5IM022	Systems for Support of Decision-Making	2-0-2	6	DMT
	5IPOM2	Project 2	0-2-4	6	G

Recommended number of credits in the 1<sup>st</sup> year of study: 60

2<sup>nd</sup> year of study

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
3	<b>COMPULSORY</b>				
	5IM027	Logistics	3-1-0	6	DMT
	5IM017	Organizational Behaviour	2-2-0	6	DMT
	5IP009	Design of Management Systems	0-4-1	6	DMT
	5IM009	Strategic Management	2-0-2	6	DMT
	5IP005	Internship	0-0-0	0	G
	5IP0M3	Project 3	0-2-4	6	G

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
4	<b>COMPULSORY</b>				
	5IZ001	Diploma Thesis	0-0-20	30	G
	5IL006	Foreign Language 2	0-0-0	3	DL
	<b>OPTIONAL</b>				
	5IM018	Process Management	2-2-0	4	DST

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>COMPULSORY OPTIONAL</b>				
	5UM023	Managerial Communication	2-2-0	5	DMT
	5IM011	Management Games and Simulations	1-0-2	5	DMT
	5IM025	Marketing Tools and Applications	2-0-2	5	DMT

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Spring	<b>COMPULSORY OPTIONAL</b>				
	5IM014	Complex Quality Management- TQM Methods	2-1-0	5	DMT
	5IM016	Marketing Research	2-1-0	3	DMT
	5IM024	Marketing of Services	2-2-0	5	DMT
	5IE012	Prognostic	2-2-0	6	DMME

From the group of Compulsory Optional Courses student must choose courses to fulfil minimum number of credits 15

Semester	Code	COURSE	HOURS PER WEEK	ECTS	Department
Autumn	<b>OPTIONAL</b>				
	5IS009	Expert Systems	2-0-2	4	DTN
	5IE015	Finance	2-2-0	5	DMME
	5US009	Internet and Intranet Application Development	2-0-2	4	DST
Semester	<b>OPTIONAL</b>				
Spring	5IS008	Architecture of Information Systems	2-0-2	5	DIN
	5IS006	Geographical Information Systems	2-0-2	5	DTN
	5IE006	Capital and Investment Theories	2-2-0	6	DMME
	5UE004	Basics of Electronic Business	2-0-2	5	DIN

Minimum number of credits to conclude the form of study: 120

**Students with excellent results:**

**Excellent Masters Thesis:**

Student Name	Thesis Title	Supervisor
Jana Púchyová	Computer controlled laser pointing system	Peter Gubiš
Marek Kvet	Monitoring system for On Board Unit	Emil Kršák
Ľubomír Toman	Exact method for solving evacuation problem as a part of tool for decision support in case of emergency	Jaroslav Janáček
Pavol Burdiak	Configurable test system for manufacturing tests of specified class of products	Peter Gubiš
Štefan Toth	Recognition and localization of traffic signs	Emil Kršák
Anna Závodská	Marketing strategy of product's introduction to the market	Jakub Soviar
Katarína Matiščíková	Generate driven book – module for generating of rides in road network	Štefan Koválik

**Excellent Bachelors Thesis:**

Student Name	Thesis Title	Supervisor
Miroslav Kvašay	N-body problem - methods and Open-Source software.	Michal Kaukič
Lucia Klimčíková	Assignment of projects to students	Stanislav Palúch
Maroš Bálint	Effectively Comparison of Shortest Path Algorithms in Huge Graphs	Stanislav Palúch
Samuel Brezani	Current state of company CRM system analysis and new system design	Karol Gronďák
Michal Mruškovič	Implementation of the RIP Routing Protocol	Peter Palúch

**Junior Chamber International – SLOVAKIA** has awarded degree

***Student Personality of SLOVAKIA in the academic year 2009 / 2010***

**1<sup>st</sup> place in the category ECONOMICS**

for the PhD.-student of the **Faculty of Management Science and Informatics, University of Žilina**

**Ing. Lucia Murínová**

***Student participation at the Professional Competitions:***

**NAG 2010 National Round** – competition focused on configuration and control of small netArticles taking place on Slovak Technology University in Bratislava on March 4<sup>th</sup>, 2010

**2<sup>nd</sup> place:** Jakub **Hromádík**

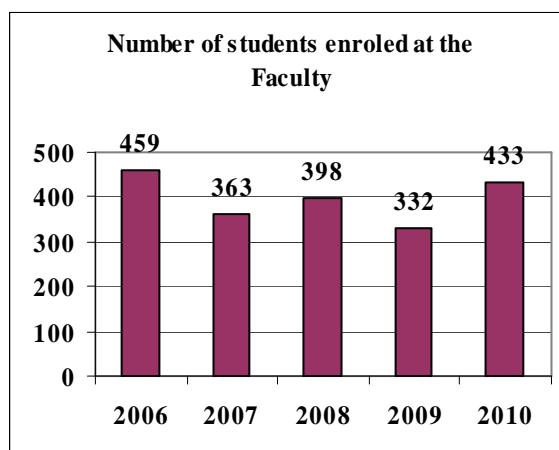
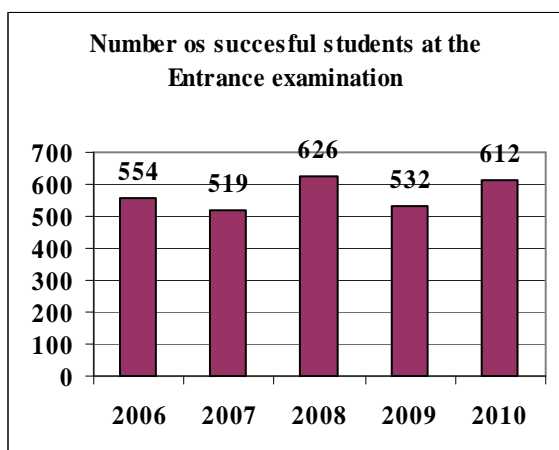
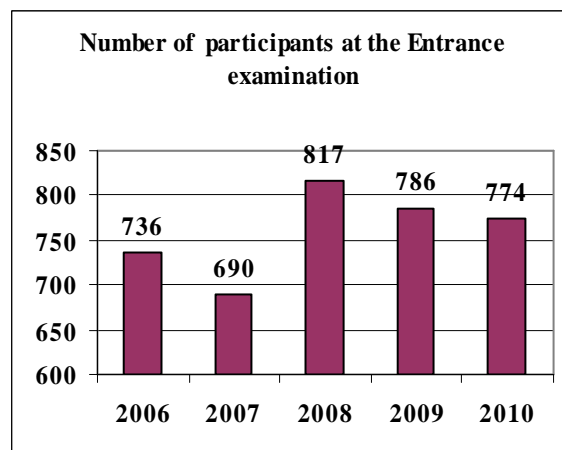
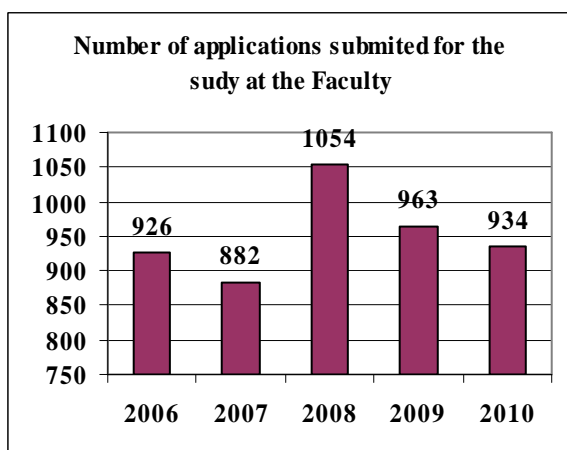
**5<sup>th</sup> place:** Michal **Hruškovič**

**Students:**

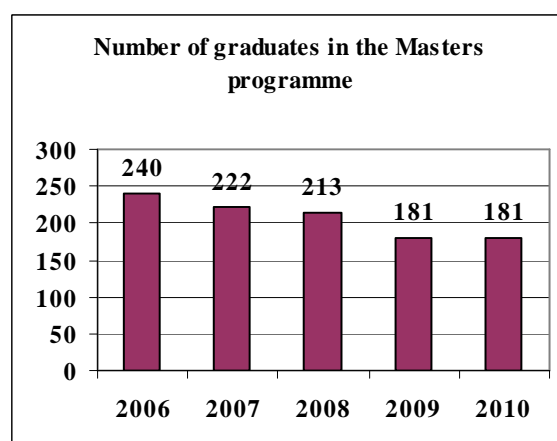
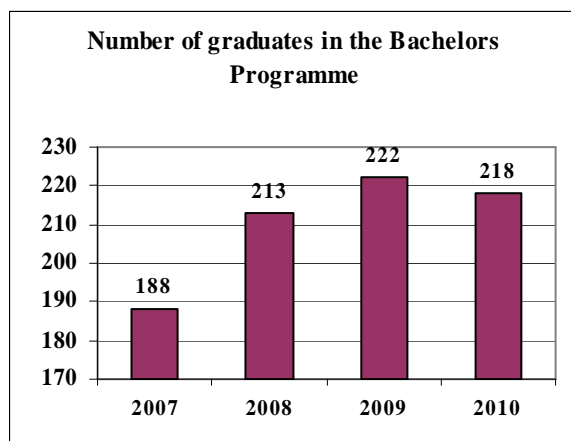
In November 2010, there were **872** students for Bachelors degree programme, **363** students for Masters Degree programme and **33** doctoral full-time and **34** doctoral part-time students at the Faculty.

An overview of the candidates for the study, students and graduates at the Faculty in the last five years is illustrated in following graphs:

In June 2010 participated upon the Entrance exams **774** candidates for the study at the Faculty. From this number **612** were successful and **433** students were enrolled. They started in September 2010 their Programmes of study at the Faculty



The survey of graduates from the last years is on the following graphs:



### **Programme ERASMUS and other international activities of the Faculty**

There are following bilateral agreements signed in 2010 for the exchange of students and pedagogical staffs in the frame of the programme ERASMUS with the following institutes and schools:

- Technische Universität Dresden, (D)
- Technische Universität Braunschweig, (D)
- Hochschule für Telekommunikation Leipzig (D)
- Hochschule für Technik und Wirtschaft, Dresden, (D)
- Telecom SudParis, Evry, (F)
- Telecom and Management SudParis, Evry, (F)
- Université de Poitiers, (F)
- University of Science and Technology, Telecom Lille, (F)
- Utrecht University (NL)
- Linköping University, (S)
- University of Vaasa, (FIN)
- JAMK University of Applied Sciences Jyväskylä, School of Information Technology, (FIN)
- Seinäjoki University of Applied Sciences, (FIN)
- University College of Molde, (N)
- Universidad Politecnica de Valencia, Facultad d´Informatica, (E)
- Universidad Politecnica de Valencia, Escuela Technica Superior deTelecomunicacion, (E)
- University of Porto (P)
- Mikolas Romeris University, Vilnius (LT)
- Széchenyi István University, Győr, (H)
- Technical University of Sofia, (BG)
- College of Telecommunications and Posts, Sofia, (BG)
- University of Pardubice (CZ)
- College of Computer Science and Business Administration, Lomža (PL)
- Technical University, Radom (PL)
- Kielce University of Technology (PL)

In the academic year **2010** followed the programme of study at the partner's universities and Institutions in the frame of the programmes ERASMUS **32** students from the Faculty

### **Foreigner Students at the Faculty in 2010**

In the year 2010 took part on the study stay at the Faculty **one** student from FRANCE, **2** students from BULGARIA, **4** from PORTUGAL, **one** student from LATVIA and **one** student from CHROATIA.

In the frame of Student Training Agreement with Telecom SudParis Evry, FRANCE, **one** student took part on two months internship at the Faculty.

### **Information Centre**

At the Faculty of Management Science and Informatics was created **Information Centre**, which provides service for the study and acquiring of information. Centre is furnished with professional literature and with few efficient computers connected on the Internet.

Information Centre provides:

- counselling service for students in composition of Programmes of study
- coordination of students mobility and counselling service about possibility of study on the other universities abroad
- presentation and propagation of the Faculty in its various activities
- library service and coordination of editorial activity
- registration of in tray and out tray (letters, journals, package of books and parcels , ...)

### **Intranet of the Faculty**

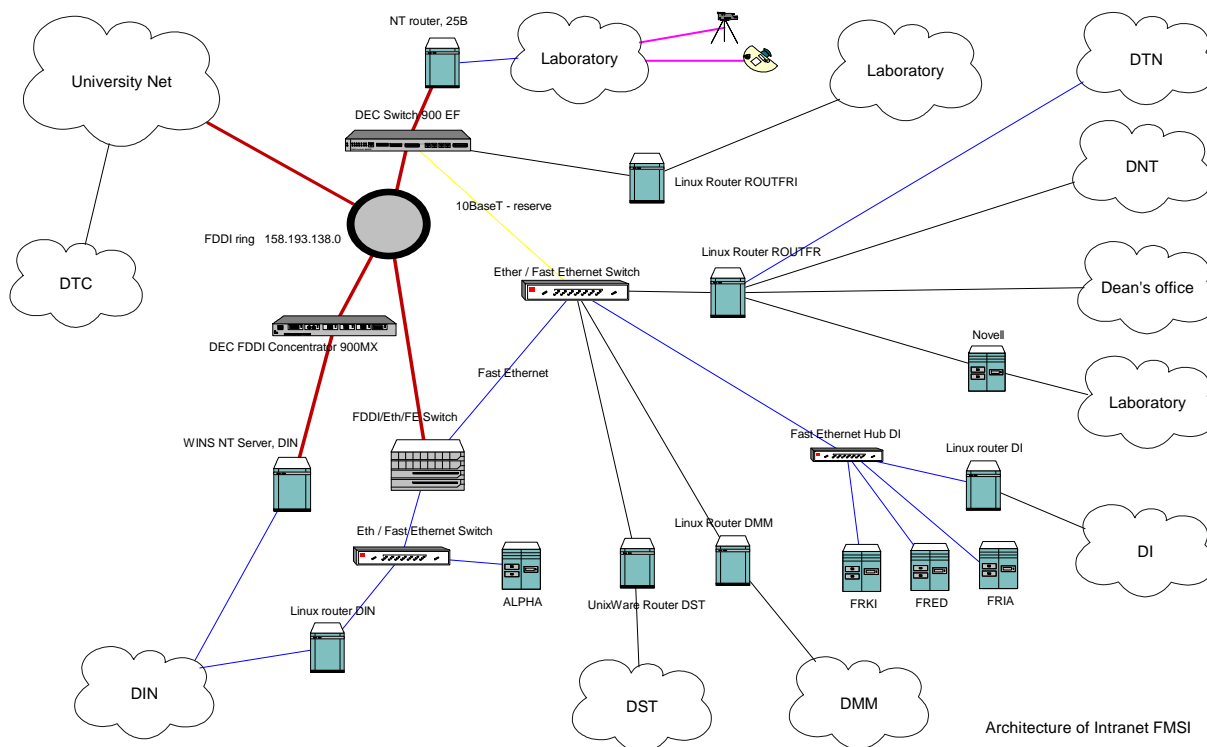
It was in 1992 when the Intranet of Faculty was created and in the meantime was continuously improving. It came into existence from the needs to process and to make accessible lot of information to students and to pedagogical staff, as well. The intranet of Faculty is a part of University Intranet, which allows access to SANET (Slovak Academic Network).

Conception of Intranet Faculty is based on the fact, that every Department is in possession of the own network, which is connected through ETERNET (10BaseT, 100BaseT or Gigabit Ethernet) to the faculty network. Apart from there are a special segments of this network - research laboratories for multimedia, parallel distributed systems, clusters, database systems, operating systems, e-business, e-learning etc.

There are following information systems at the Intranet of FMSI in service:

- **Information about study at the Faculty,**
- **News, messages,**
- **Events,**
- **Economics,**
- **Personal data, research data and information**
- **E-learning and distant learning subsystems,**
- **Study results and**
- **Assessments**

**Architecture of INTRANET:**

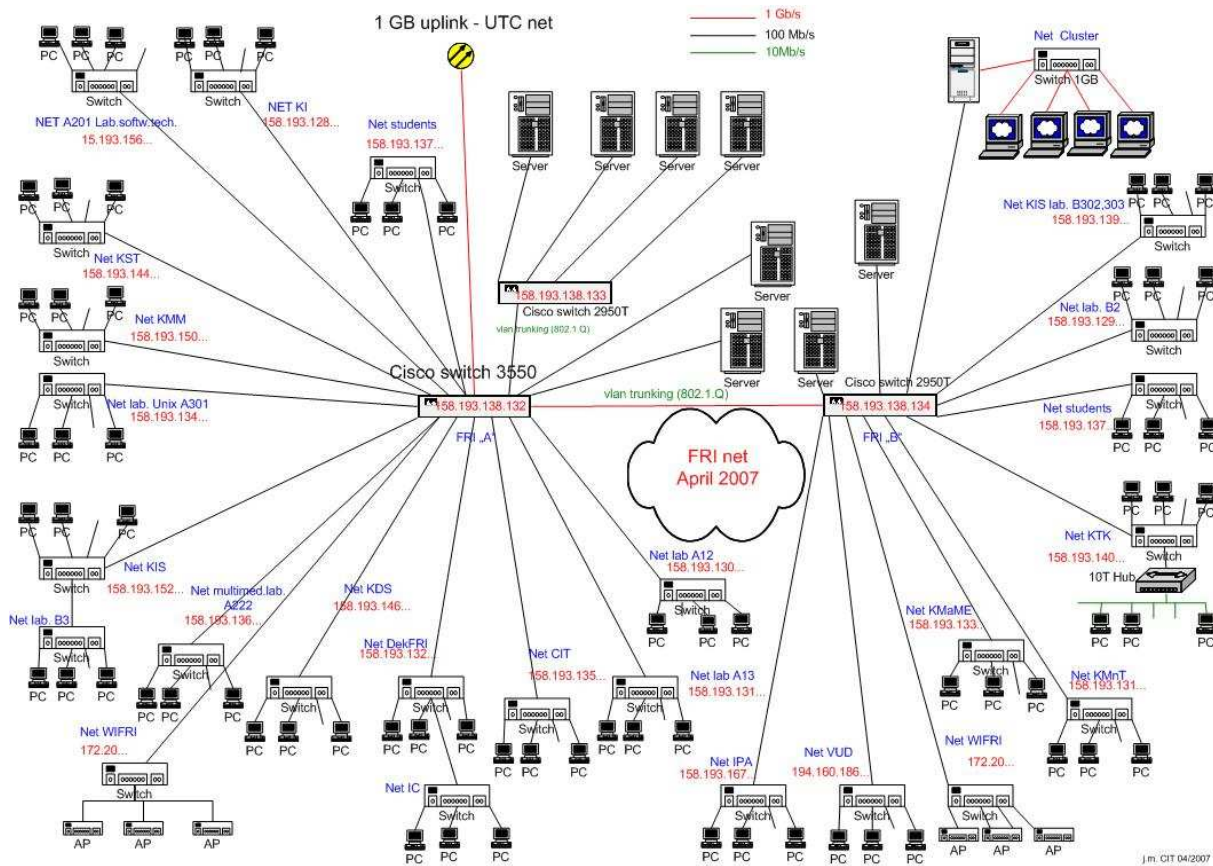


**Abbreviations of Departments:**

- |  |   |      |
|--|---|------|
| Department of Mathematical Methods           | - | DMM  |
| Department of Informatics                    | - | DI   |
| Department of Macro and Micro economy        | - | DMME |
| Department of Technical Cybernetics          | - | DTC  |
| Department of Info Communication NetArticles | - | DIN  |
| Department of Transportation NetArticles     | - | DTN  |
| Department of Management Theories            | - | DMT  |
| Department of Software Technologies          | - | DST  |



Schema of the Faculty Computers network and its connection to the University Network is on the following picture:



**Department of Mathematical Methods**

**Head of Department:** Assoc.Prof. RNDr. Stanislav Palúch, PhD.

Tel.: +421-41-513 4250  
e-mail: stanislav.paluch@fri.uniza.sk

**Teaching Staff:** RNDr. Rudolf Blaško, PhD.  
Mgr. Peter Czimmermann, PhD.  
Mgr. Lýdia Gábrišová, PhD.  
Mgr. Michal Kaukič, PhD.  
RNDr. Alžbeta Klaudinyová  
RNDr. Aleš Kozubík, PhD.  
Ing. Tomáš Majer  
Mgr. Eduard Omasta  
Assoc.Prof. RNDr. Stanislav Palúch, PhD.  
Assoc.Prof. RNDr. Štefan Peško, PhD.  
RNDr. Július Rebo, PhD.  
RNDr. Ida Stankovianska, PhD.

**PhD students** Ing. Tomáš Ladovský  
Ing. Michal Murín

**Administrative Department:** Bc. Ľubica Micháľková

Tel.:+421-41-513 4251

**PhD.-Programme**

Theme	Student	Supervisor
1. Optimum Route Problems in Large Transportation Networks	T. Majer	S. Palúch
2. Timetable Optimization in Position – Time Scheduling	M. Murín	Š. Peško
3. Uniform Scheduling in Case of Uncertainty	T. Ladovský	Š. Peško

## **EQUIPMENT**

Computer Laboratory of UNIX, Cryptography, Computer Security and Open Source Software Solutions.



## **COOPERATION**

### **V.1 Cooperation with Institutes and Enterprises in Slovakia**

1. Institute of Transportation Research Žilina
2. University of Economics, Bratislava
3. Technical University of Košice
4. Jesenius Faculty of Medicine, Comenius University, Martin
5. Faculty of Mathematics and Physics, Comenius University, Bratislava

### **Cooperation with Foreign Institutes and Enterprises**

1. University of Economics - Prague, CZ
2. University of Pardubice, CZ
3. University of Economics, Prague, CZ, Faculty of Management, Jindřichuv Hradec
4. Mykolas Romeris University, Vilnius, Lithuania, Faculty of Public Administration
5. Czestochowa University of Technology, PL, Faculty of Management

### Foreign Visitors to the Department

Prof. RNDr. Jan Černý, Dr.Sc., Dr.Hc., Faculty of Management, Jindřichuv Hradec, CZ  
Assoc. Prof. Ing. Anna Černá, PhD., Faculty of Management, Jindřichuv Hradec, CZ

### Membership in Slovak Organizations and Societies

- KAUKIČ, M.: Society for Open Source Information Technologies
- KAUKIČ, M.: Association of Slovak Mathematics and Physicists
- MAJER, T.: Slovak Society for Operation Research
- PEŠKO, Š.: Association of Slovak Mathematics and Physicists
- PEŠKO, Š.: Society for Open Source Information Technologies
- PEŠKO, Š.: Slovak Society for Operation Research
- PALÚCH, S.: Slovak Society for Operation Research
- PALÚCH, S.: Slovak Information Society
- REBO, J.: Association of Slovak Mathematics and Physicists
- REBO, J.: Slovak Society for Operation Research
- KOZUBÍK, A. : Slovak Society of Actuaries
- KOZUBÍK, A. : Slovak Statistic and Demographic Society

### BACHELORS THESIS

No.	Theme	Student	Supervisor
1.	Assignment of projects to students	L. Klimčíková	S. Palúch
2.	Optimum Edge Service in a Transportation Network	J. Hedvigy	S. Palúch
3.	Effectively Comparison of Shortest Path Algorithms in Huge Graphs	M. Bálint	S. Palúch
4.	Project Planning Problem	T. Antal	S. Palúch
5.	Software for communication with GPS module and GPS data visualization.	D. Ščensný	M. Kaukič
6.	Strategy Computer Game	J. Kňazko	M. Kaukič
7.	N-body problem - methods and Open-Source software.	M. Kvaššay	M. Kaukič
8.	Action RPG Game.	I. Bílek	M. Kaukič
9.	Discrete simulation using Python SimPy module.	M. Kompan	M. Kaukič
10.	Eigenvalues of local complements of strongly regular graphs.	M. Vereš	P. Czimmermann
11.	Colouring of certain classes of graphs with Nešetřil algorithm.	J. Kubačka	P. Czimmermann

## **OTHER ACTIVITIES**

### **Mr. Palúch S.:**

- Member of Scientific Board of Faculty of Management Science and Informatics
- Member of Scientific Board of Faculty of Management, Jindřichuv Hradec, University of Economics, Prague
- Member of Editorial Staff "Tatramountains" (Mathematical Journal)
- Member of Editorial Staff "Horizonty dopravy" ( Journal of Transportation)
- Member of Editorial Staff "Studies of the University of Žilina, Mathematical Series"

### **Mr. Blaško, R.:**

- Member of Editorial Staff "Studies of the University of Žilina, Mathematical Series"

### **Mr. Kaukič and Mr. Peško, R.:**

- Founder members of the Society for Open Source Information Technologies (Slovakia)

## Department of Informatics

**Head of Department:** Assoc. Prof. Ing. Penka Martincová, PhD.

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Fax: +421-41-513 40 55

e-mail: penka.martincova@fri.uniza.sk

**Administrative Department:** Anna Ilovská

### **Teaching Staff:**

RNDr. Miroslav Benedikovič  
Ing. Zuzana Bizoňová, PhD.  
Ing. Miroslav Faktor  
Ing. Matúš Chochlík, PhD.  
Ing. Karol Grondžák, PhD.  
Ing. Miroslav Iliáš, PhD.  
Ing. Josef Kopecký  
RNDr. Štefan Kovalík, PhD.  
Assoc. Prof. Ing. Vitaly Levašenko, PhD.  
Prof. Ing. Karol Matiaško, PhD.  
Ing. Iveta Nedeljaková, PhD  
Ing. Monika Václavková  
RNDr. Peter Varša, PhD.  
Assoc. Prof. Ing. Michal Záborský, PhD.  
Ing. Ján Boháčik, PhD.

**Researchers:** Assoc. Prof. Ing. Elena Zaitseva, PhD.

### **Doctoral full-time students:**

Ing. Eva Valentíková  
Ing. Jan Janech  
Ing. Tomáš Bača  
Ing. Anton Lieskovský  
Ing. Michal Ulbricht  
Ing. Marek Šajna  
Ing. Ľuboš Takáč  
Ing. Miroslav Rusín

### **Doctoral part-time students:**

Ing. Stanislav Piecka  
Ing. Monika Vajsová  
Ing. Marek Tavač

## **EQUIPMENT**

### **Laboratories:**

<b>Server</b>	<b>Purpose</b>
<b>frdb1</b>	Linux – teaching
<b>frdb2</b>	Linux – databases, teaching
<b>fra208d</b>	Linux - databases, teaching
<b>frios</b>	Linux – operating systems, teaching
<b>fra203a</b>	WIN2000 server
<b>e-learning</b>	Linux – e-learning applications
<b>elearn</b>	Linux – e-learning applications



ERROR: ioerror  
OFFENDING COMMAND: image

STACK: