



Faculty of Science



Annual report 2011



UNIVERSITATEA "AL.I. CUZA BUCURESTI" - UNIVERSITATEA

Košice is the seat of culture and education. It belongs to students. You will find them at every step, in the theatre, museum, gallery, Philharmonic, library or park. You can meet them in students' homes, sports fields, swimming pools, but also on the terrace restaurants. Students give a soul to everything around us.

More than 240 000 inhabitants of Košice annually during summer and winter semesters grows by thousands of future professionals in medical, scientific, legal, philosophical disciplines, experts in public administration. Thanks to the students, the University buildings wake to life. Many of them rank among the architectural jewels of the city centre. Košice is just the right place for the development of spirit and intellect.



WISDOM OF THE PAST - KNOWLEDGE OF THE PRESENT - EDUCATION OF THE FUTURE



Dean:

Doc. RNDr. Gabriel Semanišín, PhD.

Term of office: 01/07/2011 – 30/06/2015

Faculty of Science of P. J. Šafárik University in Košice was founded in 1963 and since then educated more than 5 000 graduates in all branches of Natural Science, Mathematics and Informatics. In the year 2011, the Faculty operated 37 undergraduate, 43 graduate and 17 doctoral study programmes in Biology, Ecology, Chemistry, Geography, Informatics, Mathematics and Physics. Introducing the credit-based educational system and highest quality standards, the Faculty produces very well prepared graduates for the Slovak and European labour market. Excepting educational activities, the teachers and researchers of the Faculty also developed original research work in many principal subjects. It is remarkable, that an independent academic ranking agency ARRA evaluated our Faculty in the last year as the absolutely best research institution among all 109 faculties in Slovakia.

Faculty of Science of P. J. Šafárik University in Košice was also successful in developing international educational activities, particularly, within the Lifelong Learning Programme/Erasmus. The development of international research collaborations continued preferably on the basis of bilateral research agreements between the Faculty and foreign partners. Finally, one should mention that the Faculty was also very successful in building new advanced research laboratories that were mainly financed from European Structural Funds.



EDUCATION



The Faculty of Science belongs for many years to top educational institutions in Slovakia in the fields of Natural Sciences, Informatics and Mathematics. In order to reach the highest educational standards and compatibility with international universities, the Faculty pioneered implementation of credit-based system of study in Slovakia.

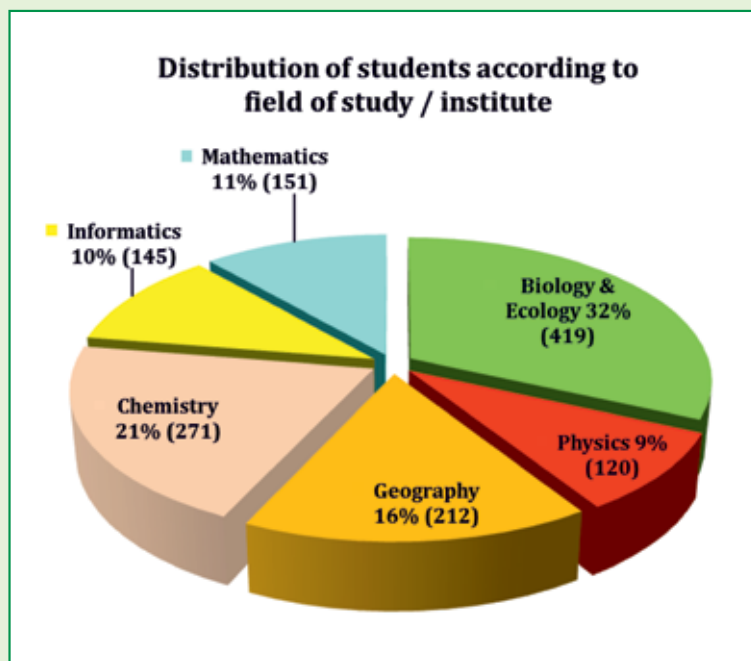
To ensure a perfect training in all study programmes, the teachers of Faculty strictly and continuously apply high-quality standards during whole period of study. Consequently, graduates from the Faculty of Science are very well prepared to enter both Slovak and European labour market.

Accredited study programmes in Biology, Geography, Chemistry, Physics, Informatics and Mathematics offered at the Faculty of Science in 2011:

- 37 undergraduate study programmes (bachelor degree)
- 43 graduate study programmes (magister degree)
- 17 doctoral study programmes (PhD. degree)

Total number of full-time students enrolled in 2011: 1318

- 752 undergraduate students
- 397 graduate students
- 169 doctoral student



SCIENCE AND RESEARCH

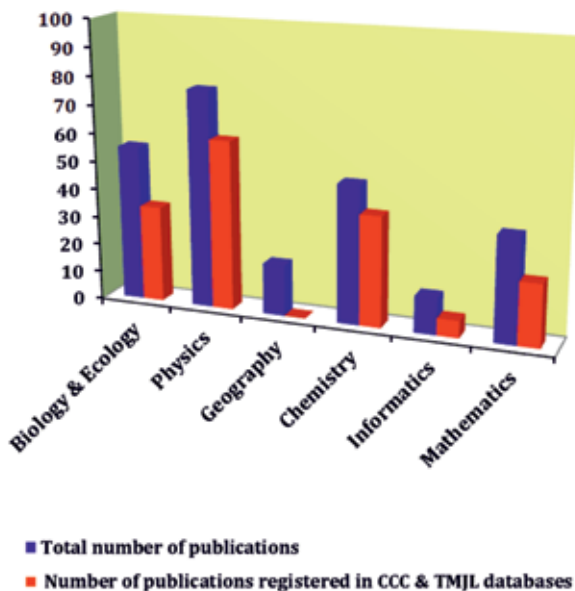
In 2011, the Faculty of Science continued to conduct a high-quality and competitive research in diverse areas of Biology, Geography, Chemistry, Physics, Informatics and Mathematics. Faculty reconfirmed its firm position among leading research institution in Slovakia. It is remarkable that according to an independent ranking of the ARRA agency, the Faculty of Science gained the winning position among all 109 faculties in Slovakia. This excellent result represents an independent confirmation of the scientific quality of the Faculty of Science.

The research results obtained in the year 2011 were mainly published in internationally recognized scientific journals listed in the Current Contents Connect database and Thomson Master Journal List database.

The principal quantitative research indicators of the Faculty of Science to be noticed:

- The total of 242 publications (1,29 publications per one creative employee)
- 157 publications in CCC and TMJL databases (0,9 publications per one creative employee)
- 1820 citations registered in Science Citation Index (10,4 citations per one creative employee)

Distribution of publications in 2011 according to institutes / fields of study

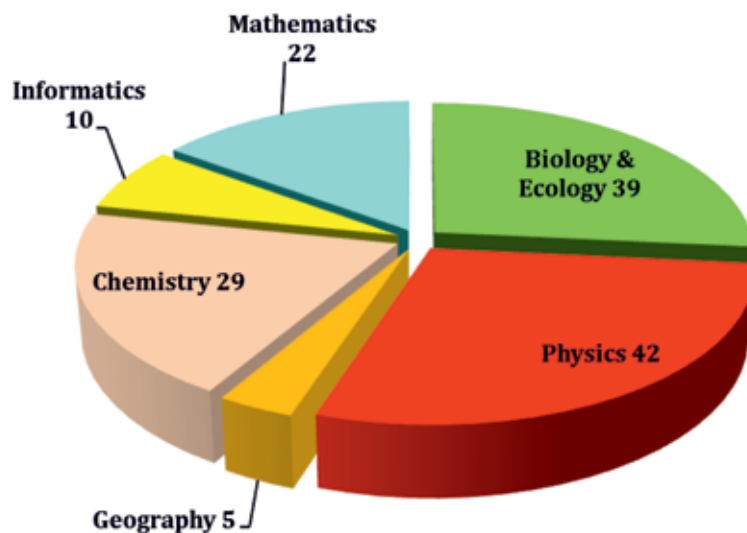


The research at Faculty of Science exhibits interdisciplinary features and it is usually performed in collaboration with foreign universities and research institutions. In 2011 the active research collaboration was performed with 21 foreign countries.

The absolute majority of funding for principal research activities was obtained from national and international grant sources.

In 2011 the Faculty of Science gained 4 international research projects and 147 national research projects with the total funding exceeding 1 129 000 €. The Faculty was also successful in applications within the calls of the European Structural Funds resulting to the financial support of 1 853 383 in 2011.

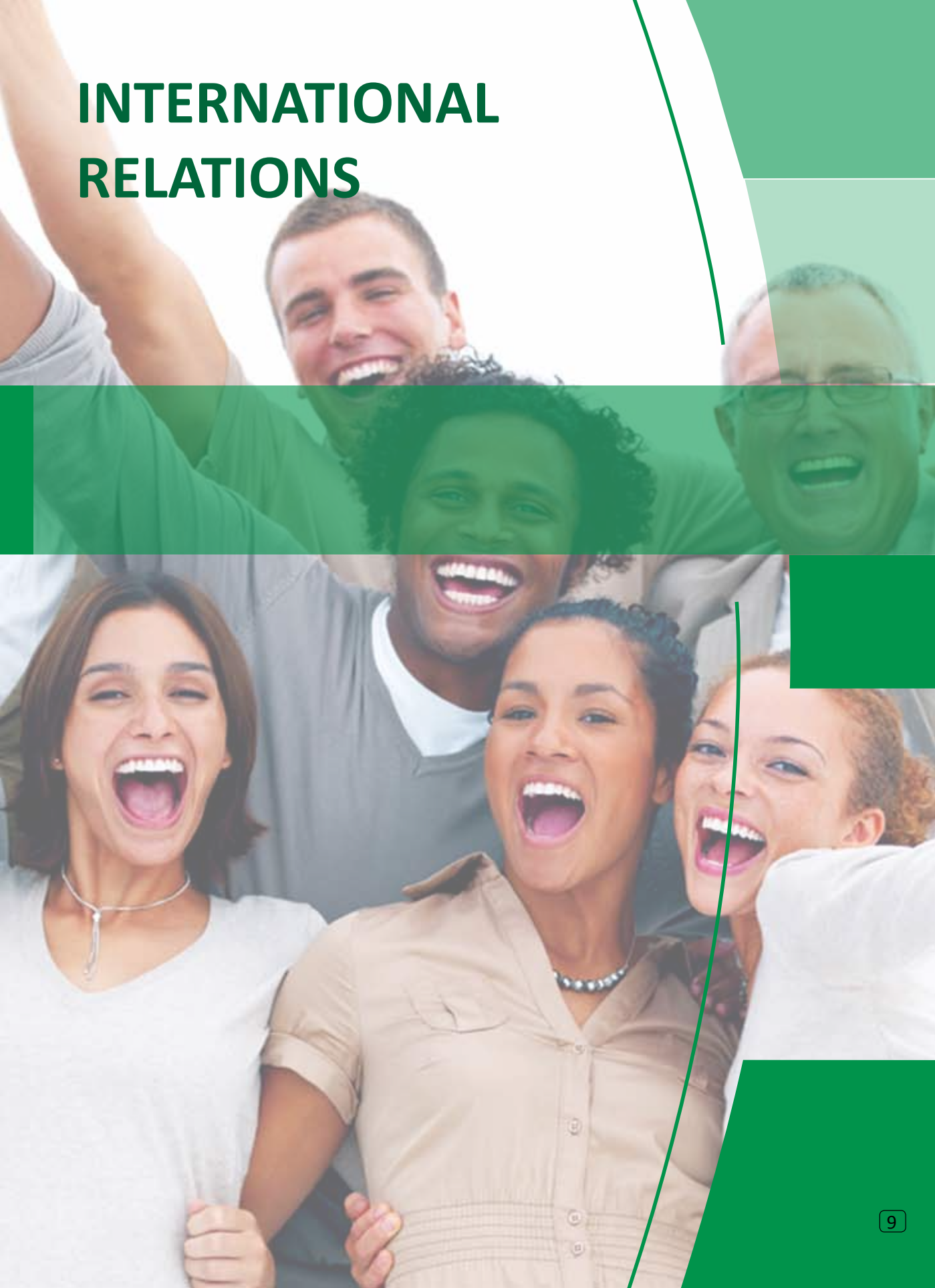
Total number of projects in 2011



Faculty of Science systematically supports young people, particularly high schools students in developing their interests and skills within principal research fields in natural sciences, mathematics and computer science. In the year 2011, the support of the Faculty concentrated on:

- Organization of Olympiads and other forms of competition in Biology, Physics, Geography, Chemistry, Informatics and Mathematics for grammar school scholars.
- Financial support of students' participation at domestic and international Students Research Conferences.
- Organization of the research conference "Week of Doctoral Studies" in Nový Smokovec, Slovakia - for doctoral students of the Faculty.
- Support of young researchers of the Faculty within the internal grant system by total amount of 10 200 €.

INTERNATIONAL RELATIONS



International relations are traditionally developed in conjunction with educational and research activities at the Faculty and their development is one of the main priority.

In the year 2011, the employees carried out 260 and students of the Faculty of Science 164 research and educational stays in 32 foreign countries.

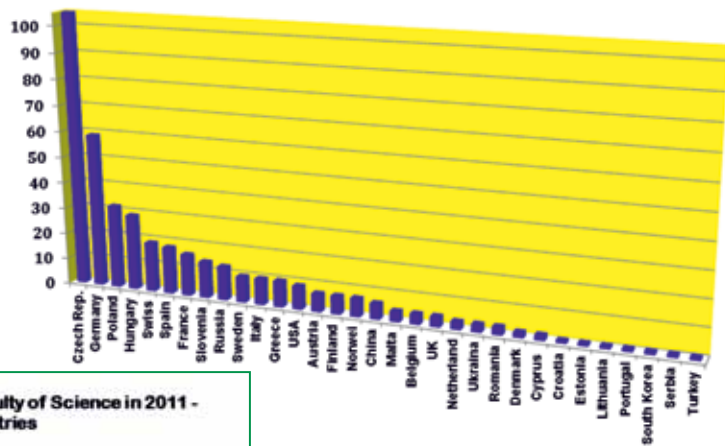
On the other hand, 71 foreign teachers and researchers from 18 different countries visited our Faculty in 2011.

The most popular foreign destinations both for the staff and students were Czech Republic, Germany, Poland and Hungary.

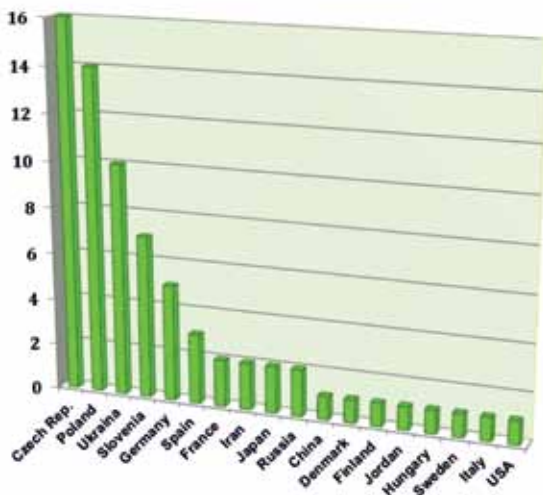
Within international activities in 2011, especially valuable were participations of the Faculty in collaborations with large international research centres:

- DESY - Hamburg, Germany
- XFEL - Hamburg, Germany
- JINR - Dubna, Russia
- LHC - Geneva, Swiss

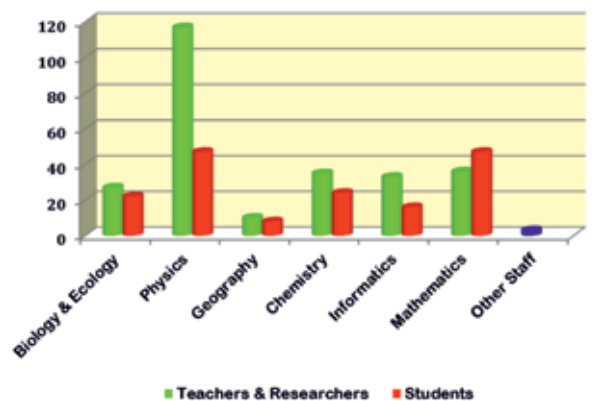
Distribution of international stays/trips of employees and students of the Faculty of Science in 2011 - according to countries



Number of foreign visitors at the Faculty of Science in 2011 - according to countries



International stays/trips of employees and students of the Faculty in 2011 - according to fields of study





LIFELONG LEARNING PROGRAMME/ERASMUS

The Lifelong Learning Programme/Erasmus represents the most important international educational mobility programme between the Faculty and its international partners. In the year 2011 students and employees of the Faculty of Science actively participated in Erasmus mobility:

- 20 students and 15 teachers of the Faculty developed their educational activities at universities in 12 foreign countries.
- At the same time 16 foreign students and 8 teachers visited the Faculty within the programme.

SELECTION OF VENTURES ORGANIZED BY THE FACULTY OF SCIENCE IN 2011 AT INTERNATIONAL LEVEL

- 3. Meeting of the European Committee for Future Accelerators (ECFA)
- 7th - International conference SSB 2011- Structure and Stability of Biomacromolecules
- ITAT 2011 – Workshop of Information Technologies Application and Theory
- 20th Workshop Cycles and Colourings 2011



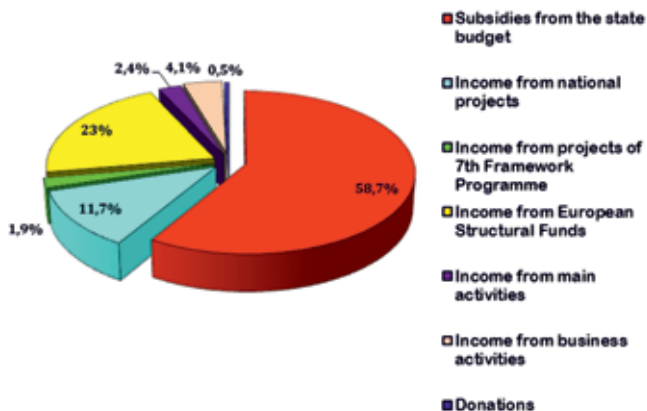


ECONOMIC MANAGEMENT AND DEVELOPMENT

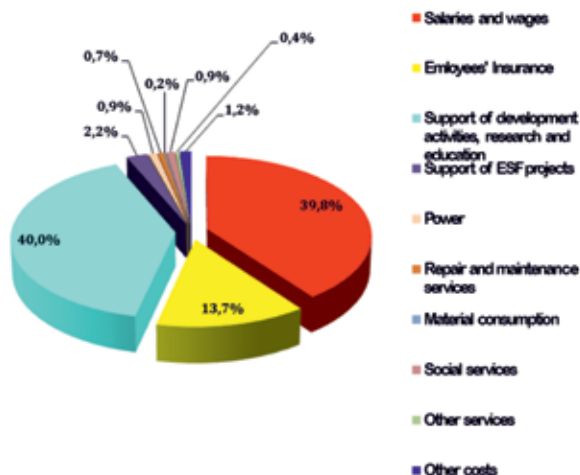
The main sources of funding Faculty of Science in 2011 were:

- Subsidies from the state budget 5 234 830 €
- Income from national projects 1 041 420 €
- Income from projects of 7th Framework Programme 170 296 €
- Income from European Structural Funds 1 853 383 €
- Income from main activities 212 164 €
- Income from business activities 376 455 €
- Donations 43 523 €

Incomes of the Faculty of Science in 2011



Costs of the Faculty of Science in 2011



Total amount of money used in 2011 to improve educational and research infrastructure of the Faculty exceeded 3 598 000 €.

The principal investment of the Faculty into innovation of study programmes and educational infrastructure in the year 2011 mainly originated from ESF projects entitled „DOKTORAND“ and „MODERN AND INTERACTIVE EDUCATION AT UPJS“. Similarly, the investments into development of research were in 2011 also accommodated from ESF projects, with the aim to build excellent research centres and outstanding laboratories.

In 2011 the Faculty of Science maintained the following centres:

1. Centre for advanced physical studies of materials under extreme conditions.
2. Centre of excellence for Informatics and knowledge-based systems.
3. Network of excellent laboratories for oncology.
4. Centre of excellence for progressive materials with nano and submicron structure.
5. Centre of cosmic research: effects of cosmic weather.

Within the centres the Faculty operates several outstanding laboratories:

- Laboratory of analytical cytometry
- Nuclear magnetic resonance laboratory
- Nano-laboratory
- Laboratory of low-temperature physics
- Laboratory of ferromagnetism
- Laboratory of electron microscopy
- Laboratory of Fluorescence Spectroscopy and Microscopy
- Laboratory of Chemical Technologies
- Laboratory of Cell Physiology
- Laboratory of Molecular Biology
- Laboratory of Cell Biology
- Laboratory of Biological Thermodynamics and Bioenergetics
- Laboratory of Laser Spectroscopy
- Laboratory of intelligent data analyses

In the year 2011 the Faculty of Science was successful in developing original computational software and technologies:

- Continued the development of Academic Information System which is implemented at 15 universities in Slovakia.
- In collaboration with Californian Institute of Technology the Faculty continued development of EVO System (Enabling Virtual Organization System).

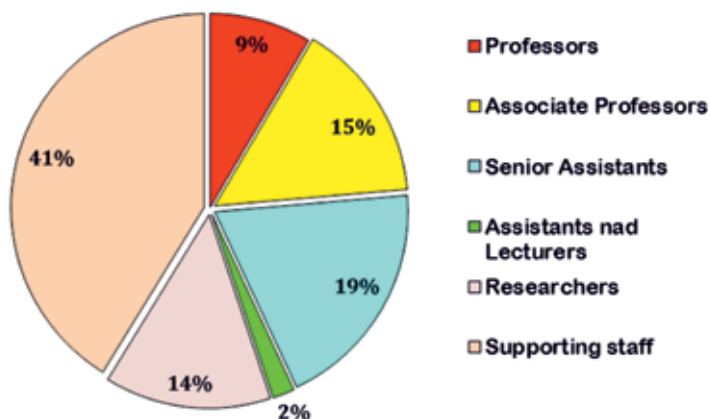
HUMAN RESOURCES





In the year 2011, the Faculty of Science employed 327 employees - among them 194 creative employees (teachers and researchers). Comparing to the year 2010 the number of employees decreased by 14. The Faculty actively supported qualification progress of teachers and researchers and made for all employees available computer facilities and information resources to enable their work highly efficient. Employees of the Faculty have had opportunity to participate in trainings and courses aimed to improve their professional competences and capabilities. The teachers and researchers of the Faculty were directly supported in developing their educational and research activities, including international mobility – total amount of financial support in 2011 exceeded 10 000 €.

Structure of employees of the Faculty in 2011





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