This project is co-funded by the EEA Grants and the state budget of the Slovak Republic from the EEA Scholarship Program Slovakia.

Improving Quality of Higher Education Based on Development of Multilateral Institutional Cooperation

Short-term mobility of CPU Nitra teachers to University of Bergen, Norway
September 14 – 15, 2015 (travel days 13 & 16 September)

assoc. prof. Sona Ceretkova, Department of Mathematics, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Slovakia
associated professor in mathematics education, experienced national and international project leader, co-guarantor of PhD study program Theory of Mathematics Education, math textbooks co-author

Title of the lecture: **International projects in mathematics education – experience and perspectives**
Introduction and description the ideas, activities and materials of projects LLP Comenius DynaMAT (Dynamical and creative Mathematics using ICT; www.dynamathmat.eu), project MaT²SMc (Materials for Teaching Together: Science and Mathematics Teachers collaborating for better results; www.mat2smc-project.eu) and project FP7 PRIMAS (Promoting inquiry in mathematics and science education across Europe; www.primas-project.eu).

Dr. Boris Lacsny, Department of Physics, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Slovakia
PhD graduated lecturer and researcher of physics education, experienced physics teacher

Title of the lecture 1: **Loedel diagrams in Special theory of relativity**
Introduction to the special theory of relativity by a little-known geometric interpretation Loedel's diagrams. We derive the basic relations of relativity and look at the paradoxes in the STR by using the basic knowledge of geometry and trigonometric functions. The tool is very useful for secondary schools for its clearness and simplicity and is very popular among future physics teachers.

Title of the lecture2: **Microscopic Model of Knowledge Increase**
Learning process can be also interpreted is an activation of long-term and short-term memory. There are numerous approaches that describe this process (Bao, 2006; Meltzer, 2002); our model describes the growth of knowledge level achievable in a group of students by repetition of an activity (expressing success in percentage as a function of the number of repetitions). This model is based on describing the probability of neural connections activation in brain during the process of learning. As evidence from tests conducted on students shows, the model proves to be a powerful tool in assessing the quality of educational courses, and is also useful for comparing the dynamics of learning through various instructional methods.

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Improving Quality of Higher Education Based on Development of Multilateral Institutional Cooperation

Short-term mobility of CPU Nitra teacher and PhD student to University of Bergen
September 14 – 18, 2015 (travel days 13 & 19 September)

prof. Anna Tirpakova, Department of Mathematics, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Slovakia
professor, expert in applied statistics and algebra; co-guarantor of PhD study program Theory of Mathematics Education

Title of the lecture: **Clearness and illustration in mathematical statistics education and statistical evaluation of research results**
The presentation is concerned with one of the didactic principles – clearness and illustration, more specifically, clearness in mathematical statistics education for non-mathematical departments through sample uses of statistical methods in research practice. Selected examples will be mainly focused on applications of statistical methods in pedagogical and archaeological research.

Mgr. Zuzana Nasticka, Department of Mathematics, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Slovakia
PhD student in Theory of Mathematics Education; Mathematics and English language teacher graduate

Title of the lecture: **Bilingual education in Slovakia with regard to mathematics education**
Nowadays, parents in Slovakia tend to prefer enrolling their children at schools which provide bilingual education, i. e. education in two languages – Slovak and a foreign language. This fact has brought up several important questions. Are the two instructional languages taught with equal significance? Are the other school subjects given enough importance, too? How can be the neglect of mathematics education avoided in terms of bilingual education? The latter question is the main concern of our contribution.