DEVELOPMENT OF THE MASTER PROGRAM ON APPLIED COMPUTER DATA ANALYSIS WITHIN THE TEMPUS PROJECT "APPLIED COMPUTING IN ENGINEERING AND SCIENCE"

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Abstract

Development of the new master program on Applied Computer Data Analysis within the TEMPUS Project "Applied Computer Data Analysis" is discussed. The program has been started in 2015 at the Belarusian State University.

Keywords: master program, TEMPUS, ACES project, computer data analysis, statistical modeling

The successfull research co-operation in the area of Statistical Data Analysis between scientists from the Vienna University of Technology (TU Wien) and Belarusian State University (BSU) was the base for the TEMPUS project "Applied Computing in Engineering and Science" (ACES) that has gathered in one team the experts in 5 areas benefiting from each other:

- Scientific Computing;

- Mathematical Modeling;

- Numerical Analysis and Optimization;

- Statistical Modeling;

- Statistical Computing.

The main goal of the ACES Project [1] is starting of a new master program in the area of Applied Computing at three Universities from Belarus (BSU, Belarusian National Technical University, Yanka Kupala State University in Grodno) and two Universities from Russian Federation (Siberian Federal University in Krasnoyarsk, Tomsk Polytechnic University) under the methodical support from five EU Universities: TU Wien (Austria), KU Leuven (Belgium), University of Wuppertal (Germany), Technical University of Lisbon (Portugal), and Palacky University in Olomouc (Czech Republic). In Belarus the mentioned Universities will run the master program "Applied Computer Data Analysis" in accordance with the Educational Standard approved in 2015 by the Ministry of Education of the Republic of Belarus.

The BSU has started the master program in 2015 with students who have successfully completed the 5-years programs with the diploma of a specialist. In June of 2016 the nine graduates from the master program were acknowledged with the Master of Science diploma in applied mathematics and infromation technologies. The two other Belarusian Universities plan to start the master program in 2016.

Two major activities were performed in the Project to reach the goal:

- Training at the EU partner Universities of the staff from the eastern partner Universites to get the optimal structure and contents of the curriculum;

- Preparing of the teaching materials books for students in 5 areas mentioned above to provide students with the information agreed by the consortium of partner Universities as the obligatory knowledge.

Some of the teaching materials books cover more than just the obligatory topics as, for expamle, the teaching materials on Statistical Modeling. The main parts of the contents are: Introduction; Basics of Multivariate Statistical Analysis; Principal Component Analysis; Factor Analysis; Regression Analysis; Discriminant Analysis; Advanced Methods for Classification; Cluster Analysis; Advanced Methods for Statistical Inference; Conclusions; References. The mentioned book is strongly related to the teaching materials on Statistical Computing.

At the moment we can mention the fact that the International Conference on Computer Data Analysis and Modeling in Minsk granted a lot into the research co-operation between TU Wien and BSU, and later into the ACES Project, is now benefiting from contributions of the developed master program graduates.

References

[1] http://www.ai.tuwien.ac.at/aces