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**TEMPUS PROJECT “SEE DOCTORAL STUDIES IN
MATHEMATICAL SCIENCES”
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With 2010, we have entered the moment of passage from Bologna Process to the European Higher Education Area as envisaged by the initiators of Bologna Declaration and later complemented by the plan of establishing also European Research Area.

The main goals of our project, funded by European Commission under the TEMPUS IV first call, are the development of a model of structured doctoral studies in Mathematical Sciences involving the network of Western Balkans Universities, the establishment of doctoral curricula design in the areas of Pure Mathematics, Applied Mathematics and Theoretical Computer Science and the first phase of its implementation. The supporting activities include building a strategy to train the next generation of mathematics professors at Western Balkans Universities for the research-based education and student-centered learning; the strengthening of master programs from the standpoint of learning outcomes and labor market/link to the third cycle dichotomy – pilot cases in Mathematical modeling and Financial mathematics; the improvement of IT and library facilities; effective and efficient management of the JP, dissemination of the approach to ensure sustainability of objectives after completion of the project, and raised quality assurance procedures.

The Western Balkan countries represented in this project, Albania, Bosnia and Herzegovina, FYR Macedonia, Serbia and Montenegro officially joined the Bologna process in 2003. The partner universities from Western Balkan countries in the project are: Universities of Sarajevo, Banja Luka and Tuzla, University of Belgrade, University of Montenegro, Ss. Cyril and Methodius University of Skopje and University Luigj Gurakuqi of Shkodra, and the EU partners are Karl Franzens University of Graz, the Faculty of Mathematics and Informatics of Sofia University, the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences and the Mathematical Society of Southeastern Europe MASSEE.

The focal point is the development of structured doctoral studies as the third Bologna cycle of higher education through networking partner universities in a way that overcomes fragmentation and foster the reciprocal development of human resources.

The development of the project will be during three years and through three phases. During the first phase, labeled as Doctoral Program structure and Core Knowledge (the initializing curricula development phase), a scholarly representative Academic Board of

10 experts was formed in Graz, June 22–29, 2009, embracing task forces for pure mathematics, applied mathematics and theoretical computer science. Among the activities during the first year were the Workshop in Graz “Training in Use of IT in Mathematical Modeling” September 7–11, 2009 and Young Researchers Workshop in Ohrid, September 16–20, 2009 (as a part of MICOM International Congress on Mathematics).

Academic Board finalized the recommendations on the core knowledges in pure mathematics, applied mathematics and theoretical computer science at its meeting in Sofia, September, 22–24, 2009. The above recommendations were discussed at the Workshop on PhD Core Subjects and Quality Assurance in Tuzla, November, 04-08, 2009. There was decided which parts of the core knowledges are to be covered by six quality standard setting courses to be held during the SEE Doctoral Year in Mathematical Sciences 2011 (3rd project year).

During the second phase, entitled Curricula Design and Capacity Building, the syllabi for the six core courses will be finalized by the Academic Board by mid March 2010. A characteristic feature of the whole Year 2 will be the impact on systematic development of human resources. The Workshop on harmonized PhD program, to be held in Belgrade in June 2010, will mark the whole process of activities on institutional approval. The agreed model of SEE Doctoral Studies in Mathematical Sciences and the PhD curricula will be approved at all WB partner institutions by the end of October – mid of November 2010. Three events will provide examples of good practice related to the link between master and doctoral education. Intensive course and lab in Mathematical modelling will take place in Shkodra in July, followed by an Intensive course in Financial mathematics in August at the University of Banja Luka. The summer school and the workshop on Mathematical Modeling of Cancer Growth and Treatment form Event 4 in FP7 Marie Curie Training Series BioMedMath centrally organized by our consortium member – Institute for Mathematics and Scientific Computing, University of Graz.

The third project year, SEE Doctoral Year in Mathematical Sciences 2011, will be an important part of 2011: Year of Mathematics in South-Eastern Europe, proclaimed by MASSEE. There will be six joint, intensive four-week courses, designed on recommendations of the Academic Board that have been based on the analysis of the state of the art in mathematical research in South-Eastern Europe. Universities of Sarajevo, Belgrade, Tuzla, Podgorica, Skopje, and Sofia will host the doctoral ground level courses in Number Theory, Dynamical Systems, Probability and Statistics, Optimization, Data Structures and High Performance Computing, Computability and Complexity. These courses are thought to provide a firm starting core knowledge background for PhD students aiming at doctoral research in a discipline/subdiscipline falling within global areas of pure and applied mathematics and theoretical computer science.

At the Final Review meeting in December 2011 in Sarajevo, the Consortium Committee will analyze overall results of the project and the course of post TEMPUS funding actions recommended by the Sustainability plan.

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