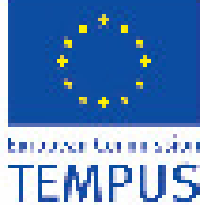


CONDITIONS AND STANDARDS FOR DEVELOPING AND DELIVERING DOCTORAL PROGRAMS



UNITIC Business Center, Sarajevo, May 24, 2011



From Bologna to EHEA – ERA

SEE DOCTORAL STUDIES IN MATHEMATICAL SCIENCES

*Harmonized, high quality, internationally oriented and networked doctoral programmes
in mathematical sciences in South-Eastern Europe*

Pure Mathematics/Applied Mathematics/Theoretical Computer Science

University of Sarajevo, University of Graz, Sofia University
Institute of Mathematics and Informatics/Bulgarian Academy of Sciences
Mathematical Society of South-Eastern Europe, University of Belgrade
University of Skopje, University of Montenegro, University of Tuzla
University of Banjaluka, University of Shkoder

Project Years 2009-2010

Workshop on PhD Structure
IT in Mathematical Modelling
SEE Young Researchers Workshop
Scientific & Labour Market Oriented Goals
Workshop on Core Subjects and QA
Course & Lab in Mathematical Modelling
Course in Financial Mathematics
Marie Curie BioMedMath Network Synergy

SEE Doctoral Year in Mathematical Sciences 2011

Number Theory
Dynamical Systems
Probability and Statistics
Optimization
Data Structures and High Performance Computing
Computability and Complexity



Contact: www.see-dsmath.eu or e-mail the grant holder, Prof. Dr. dr.h.c. Muharem Avdispahić, mavdispa@pmf.unsa.ba

Faculty of Science 1995





EUROPEAN
COMMISSION

BOSNIA AND HERZEGOVINA

TEMPUS OFFICE



HOME

BIH TEMPUS Office

Ferhadija 37/1

71000 Sarajevo

Bosna and Herzegovina

Phone/fax:

+38733570260/+38733570262

tempus@bih.net.ba

JEP 12440-97

Coordinator:

Prof. Dr. Muharem Avdispahic
University of Sarajevo
Faculty of Science
Zmaja od Bosne 33-35
BiH-71000 Sarajevo
Bosnia & Herzegovina
++387 33 649 342
++387 33 649 342
mavdispa@utic.net.ba

Contractor

Tony Mercer
Kingston University
Development Director
Riover house 53-57 High Street
UK-Kinston KT1 ILQ
United Kingdom
++44/181/5477010
++44/181/5477009

Partners:

BIH University of Tuzla, Faculty of Chemical Engineering, Prof. Dr. Marija Kovcalija

BIH WUS - Austria, Sarajevo Office, Gerald Knaus, . M.A.

I Università Degli Studi di Padova, Department of Physics and Pure and Applied Mathematics, Prof. Giancarlo Benettin

UK Kingston University, Faculty of Science, Prof. Reg Davis

BIH University of Tuzla, Medical Faculty, Dep. of Chemistry, Prof. Dr. Munira Mazalovic

DK Kobenhavns Universitet, Faculty of Science, Prof. Sven Milthers

BIH University of Sarajevo, Faculty of Agriculture, Prof. Dr. Esmā Velagic Habul

BIH University of Sarajevo, Faculty of Pharmacy, Prof. Dr. Kemo Sinanovic

BIH University "Dzemal Bijedic" Mostar, Pedagogical Acad., Prof. Djulsa Bajramovic

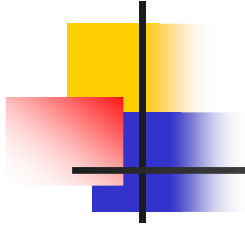
A Karl Franzens Universitat Graz, Faculty of Natural Scien., Prof. Dr. Franz Kappel

BIH University of Mostar West, Pedagogical Academy, Prof. Ivica Bosnjak

University of Sarajevo top graduates

2006, 2007, 2008, 2009, 2010





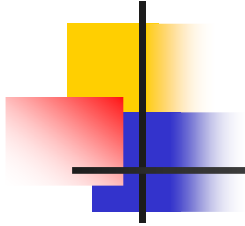
”If you were to work out what mathematical research has cost the world in the last 100 years, and then work out what the world has gained, in crude economic terms, then you would discover that the world has received an extraordinary return on a very small investment.”

Timothy Gowers, Fields medalist 1998



Project objectives

- doctoral studies in mathematical sciences in South-East Europe up to the EHEA-ERA standards
- harmonized, high quality, internationally oriented and networked programme/s
- critical mass achieved both on PhD candidates' and advisors' side
- doctoral candidates given the opportunity to work in research teams and different research environments



Year One:

DOCTORAL PROGRAM STRUCTURE AND CORE KNOWLEDGES

Year Two:

CURRICULA DESIGN AND CAPACITY BUILDING

Year Three:

SEE DOCTORAL YEAR IN MATHEMATICAL SCIENCES 2011



SEE Doctoral Year in Mathematical Sciences 2011

- Number Theory (Sarajevo, Jan 31 - Feb 25)
- Probability and Statistics (Podgorica, April 4 - 29)
- Dynamical Systems (Tuzla, May 9 – June 3)
- Optimization (Belgrade, Aug 29 – Sept 23)
- Algebraic Combinatorics, Computability and Complexity (Sofia, Oct 3 - 29)
- Data Structures and High Performance Computing (Skopje, Nov 7 – Dec 2)

<http://massee.org/>



Goals

- establishing transparency of expectations and setting quality and assessment standards to be followed
- in principle, every PhD student at WB partner institutions who starts his/her studies this year is expected to take one of these courses



Syllabi

- Course goals
- Prerequisites
- 3 course modules (20 units each)
- Literature
- Grading (homework, project, final exam)
- 20 WB + 4 EU PhD students per course
- 3 lecturers (EU & WB) per course



Study visits

- a) assessment of existing practice in obtaining PhD degree in mathematical sciences at partner universities
- b) comparison with Bologna doctoral programmes at EU universities
- c) identifying the areas of expertise in mathematical sciences at partner universities from EHEA-ERA perspective
- d) capacity building



Workshop on PhD structure

Graz, June 22 – 26, 2009

- duration of doctoral programme
- proportion between taught courses and research
- supervision modalities
- embedding in institutional strategies and policies
- dissemination and sustainability perspective
- establishment of the Academic Board

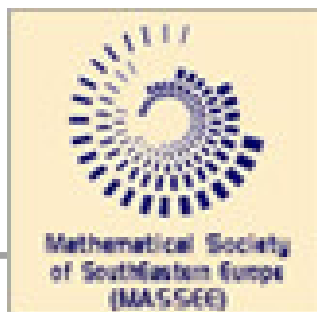


Academic Board Members

- Franz Kappel (Graz), Chair
- Muharem Avdispahić (Sarajevo)
- Dončo Dimovski (Skopje)
- Stefan Dodunekov (IMI-BAS)
- Gundolf Haase (Graz)
- Emil Horozov (Sofia)
- Petar Kenderov (IMI-BAS)
- Dragan Marušić (Koper)
- Miodrag Mateljević (Belgrade)
- Dušan Tošić (Belgrade)



European Commission
TEMPUS



Mathematical Society
of Southeastern Europe
(MASSEE)



MASSEE
International Congress on Mathematics
MICOM 2009

SEE Young Researchers Workshop
TEMPUS JP SEE DOCTORAL STUDIES IN
MATHEMATICAL SCIENCES

September 16-20, 2009
Ohrid, FYR Macedonia



Strengthening master programmes

- Workshop on scientific and labor market oriented goals, Mathematical modelling and financial mathematics, Budva, October 21-24, 2009
- Intensive course and lab in mathematical modelling, Shkodra, July 3 – 31, 2010
- Intensive course in Financial mathematics, Banja Luka, Aug. 7- Sept. 4, 2010
- ECTS apply to both intensive courses



Academic Board Activities

- AB Meeting on Core Knowledges and Evaluation of SEE Young Researchers Workshop, Sofia, September 21-24, 2009
- AB Meeting on Monitoring and Core Subjects Syllabi, Sarajevo, March 11-14, 2010
- Final AB Meeting, Skopje, November 2011



Workshop on PhD Core Subjects and QA, Tuzla, November 4–8, 2009

- wide discussion of AB Recommendations
- Consortium member departments asked to prepare PhD curricula proposals that incorporate these courses and the other parts of the core knowledges



Spring 2010

- the networked activities at WB universities on producing syllabi for courses covering other parts of core knowledge, elective and special courses and research seminars
- dissemination through a series of one day round tables at WB universities on PhD structure and curricula in mathematical sciences in April 2010



Workshop on harmonized PhD program/s, Belgrade, June 13–17, 10

- to discuss achievements and start the process of institutional approval of the agreed model of SEE Doctoral Studies in Mathematical Sciences and the PhD curricula at partner institutions
- the first generation of networked doctoral studies in mathematical sciences enrolled by the end of 2010



Management

- Consortium Committee Initial Meeting, Sarajevo, January 28-31, 2009
- Consortium Committee First Review and Planning Meeting, Belgrade, Dec 17-20, 2009
- Consortium Committee Second Review and Planning Meeting, Skopje, Dec 16-19, 2010
- Consortium Committee Final Review Meeting, Sarajevo, Dec 15-18, 2011
 - Analysis of overall results
 - course of post TEMPUS funding actions recommended by the Sustainability plan



Synergy and perspectives

- DAAD Centers of Excellence for Applications of Mathematics
- Erasmus Mundus (incl. Basileus)
- Nationally supported projects
- European Mathematical Society and MASSEE partnership within a European Research Council project

Thank you!