TUESDAY, Febr	uary 4, 2020			
9:00 – 12:00 Re	gistration – Room 04			
13:00 Openii	ng ceremony – Room S	2		
Chairwoman: V	ELICHOVÁ Daniela			
14:00 QUEIRUG	GA DIOS Araceli – ASSESSMI	ENT STANDARDS AND ACTIVITIES: SOME RESULT	-s	
15:00 – 15:30 C	offee break			
	Pierre – ESTHÉTOPIES Michal – VISUALIZING OBJE	ECTS OF FOUR-DIMENSIONAL SPACE: FROM FLA	FLAND TO THE HOPF FIBRATION	
WEDNESDAY, F	ebruary 5, 2020			
	Room S1	Room S2	Room S3	Room S4
08:40 - 10:30	Mathematics and Art JOVIĆ Biljana	New Trends in Mathematical Education, Presentations of Project Rules_Math results QUEIRUGA DIOS Araceli	Statistical Methods in Technical and Economic Sciences and in Practise BUDÍKOVÁ Marie	Differential Equations, Dynamic Systems and Their Applications TOMICZEK Petr
10:30 – 11:00 C	offee break	1		
11:00 – 13:00	Mathematics and Art TEDESCHINI-LALLI Laura	New Trends in Mathematical Education KONEČNÁ Petra	Statistical Methods in Technical and Economic Sciences and in Practise KOHOUT Václav	Algebra, Geometry and Their Application CHVALINA Jan
13:00 – 14:00 L	unch break			•
14:00 – 15:30	Mathematics and Art FALCOLINI Corrado	New Trends in Mathematical Education JANČAŘÍK Antonín	Statistical Methods in Technical and Economic Sciences and in Practise HECKENBERGEROVÁ Jana	Algebra, Geometry and Their Application SURYNKOVÁ Petra
15:30 – 16:00 C	offee break			
16:00 – 18:00	Mathematics and Art LORENZI Marcella Giulia	New Trends in Mathematical Education MENDONÇA Jorge	Statistical Methods in Technical and Economic Sciences and in Practise BÍLKOVÁ Diana	Various Topics in Applied Mathematics KOUDELA Libor
18:00 – 22:00 C	onference reception			

THURSDAY, February 6, 2020		
	Room S2	Room S3
08:40 - 10:00	New Trends in Mathematical Education NOVOTNÁ Jarmila	Mathematics and Physics in Science and Education LEJA Jozef
10:00 – 10:30 Coffee break		
10:30 – 12:30	New Trends in Mathematical Education RICHTÁRIKOVÁ Daniela	Mathematics and Physics in Science and Education HABALA Petr
12:30 Farewell coffee		

MATHEMATICS AN	ND ART, SECTION DEDICATED TO THE MEMORY OF MAURO FRANCAVIGLIA – WEDNESDAY, FEBRUARY 5, 2020, S1, PRÁŠILOVÁ / OMACHELOVÁ
09:00 - 10:30	BILIANA JOVIĆ
09:00 - 09:20	Mária Ždímalová: Aggregations, Architecture, Design, Art
09:20 – 09:40	CATERINA CUMINO, MARTINO PAVIGNANO, URSULA ZICH: GEOMETRY OF A BARREL VAULT WITH LUNETTES BETWEEN SUBJECTIVITY AND OBJECTIVITY OF ITS REPRESENTATION: A CRITICAL APPROACH
09:40 - 10:00	MARTINO PAVIGNANO, CATERINA CUMINO, URSULA ZICH: CLOISTER VAULTS BETWEEN SYNTHETIC, ANALYTIC AND BUILT GEOMETRY: IL VOLTO ANTONELLIANO IN TORINO
10:00 - 10:20	Paola Magnaghi-Delfino, Giampiero Mele, Tullia Norando: Fortress Plans According to Euclid
10:30 - 11:00	COFFEE BREAK
11:00 - 13:00	Laura Tedeschini-Lalli
11:00 – 11:20	ENZA DE LAURO, MARIA ROSARIA FALANGA: ANALYSIS OF ACOUSTIC FIELD EMITED BY ORGANS: A CONTRIBUTION FOR THE TUNING OF ANCIENT INSTRUMENTS
11:20 – 11:40	Enza De Lauro, Salvatore De Martino, Maria rosaria Falanga, Laura Tedeschini-Lalli: Physical Mechanisms Associated with the Soundscape: Trevi Fountain Case Study
11:40 - 12:00	GINO IANNACE, GIUSEPPE CIABURRO, AMELIA TREMATERRA: SOUND ATTENUATION WITH METAMATERIALS
12:00 – 12:20	GINO IANNACE, AMELIA TREMATERRA, GIUSEPPE CIABURRO: THE ACOUSTIC APPLICATION OF THE COMPLEX IMAGE METHOD
12:20 – 12:40	Laura Tedeschini-Lalli, Chris Havens: Math and Art in Prison. a Collaborative Effort across the Ocean
12:40 – 13:00	
13:00 – 14:00	LUNCH
14:00 – 15:30	CORRADO FALCOLINI
14:00 – 14:20	Martin Hencl, Jaroslav Marek: Macrostructures of Zdeněk Sýkora
14:20 – 14:40	Cristina Maria Pacurar: Kazimir Malevich and Symmetries
14:40 – 15:00	Paola Magrone: Sierpinski's Curve: A (Beautiful) Paradigm of Recursion
15:00 – 15:20	CORRADO FALCOLINI: HOW GOLD IS THE GOLDEN RATIO?
15:30 – 16:00	COFFEE BREAK
16:00 – 18:00	Marcella Giulia Lorenzi
16:00 – 16:20	Alessandra Capanna, Giampiero Mele: The Shape of Continuity. A Research Method
16:20 – 16:40	Brian Tolan: The Prime Tartan
16:40 – 17:00	Marcella Giulia Lorenzi: Art and artificial Intelligence
17:00 – 17:20	
17:20 – 17:40	
18:00 – 22:00	CONFERENCE RECEPTION

08:30 - 10:30	MATHEMATICAL EDUCATION AT UNIVERSITIES – WEDNESDAY, FEBRUARY 5, 2020, S2, RICHTÁRIKOVÁ PRESENTATIONS OF PROJECT RULES MATH RESULTS
00.30 10.30	Chairperson: Araceli Queiruga Dios
08:30 - 08:50	SNEZHANA GOCHEVA-ILIEVA, HRISTINA KULINA, ANTON ILIEV, ATANAS IVANOV, ILIYCHO ILIEV: A MODEL FOR ASSESSMENT OF MATHEMATICAL COMPETENCIES IN
	Engineering Education
08:50 - 09:10	DEOLINDA MARIA LOPES RASTEIRO, CRISTINA MARIA CARIDADE: STATISTICAL METHODS: ASSESSING KNOWLEDGE AND COMPETENCIES
09:10 - 09:30	CRISTINA MARIA CARIDADE, DEOLINDA MARIA LOPES RASTEIRO: MATHEMATICS FOR ENGINEERS: ASSESSING KNOWLEDGE AND COMPETENCIES
09:30 - 09:50	YILMAZ FATIH, MIERLUS MAZILU ION, RASTEIRO DEOLINDA: SOLVING REAL LIFE PROBLEMS USING MATRICES AND DETERMINANTS
09:50 - 10:10	MIERLUS MAZILU ION, YILMAZ FATIH: SOME PRACTICAL APPLICATIONS OF MATRICES AND DETERMINANTS IN REAL LIFE
10:10 - 10:30	Marie Demlová: Increasing Students' Motivation. Example From Discrete Mathematics
10:30 - 10:40	Jana Gabková, Daniela Richtáriková, Peter Letavaj: Assessment of Mathematical Competence via Contents Models
10:30 - 11:00	COFFEE BREAK
11:10 - 13:00	Chairperson: Petra Konečná
11:10 - 11:30	Monika Dillingerová, Peter Vankúš: How to Avoid Some Misconceptions in the Tasks Dealing with the Functions at the University Level
11:30 – 11:50	Vojtěch Růžička: Examples of Simplified Notations Used in Calculus and Their Influence on Teaching at Undergraduate Level
11:50 – 12:10	Zuzana Václavíková: Science Students' Perception of Functional Dependencies and Their Interpretation with Real Phenomena
12:10 – 12:30	Markéta Matulová, Hanna Demchenko: Inquiry-Based Mathematics Education: Literature Database and Bibliographic Analysis
12:30 – 12:50	Petra Konečná, Jiří Ptáček: Level of Mathematical Knowledge and Skills of 1st Year Students of Informatics and Mathematical Study Programmes
13:00 – 14:00	LUNCH
14:00 – 15:30	Chairperson: Antonín Jančařík
14:00 – 14:20	Francesco Bologna, Anna Perrotta, Enrico Rogora, Ilaria Veronesi: Using Graphing Calculators at University
14:20 - 14:40	SVETLANA TOMICZKOVÁ: GEOMETRIC SOFTWARE IN COURSES OF DIFFERENTIAL GEOMETRY
14:40 – 15:00	Daniela Bímová, Jiří Břehovský, Petra Pirklová: Creation of Geometric Solids in GeoGebra
15:00 – 15:20	Šárka Gergelitsová, Tomáš Holan: SAVE – Saving Student's Responses
15:20 – 15:40	Antonín Jančařík: Designing Geometry Construction Problems in the Techambition System
15:30 – 16:00	COFFEE BREAK
16:00 – 18:00	Chairperson: Jorge Mendonça
16:00 – 16:20	Anna Salvadori, Brandi Primo, Mario Angelo Pucci: Elementary Mathematical Models in Chemical Kinetics
16:20 – 16:40	JOSEP FREIXAS, MONTSERRAT PONS: A MATHEMATICAL PERSPECTIVE ON HOW TEST-TYPE EXAMS ARE EVALUATED
16:40 – 17:00	Oksana Pavlenko: Lower Weight for Exam Grades – Better Academic Performance?
17:00- 17:20	Ilona Dzenite, Sarmite Cernajeva, Aleksandrs Matvejevs: Attractiveness of Engineering Higher Education Study at RTU for Foreign Students
17:20 – 17:40	Anna Vintere, Renata Macaitiene: Mathematics Education Development in Line with the Trends of Sustainable Development: Experience within the "MATNET"
17:40 – 17:50	JORGE MANUEL MENDONÇA, LURDES BABO, CARLA PINTO: SKILLS OF BACHELOR ENGINEERING STUDENTS ATTENDING ACTIVE-LEARNING MATH COURSES
17:50 – 18:00	Jorge Mendonça, Cristina Torres, Lurdes Babo: Preparing Undergraduate Students for Life

09:00 - 10:30	Chairperson: Marie Budíková	
09:00 - 09:20	BLANKA ŠEDIVÁ, TOMÁŠ ŤOUPAL: OUTLIER DETECTION TECHNIQUES IN MULTIDIMENSIONAL DATASETS	
09:20 - 09:40	Tomáš Ťoupal, Blanka Šedivá: Multivariate Nonparametric Kernel Estimation	
09:40 - 10:00	VĚRA ČADKOVÁ, DANA KUBÁTOVÁ: DESIGN OF EXPERIMENT FOR MONITORING INFLUENCE OF SELECTED FACTORS ON THE CORE ROUGHNESS DEPTH	
10:00 - 10:20	Marie Budíková, Ladislav Budík: Comparison of Various Methods of Parameters Estimation of MLN5 Distribution Using Simulation Study	
10:30 - 11:00	COFFEE BREAK	
11:00 - 13:00	Chairperson: Václav Kohout	
11:00 – 11:20	SNEZHANA GOCHEVA-ILIEVA, ATANAS IVANOV, MAYA STOIMENOVA-MINOVA: PREDICTION OF PM10 AIR POLLUTION USING RANDOM FORESTS AND ARIMA ERROR CORRECTION MODELS	
11:20 – 11:40	HRISTINA KULINA, ATANAS IVANOV, SNEZHANA GOCHEVA-ILIEVA: MODELLING OF BEER INDUSTRY DATA USING PRINCIPAL COMPONENTS AND TIME SERIES ARIMA METHODS	
11:40 – 12:00	ALESSANDRO CATERINO, RITA CEPPITELLI, L'UBICA HOLÁ: ON THE JOINTLY CONTINUOUS MULTI-UTILITY REPRESENTATION PROBLEM	
12:00 – 12:20	NIKOLA KASPŘÍKOVÁ: EWMA-BASED LTPD ACCEPTANCE SAMPLING PLANS AND COST SAVINGS	
12:20 – 12:40	Tomáš Ettler, Pavel Nový: Diagnostic Meaning of Correlation Relationship	
12:40 - 13:00	VÁCLAV KOHOUT, ŠÁRKA PĚCHOUČKOVÁ: BOOTSTRAP AND MOMENT ESTIMATOR OF THE TAIL INDEX Γ	
13:00 – 14:00	LUNCH	
14:00 - 15:30	Chairperson: Jana Heckenbergerová	
14:00 - 14:20	JITKA BARTOŠOVÁ, VLADISLAV BÍNA: DETERMINANTS OF AN ABILITY TO MAKE ENDS MEET IN THE CASE OF CZECH HOUSEHOLDS	
14:20 - 14:40	PATRICE MAREK, VĚRA ČADKOVÁ: OPTIMIZATION AND TESTING OF MONEY FLOW INDEX	
14:40 – 15:00	Alena Pozdílková, Jaroslav Marek, Jan Obolecký: Profitability Analysis of Artificial Intelligence Methods and Technical Indicators in the FOREX Exchange	
15:00 – 15:20	JANA HECKENBERGEROVÁ, PAVEL KROMER, MARTIN HASAL: MODELLING DAILY TRAFFIC FLOW DISTRIBUTIONS BY FINITE MIXTURES OF SIMPLE VON MISES DISTRIBUTIONS	
15:30 - 16:00	COFFEE BREAK	
16:00 - 18:00	Chairperson: Diana Bílková	
16:00 – 16:20	ONDŘEJ ŠIMPACH, MARIE ŠIMPACHOVÁ PECHROVÁ: DOES TECHNICAL EFFICIENCY CALCULATED BY SFA STATISTICALLY SIGNIFICANTLY VARIES IN DIFFERENT SAMPLES?	
16:20 – 16:40	Radoslav Kovář, Filip Habarta, Ivana Malá, Lubomír Štěpánek, Adam Čabla: Survival Regression Model with Lagged Covariates	
16:40 - 17:00	DOMINIKA BALLOVÁ: THE ACHIEVEMENT OF STUDENTS IN MATHEMATICS AND THE INFLUENCE OF MATHEMATICS ON THE STUDY OF CIVIL ENGINEERING	
17:00 – 17:20	YASMINA ELSEKSEK, SOFIANE GRIRA: THE ROLE OF STATISTICS SOVTWARE IN IMPROVING STUDENT'S LEARNING OF STATISTICS	
17:20 – 17:40	DIANA BÍLKOVÁ: ELASTICITY OF FOUR-PARAMETER VERSUS THREE-PARAMETER LOGNORMAL CURVES: COMPARATIVE ANALYSIS	
17:40 – 18:00		
18:00 – 22:00	CONFERENCE RECEPTION	

DIFFERENTIAL EQU	JATIONS, DYNAMIC SYSTEMS AND THEIR APPLICATIONS — WEDNESDAY, FEBRUARY 5, 2020, S4, LETAVAJ
08:40 - 10:30	CHAIRPERSON: PETR TOMICZEK
08:40 - 09:00	MICHAL BENEŠ, PETR KUČERA, PETRA VACKOVÁ: EXISTENCE AND REGULARITY OF THE STOKES SYSTEM WITH THE DO-NOTHING AND NAVIER´S BOUNDARY CONDITIONS
09:00 - 09:20	Martina Langerová: Positive and Negative Solutions of Beam Equation with Impulses
09:20 - 09:40	Andrejs Matvejevs, Ksenija Ļohina: A Stochastic Model of the Logistic system Dynamics
09:40 - 10:00	Jana Stránská : Otakar Borůvka and his Successors in the Field of Differential Equations
10:00 - 10:20	PETR TOMICZEK: SECOND ORDER PROBLEM WITH ALP CONDITION AND UNBOUNDED NONLINEARITIES
10:30 - 11:00	COFFEE BREAK
ALGEBRA AND GE	OMETRY AND THEIR APPLICATIONS – WEDNESDAY, FEBRUARY 5, 2020, S4, LETAVAJ
11:00 – 13:00	CHAIRPERSON: JAN CHVALINA
11:00 – 11:20	YEVHEN CHEREVKO, VLADIMIR BEREZOVSKI, SVITLANA LESHCHENKO, RUSLANA NENKA: INFINITESIMAL CONFORMAL TRANSFORMATIONS OF RIEMANNIAN MANIFOLDS
	WHICH PRESERVE THE GENERALIZED EINSTEIN TENSOR
11:20 – 11:40	Volodymyr Berezovski, Josef Mikeš, Lenka Rýparová: Conformal and Geodesic Mappings onto Ricci Symmetric Spaces
11:40 – 12:00	CARMELO CISTO, GIOIA FAILLA: COMBINATORICS OF THE COMPLETE GRAPH
12:00 – 12:20	RADOVAN POTŮČEK: THE SUM OF THE SERIES OF RECIPROCALS OF THE CUBIC POLYNOMIALS WITH THREE DIFFERENT NEGATIVE INTEGER ROOTS
12:20 – 12:40	MICHAL STAS: ON THE CROSSING NUMBERS OF JOIN K _{2,3} +P _N
12:40 - 13:00	JAN CHVALINA: SYSTEMS OF FRAGMENTS OF ARTIFICIAL NEURAL NETWORKS
13:00 – 14:00	LUNCH
ALGEBRA AND GE	OMETRY AND THEIR APPLICATIONS – WEDNESDAY, FEBRUARY 5, 2020, S4, LETAVAJ
14:00 – 15:30	Chairperson: Petra Surynková
14:00 – 14:20	Viera Čerňanová: On a Configuration Resulting from Circle Inversions
14:20 – 14:40	Robert Bohdal, Andrej Ferko, Marcel Pecko, Mikuláš Polák: Experimental Shape Reconstruction from High-Precision Cruse Scan Using Shadows and
	Focusing
14:40 – 15:00	Šárka Gergelitsová, Tomáš Holan: SAVE – Saving Student's Responses
15:00 – 15:20	PETRA SURYNKOVÁ: ON THE SYNTHETIC CONSTRUCTIONS OF SPECIFIC PLANAR CURVES OF KINEMATIC GEOMETRY
15:30 – 16:00	COFFEE BREAK
VARIOUS TOPICS I	n Applied Mathematics — Wednesday, February 5, 2020, S4, Letavaj
16:00 – 18:00	CHAIRPERSON: LIBOR KOUDELA
16:00 – 16:20	VÍCTOR GAYOSO MARTÍNEZ, LUIS HERNÁNDEZ ENCINAS, AGUSTÍN MARTÍN MUÑOZ, ARACELI QUEIRUGA-DIOS: ELLIPTIC CURVES AS A BASIC TOOL FOR THE SECURITY OF BLOCKCHAIN
16:20 – 16:40	VÍCTOR GAYOSO MARTÍNEZ, ASCENSIÓN HERNÁNDEZ ENCINAS, LUIS HERNANDEZ ENCINAS, AGUSTIN MARTIN MUÑOZ: MATHEMATICS AND PHYSICS IN SIDE-CHANNEL AND FAULT ATTACKS TO CRYPTOSYSTEMS
16:40 – 17:00	Umud Novruzov, Roman Ďurikovič: Review of Recent Camera Geometry for Light Field Capturing
17:00 – 17:20	MICHAL KRÁČALÍK: MATHEMATICAL MODELLING OF CONTINUUM MECHANICS IN CONTEXT OF INDUSTRY 4.0 WITH EMPHASIS ON MATHEMATICAL EDUCATION
17:20 – 17:40	JAROSLAV SEIBERT, LIBOR KOUDELA: THE MERRIFIELD-SIMMONS INDEX FOR TWO TYPES OF PHENYLENES
18:00 – 22:00	CONFERENCE RECEPTION

New Trends in M	ATHEMATICAL EDUCATION AT UNIVERSITIES —THURSDAY, FEBRUARY 6, 2020, S2, GABKOVÁ	
08:40 - 10:00	CHAIRPERSON: JARMILA NOVOTNÁ	
08:40 - 09:00	VITTORIA BONANZINGA, CARMELO CISTO, EDWIGE MICELI: BLENDED LEARNING: AN EXPERIENCE WITH USE OF MOBILE DEVICES FOR THE COURSE "FUNDAMENTALS OF	
	Mathematics for Basic Education"	
09:00 - 09:20	MARTA MENGHINI, ENRICO ROGORA, MARTINA DE MARCHIS: THE IMPORTANCE OF "EXTENSIVE TEACHING" IN THE EDUCATION OF PROSPECTIVE TEACHERS OF MATHEMATICS	
09:20 - 09:40	FILIP BERAN: GEOMETRIC TRANSFORMATIONS AS A GATEWAY INTO MATHEMATICAL STRUCTURES: CONSTRUCTIVIST APPROACH	
09:40 - 10:00	JARMILA NOVOTNÁ, ANDREAS ULOVEC, HANA MORAOVÁ: TEACHING MATHEMATICS TO MIGRANT OR MINORITY STUDENTS: CONCEPT FOR CREATING MATERIALS	
10:00 - 10:30	COFFEE BREAK	
10:30 - 12:30	Chairperson: Daniela Richtáriková	
10:30 - 10:50	Zuzana Gönciová, Veronika Hubeňáková, Ingrid Semanišinová: Mathematics Teachers Reflecting on Student's Non-Standard Reasoning about	
	DIVIDING THE FRACTIONS	
10:50 - 11:10	Jana Hromadová, VlastaMoravcová, Jarmila Robová, Zdeněk Halas: Problems of Pre-Service Mathematics Teachers' Education in Geometry	
11:10 - 11:30	Soňa Čeretková, Kristína Bulková: Mathematics Trails in Initial Teachers´ Education in Slovakia	
11:30 - 11:50	VERONIKA GLOVŇOVÁ: TEACHERS' BELIEFS ABOUT LEARNING FROM ERRORS OCCURRING IN THE LEARNING PROCESS	
11:50 - 12:10	DOMINIKA ČIERNIKOVÁ: APPLICATION OF THE FROBISHERS´ TECHNIQUE FOR CREATING THE OPEN TASKS	
12:10 - 12:30	Jakub Poruba, Věra Ferdiánová: Augmented Reality in Lecture on Constructional Geometry	
12:30	CONFERENCE FAREWELL COFFEE	
MATHEMATICS ANI	D PHYSICS IN SCIENCE AND EDUCATION — THURSDAY, FEBRUARY 6, 2020, S3, LEJA	
08:40 - 12:30	CHAIRPERSON: JOZEF LEJA	
08:40 - 09:00	Alexander Kuzmin: Non-Uniqueness of Inviscid Transonic Flow over Symmetric Double Wedges	
09:00 - 09:20	František Seba, Milan Krbálek: Super-Poissonian Statistics in Traffic Flow	
09:20 - 09:40	Tomáš Zeithamer, Jiří Pospíšil: Generalized Law of Retail Gravitation	
09:40 - 10:00	Jozef Leja, Štefan Gmuca: Relativistic Mean-Field Model of Atomic Nucleus	
10:00 - 10:30	COFFEE BREAK	
10:30 - 12:30	CHAIRPERSON: PETR HABALA	
10:30 - 10:50	Patrik Grosinger, Peter Šolek, Jan Rybář: Comparison of Planar Crane Models	
10:50 – 11:10	Roman Ižold, Roland Jančo: Propagation of Negative Pressure Wave in Water-Filled Steel Pipe	
11:10 - 11:30	PETER ŠLESAR, ROLAND JANČO: ANALYSIS OF WELDING ALUMINIUM PLATES BY FRICTION STIR WELDING	
11:30 - 11:50	Jiří Jánský: Teaching of Mathematics in MAPLE Program	
11:50 - 12:10	PETR HABALA: A NEW NUMERICAL METHODS LIBRARY FOR MAPLE	
12:30	CONFERENCE FAREWELL COFFEE	