



Prof. Aleksandar Takači
UNS, Novi Sad

Minutes of the Meeting, organized by UNS (Aleksandar Takači)
in December 21, 2020 by TEAMS
As Transnational Meeting Kickoff meeting
By TEAMS

Participants: Aleksandar Takači, Đurđica Takači, Doru Paunescu, Biljana Jolevska Tuneska, Nikola Tuneski, Rale Nikolić, Miroslava Raspopović, Dragan Mašulović, Limonka Koceva Lazarova, Biljana Zlatanovska, Marija Miteva, Mirjana Brdar, Mirjana Mikalački, Aleksandra Stevanović

Program:

1. Welcome world-- prof. Aleksandar Takači
2. Overview and summary of project activities—Đurđica Takači
3. Preparation of Partnership agreements
4. Discussions about project management, communication during Covid19 crisis
5. The Steering Committee of the project
6. Discussions about "Analysis report on state of art in using technologies to support teaching in Mathematics before, during and after Covid-19 crisis (O1)
7. Miscellaneous

Kickoff meeting in Novi Sad could not be organized because of Covid 19 and therefore. TEAMS Kickoff meeting was organized by Aleksandar Takači, from leading partner organization, from UNS, in December 21, 2020.

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All partners responds to the invitation and all tried to connect. Partners from Metropolitan Universities had problems with connection but we included them throughout the phone.

Ad 1. Welcome word was given by Aleksandar Takači

Ad 2. Đurđica Takači presented short overview of [FutureMath project](#)

Ad 3. All partners agreed with the form of partnership agreement prepared by leading partner UNS, and the signatures will be realized soon.

Ad 4. All partners took part in the discussions about project management decided that all project partners will participate in Project management, as it was proposed in the Application of the project.

All partners will take part in preparation of all activities that proposed in Application, and all of finished material will be sent to UNS, and UNS will transfer To National Office.

All partner team members believe that by the summer of 2021 the Covid19, situation will normalize and that we will be able to travel to Stip on second International meeting.

Ad 5. The participants of Steering Committee (SC) are chosen: Aleksandar Takači(UNS), Doru Paunescu(UPT), Rale Nikolić(BMU), Biljana Jolevska Tuneska (SIM) and Marija Miteva (GDU).

Ad 6. All partners took place in the discussions about "Analysis report on state of art in using technologies to support teaching in Mathematics before, during and after Covid-19 crisis that will be prepared in the auspice of IO1.

The main conclusion: All partners were introduced with the tasks and partners from Timisoara had started to organized work on the First intellectual output IO1. We agreed that all partners need to be in simultaneous connections and to prepare about 25 pages each of the "Analysis report on state of art in using technologies to support teaching in Mathematics after Covid-19 crisis (O1) " for the beginning of March 2021, **up the end of March 2021.**

In order to obtain the results of IO1

1 Developed Web page

2. Collection of good practices and current STEAM methods before Covid-19 crisis and



3. Collection of distance learning practice during the Covid-19 crisis;
 4. Developed of STEAM intervention guidelines based on previous collections,
- The corresponding project tasks are emphasized.

Collection of good practices and current STEAM methods before Covid-19 crisis and collection of distance learning practice during the Covid-19 crisis should be 25 pages per participant, 125-150 together

The qualitative and qualitative indicator indicators for the first IO are defined:

Each partner country should develop about 25 pages of Collection of good practices and current STEAM methods before Covid-19 crisis and Collection of distance learning practice during the Covid-19 crisis.

The partners will collect and analyze current state of the art teaching, learning and evaluation methods in their countries and the countries where they are informed about it. Focus will be on the good practices implemented at EU universities, especially in mathematics courses, based on STEAM principles, and the results of previous project results.

Appendix

Mathematics of the Future: Understanding and Application of Mathematics with the help of Technology

FutureMath

2020-11-01-22-10-31

Leading organization: University of Novi Sad

Partner organizations:

1. Visokoškolska ustanova metropolitan Univerzitet u Beogradu Serbia
2. Republic of Macedonia Goce Delcev state
university Stip the Republic of North Macedonia
3. Sojuz na istrazhuvachi na makedonija - Sim Skopje the Republic of North Macedonia
4. Universitatea Politehnica Timisoara Romania

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Project Summary

Knowledge and skills must keep up with the rapid changes in today's world. Basic knowledge and skills of great complexity are crucially important for the inclusion of the citizens as active members of the society. The development of modern society is based on the knowledge and skills acquired during the education process which is important for the individual and for society, in general.

FutureMath project is addressed to solve backwardness of technology and pragmatic educational methods of the educational institutions. FutureMath project aims

- to improve professional competences and to support innovation in the teachers' system of training through pedagogical solutions and innovative practices based on the new computer and multimedia technologies
- to provide tools and methodologies to facilitate the acquisition of the mathematical competence by introducing advanced technological tools in the teaching of Mathematics and its application.
- to develop skills which can be used in order to contribute to a cohesive society, in particular to increase opportunities for learning mobility and through strengthened cooperation between the world of education and training and the world of work, formulating and solving complex problems autonomously, consciously and constructively.

FutureMath project aims to expand and modernize teaching and learning methods used in the field of mathematics and mathematics-based sciences through modernization of Calculus courses with STEAM principles. Based on the experience of using technology before and during Covid-19 crisis, the project tends to expand the knowledge base and implementations to other mathematics and mathematics-based courses. Multidisciplinary approaches in the development of mathematics courses using STEAM principles will enhance employability and improve students' career prospects.

The participants of the project have great experiences in mathematics education in new technology environment and are willing to use their previous experiences in STEAM to develop STEAM methodology and technology for mathematics course at university level. The participants of the project got experiences in teaching during the Covid-19 period, "stay at home",

and decided to improve distance and face to face learning using STEAM principles.

There are five intellectual outputs of project:

1. Analysis report on state of art in using technologies to support teaching in Mathematics after Covid-19 crisis

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2. Development of new STEAM methodology and technology
3. FutureMATH video collection
4. Piloting lessons and testing
5. Analysis and further development

and each partner organization is leading one of them.

Training in STEAM methodology and technology will be organized for the teachers who will be involved in STEAM pilot courses and STEM students who are interested in new ways of learning.

The project partners will organize 5 transnational meetings in order to conduct efficient and successful project management.

Analysis conducted within pilot implementation based on appropriate STEAM methodology and technology will enable feedback about the validity of new teaching approach and hopefully justifying its application. Such analysis shared with the partners' experiences will contribute to more efficient project development. FutureMath results will be accessible to wider audience through project's web site, teachers and student trainings, dissemination conferences, and multiple other dissemination events.

The consortium will organize 5 dissemination conferences in order to popularize the projects activities and results.

The impacts of FutureMath project are as following:

- Modernized Calculus and other mathematics-based courses in STEAM context, with created teaching, learning and evaluations materials,
- Created Proposals and Guidelines for implementation of STEAM technologies & methodologies, and online materials in the STEAM context, that can all be used by general academic and non-academic public for fostering STEAM skills,
- Trained university teachers in state of the art STEAM principles,
- Enhanced learning outcomes of graduated students with obtained multidisciplinary STEAM qualifications, which should contribute to reduction of dropout rates and improved research capacities.

The proposed project will lead to the creation of an accessible e-learning materials. This material will be accessible for the wide group of students and teachers with disabilities. Learning challenges can include experiencing visual or hearing impairments, facing barriers to mobility, or dealing with learning disabilities. Designers of e-learning will use developed strategies to minimize barriers to learning by structuring the learning materials and its presentation in e-learning platform to accommodate those with learning challenges. This approach has an

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added benefit in that it not only levels the playing field for those experiencing challenges, but it also makes e-learning

The following results are expected during and on FutureMath project completions:

1. Developed Web page
2. Collection of good practices and current STEAM methods before Covid-19 crisis;
3. Collection of distance learning practice during the Covid-19 crisis;
4. Developed of STEAM intervention guidelines based on previous collections;
- 5 Proposals for implementing STEAM technologies and methodologies ;
6. Guidelines for on line material in the STEAM context;
7. Developed teaching and learning materials for exemplary Calculus courses;
8. Published online exemplary lessons;
9. Created exemplary course evaluations;
10. Exemplary tests.
11. Implemented of exemplary Calculus courses;
12. Implemented of course evaluations;
10. Results of analysis of the impact and effects of pilot courses;
11. Created framework for integrating STEAM principles for STEM studies;
11. Published online teaching and learning materials for Calculus courses in STEAM context;
12. Trained staff: teachers involving in pilot courses, mathematics teachers, other STEAM teachers and STEAM students, for developing teaching and learning materials for applying STEAM methodology and technology in computer environment.

1. Transnational Projects Meeting 11-2020 Kickoff meeting in Novi Sad

Scheduling the first project activities with other partners;

“The fist (Kickof) meeting will be held in Novi Sad in Serbia, in November-December 2020, and on this meeting the initial actions for starting of the project will be carry out. The first consortium meeting will allow the Project Consortium members (PC) to discuss the overall project implementation. In particular, the communication, quality, assessment, dissemination plan and metrics will be developed. Each partner will have its assignments and detailed plan.”

First Intelctual output (20 participants will be involved) for

- 1) Analysis report on state of art in using technologies to support teaching in Mathematics after Covid-19 crisis (O1) - leading organization **Universitatea Politehnica Timisoara**
Ended March 2021



- 2) Intellectual output Development on the new teaching methodology and technology (02) - leading organization **Republic of Macedonia Goce Delcev University, Stip, Ended August 2021**
- 3) FutureMATH video collection (03) - leading organization **Visokoskolska ustanova Metropolitan univerzitet u Beogradu, Ended Janary 2022**
- 4) Piloting lessons and testing(04) - leading organization **Univerzitet u Novom Sadu Ended May 2022**
- 5) Analysis and further development (05) - leading organization **Sojuz na istrazhuvachi na Makedonija – SIM Skopje**

UNIVERZITET U NOVOM SADU	36.098,00	EUR
VISOKOSKOLSKA USTANOVA, METROPOLITANUNIVERZITET U BEOGRADU	28.519,00	EUR
REPUBLIC OF MACEDONIA GOCE DELCEV STATE, UNIVERSITY STIP	30.962,00	EUR
Sojuz na istrazhuvachi na Makedonija - SIM Skopje	26.326,00	EUR
UNIVERSITATEA POLITEHNICA TIMISOARA	30.962,00	EUR

LINKS and pictures

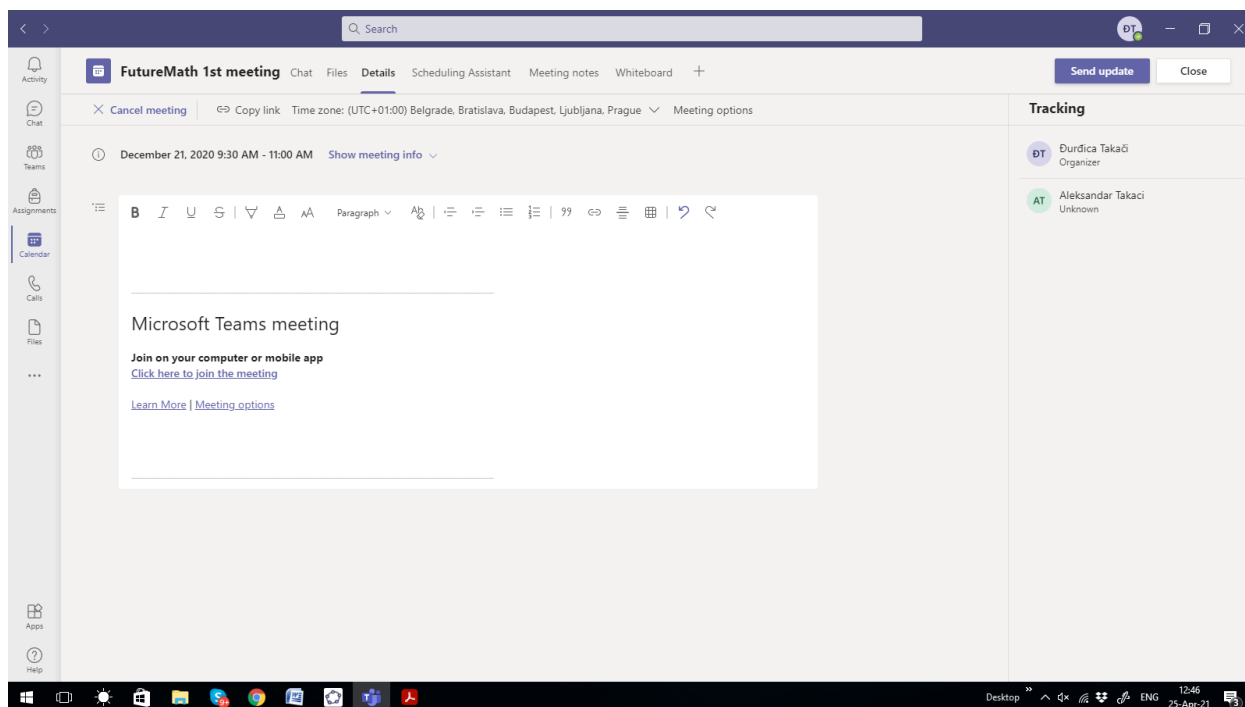
Invitation for the meeting December

<https://pmfns.sharepoint.com/sites/FutureMath/Deljeni%20dokumenti/Forms/AllItems.aspx?RootFolder=%2Fsites%2FFutureMath%2FDeljeni%20dokumenti%2FGeneral&FolderCTID=0x012000225B38DFF946904A9BDB13DAA7763702>

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**PROJECT : Mathematics of the Future:
Understanding and Application of
Mathematics with the help of Technology
FutureMath
2020-1-RS01-KA203-065388**

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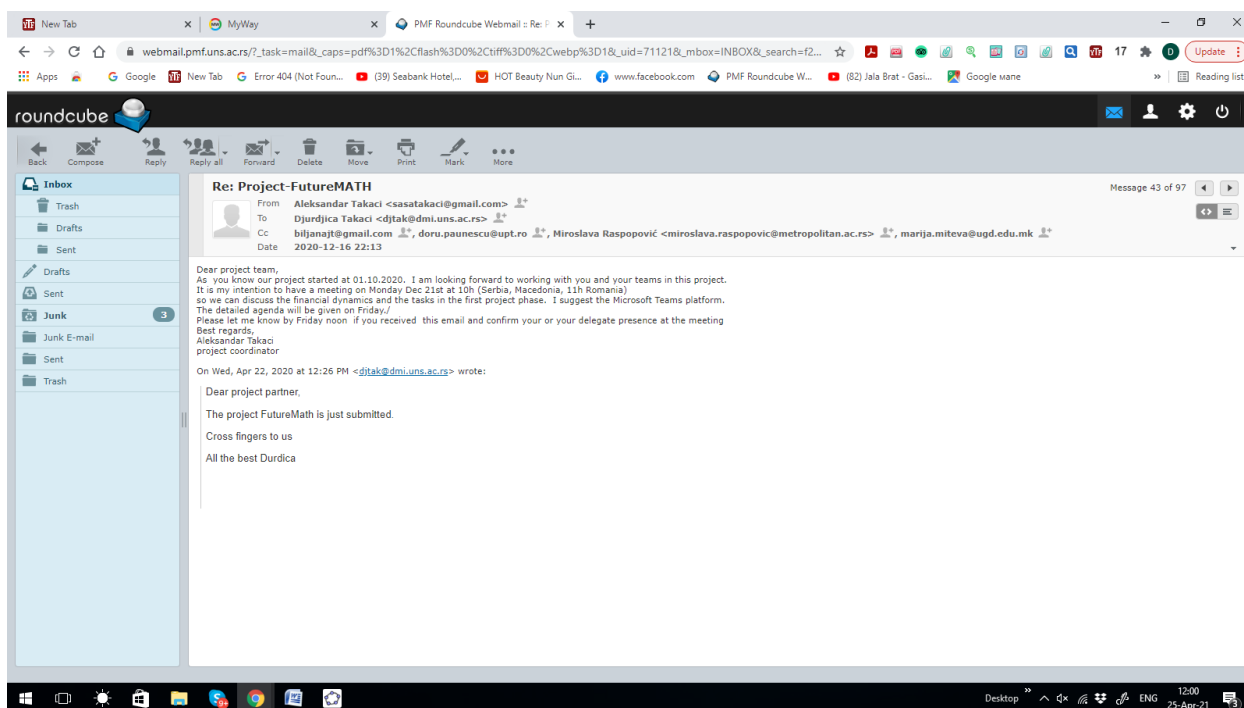
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Invitation for the meeting



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The screenshot displays a webmail interface (Roundcube) and a Microsoft Word document. The email, from Dr. Rale Nikolić, discusses a problem with Microsoft Teams verification. The Word document, titled "Mathematics of the Future: Understanding and Application of Mathematics with the help of Technology", is a project summary for FutureMath. It lists the leading organization as the University of Novi Sad and partner organizations including the University of Novi Sad, Republic of Macedonia, and others. The document also includes a project summary and a list of aims.

Re: Project-FutureMATH

From: Rale Nikolić <rale.nikolic@metropolitan.ac.rs>
To: sasatakaci <sasatakaci@gmail.com>
Cc: dtjak <dtjak@pmf.uns.ac.rs>
Date: 2020-12-21 13:09

To protect your privacy remote resources have been blocked. [Allow](#)

Miroslava i ja imamo problem sa verifikacijom preko Microsoft Teams-a. Kasnićemo. Pokušavamo da rešimo problem.

S poštovanjem,

**Dr Rale Nikolić, dipl. mat.,
vanredni profesor**

Tadeuša Koščuka 63, 11000 Beograd
tel: +381 11 20 30 885
rale.nikolic@metropolitan.ac.rs
www.metropolitan.ac.rs

From: "sasatakaci" <sasatakaci@gmail.com>
To: "Rale Nikolić" <rale.nikolic@metropolitan.ac.rs>
Sent: Monday, December 21, 2020 12:56:03 PM
Subject: Re: Project-FutureMATH

Ok nema problema
Aleksandar

On Mon, Dec 21, 2020 at 10:52 AM Rale Nikolić <rale.nikolic@metropolitan.ac.rs> wrote:
Poštovani prof. Takači,

**Mathematics of the Future: Understanding and Application of
Mathematics with the help of Technology**

FutureMath

From 2020-11-01 to 22-10-31

Leading organization: University of Novi Sad

Partner organizations:

1. Visokoskolska ustanova metropolitanuniverzitet u Beogradu, Serbia
2. Republic of Macedonia goce delcev state university stip the republic of north macedonia
3. Sojuz na istrazhuvachi na Makedonija - SIM Skopje the Republic of North Macedonia
4. Universitatea Politehnica Timisoara, Romania

Project Summary

Knowledge and skills must keep up with the rapid changes in today's world. Basic knowledge and skills of great complexity are crucially important for the inclusion of the citizens as active members of the society. The development of modern society is based on the knowledge and skills acquired during the education process which is important for the individual and for society, in general.

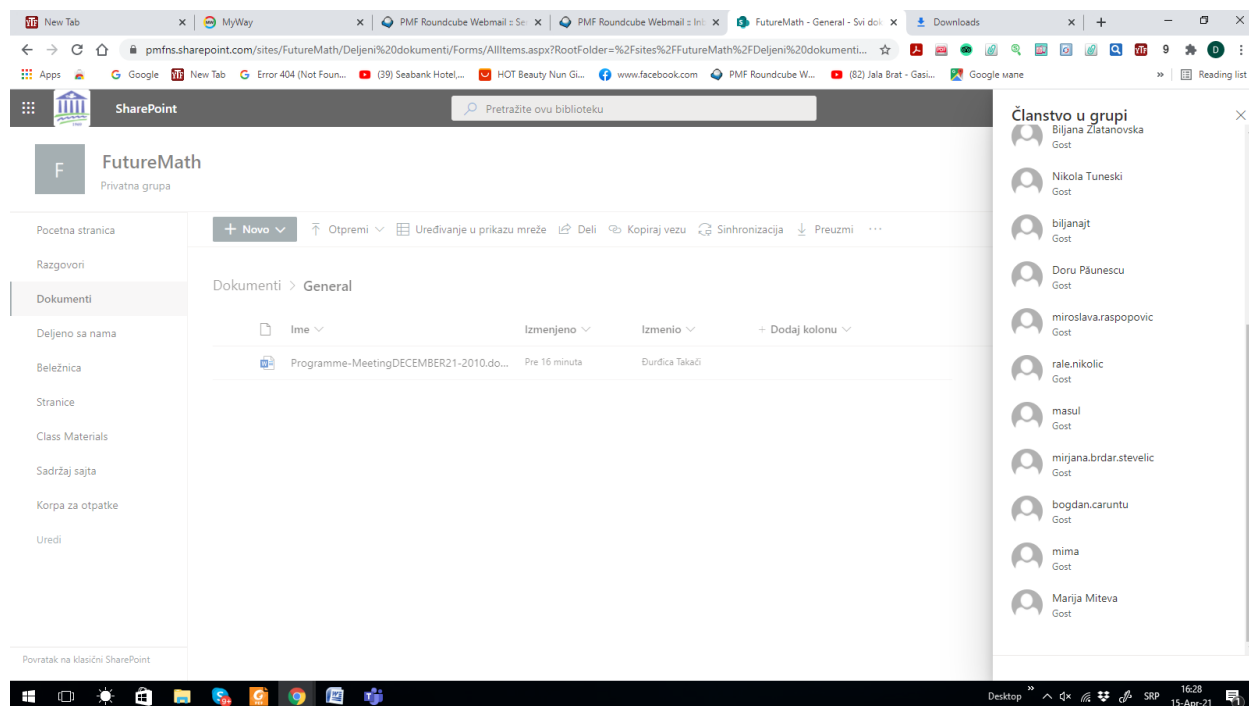
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<https://outlook.office365.com/mail/group/one.pmf.uns.ac.rs/futuremath/email/id/AAQkADJmYTc0NjIzLTEwZDktNDA5OS1hZDA4LTkzN2I1OTZhNmlyMAAQADzm8Vw6EdhCu%2BJ9%2Fw17OcM%3D>

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Participants of the meeting

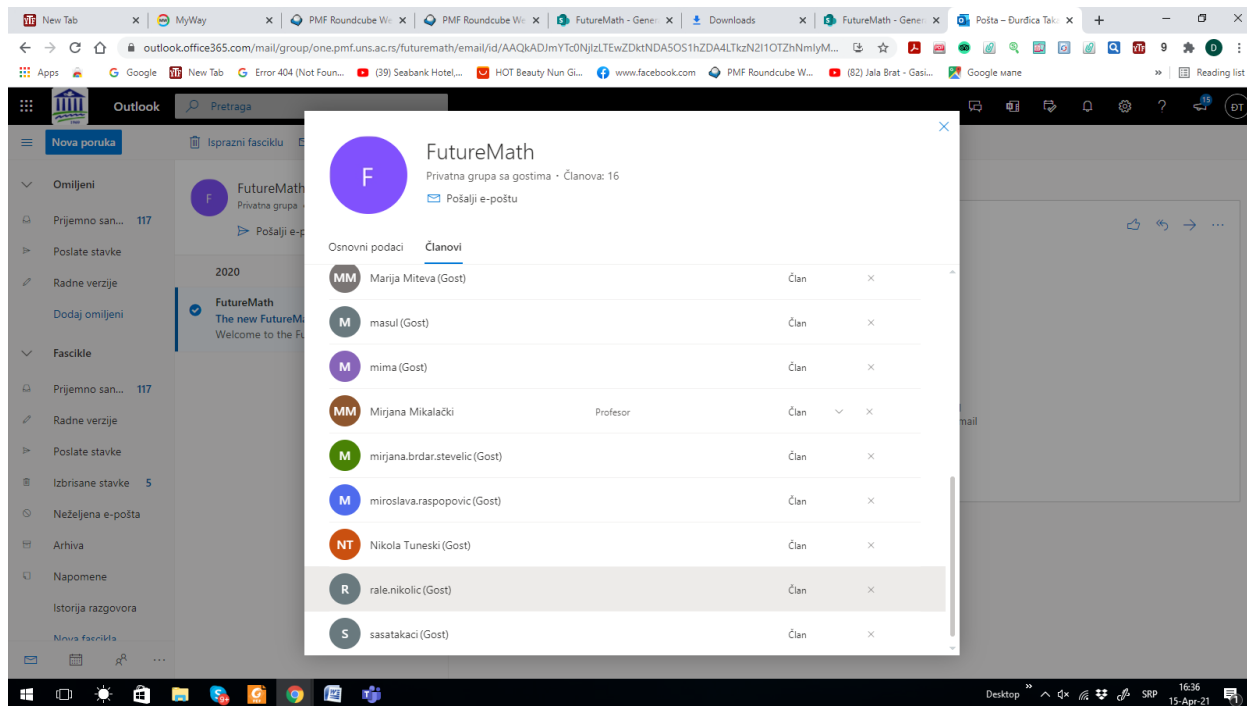
The screenshot shows an Outlook interface with a pop-up window displaying the members of the 'FutureMath' private group. The group has 16 members. The members list is as follows:

Ime	Radno mesto	Uloga
BT Đurđica Takači	Profesor	Vlasnik
AT Aleksandar Takaci (Gost)		Član
BZ Biljana Zlatanovska (Gost)		Član
B biljanajt (Gost)		Član
B bogdan.caruntu (Gost)		Član
DP Doru Păunescu (Gost)		Član

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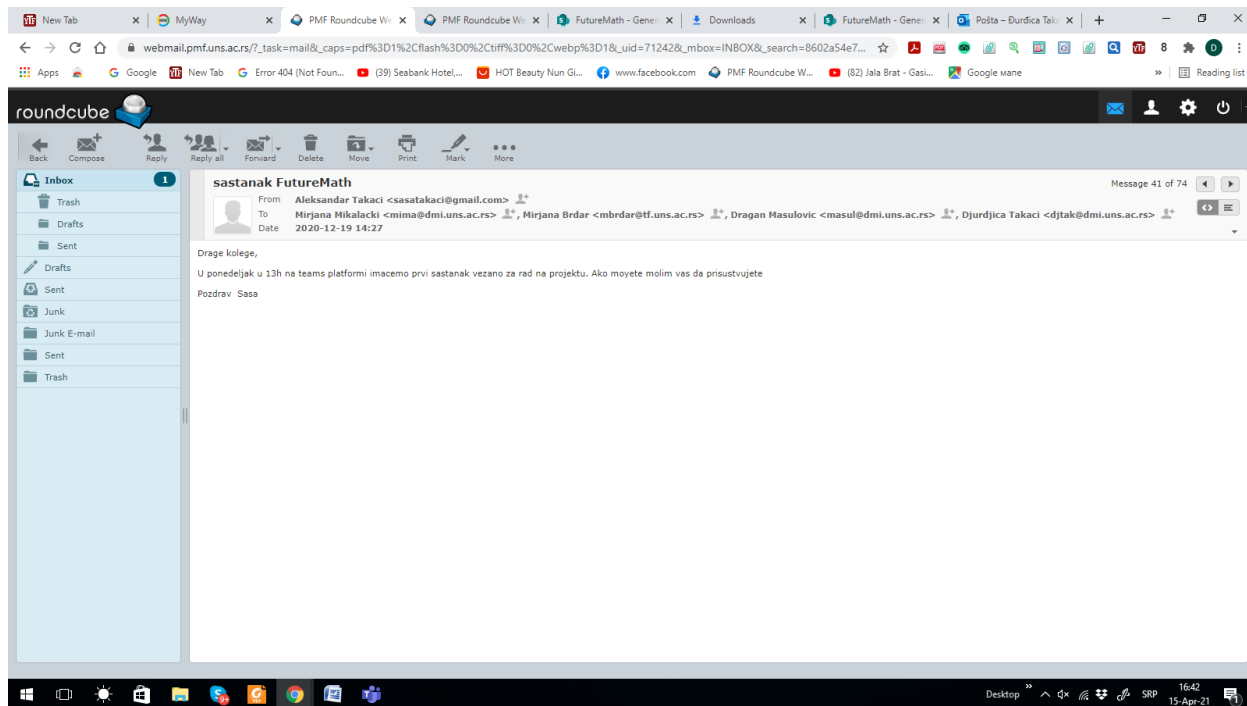
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Novi Sad December 22,2020

Prof. Aleksandar Takači

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