SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	**Babeş-Bolyai University Cluj-Napoca**
1.2 Faculty	**Faculty of Mathematics and Computer Science**
1.3 Department	**Department of Mathematics and Computer Science of the Hungarian Line**
1.4 Field of study	**Mathematics**
1.5 Study cycle	**Master**
1.6 Study programme / Qualification	**Didactic Mathematics (in Hungarian)**

2. Information regarding the discipline

2.1 Name of the discipline (en) (ro)			**Computer in mathematics education**				
2.2 Course coordinator			**Szenkovits Ferenc**				
2.3 Seminar coordinator			**Szenkovits Ferenc**				
2.4. Year of study	**1 (2)**	2.5 Semester	**1 (3)**	2.6. Type of evaluation	**E**	2.7 Type of discipline	**DF Compulsory**
2.8 Code of the discipline	**MMM3057**						

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	3	Of which: 3.2 course	2	3.3 seminar/laboratory	1
3.4 Total hours in the curriculum	42	Of which: 3.5 course	28	3.6 seminar/laboratory	14

Time allotment:	hours
Learning using manual, course support, bibliography, course notes	14
Additional documentation (in libraries, on electronic platforms, field documentation)	14
Preparation for seminars/labs, homework, papers, portfolios and essays	83
Tutorship	14
Evaluations	8
Other activities:	

3.7 Total individual study hours	133
3.8 Total hours per semester	175
3.9 Number of ECTS credits	7

4. Prerequisites (if necessary)

4.1. curriculum	• No

4.2. competencies	• Basic computer operator skills
	• Skills in high school math

5. Conditions (if necessary)

5.1. for the course	• Lecture room equipped with blackboard, computer and video projector
5.2. for the seminar /lab activities	• Computer room, smart board, video projector

6. Specific competencies acquired

Professional competencies	• Taking advantage of the opportunities provided by the computer in mathematics education.
Transversal competencies	• Increased computer literacy.

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	• Reviewing the use of computer capabilities in mathematics education.
7.2 Specific objective of the discipline	• To present different softs that can be used in mathematics education. • Students will be able to make good use of the varied possibilities offered by the computer in mathematics education and administration of the educational work.

8. Content

8.1 Course	Teaching methods	Remarks
1. Using the computer in teaching of mathematics	Lecture, dialogue	
2. Excel in math lessons	Lecture, dialogue	
3. Excel in didactical administration	Lecture, dialogue	
4. GeoGebra	Lecture, dialogue	
5. GeoGebra (II)	Lecture, dialogue	
6. GeoGebra (III)	Lecture, dialogue	
7. Making presentations (Power Point, Prezi, …)	Lecture, dialogue	
8. Making tests	Lecture, dialogue	
9. Online mathematics tutorials	Lecture, dialogue	
10. Online forums for assisting a math teacher	Lecture, dialogue	
11. Use Latex to edit mathematical texts	Lecture, dialogue	
12. Editing presentations in Latex (Beamer)	Lecture, dialogue	

| 13. Using text editors in teacher work | Lecture, dialogue | |
| 14. Summary of experiences | Lecture, dialogue | |

Bibliography
1) GeoGebra http://www.geogebra.org/en/wiki/index.php/Hungarian
2) LaTex http://www.math.bme.hu/latex/
3) Pallai Ferenc: *A táblázatkezelés alapjai a Microsoft Excel példáján*, Főiskolai jegyzet, Beregszász, 2004.
   http://mek.oszk.hu/02900/02900/02900.pdf
Szenkovits Ferenc: Számítógép a matematikaoktatásban. Online egyetemi jegyzet (CANVAS)

8.2 Seminar / laboratory	Teaching methods	Remarks
1. Using the computer in teaching of mathematics	Computer practice	
2. Excel in math lessons	Computer practice	
3. Excel in didactical administration	Computer practice	
4. GeoGebra	Computer practice	
5. GeoGebra (II)	Computer practice	
6. GeoGebra (III)	Computer practice	
7. Making presentations (Power Point, Prezi, …)	Computer practice	
8. Making tests	Computer practice	
9. Online mathematics tutorials	Computer practice	
10. Online forums for assisting a math teacher	Computer practice	
11. Use Latex to edit mathematical texts	Computer practice	
12. Editing presentations in Latex (Beamer)	Computer practice	
13. Using text editors in teacher work	Computer practice	
14. Summary of experiences	Computer practice	

Bibliography
4) Rouben Rostamian: *A Beamer Quickstart*, 2011. http://www.math.umbc.edu/~rouben/beamer/
5) *Microsoft PowerPoint Advanced Course Use Guide*
   http://www.swisd.net/technology/Instructional_Technology/Training_Support/Microsoft%20Powerpoint%20Advanced.pdf
Prezi Manual http://aprendesocial.wikispaces.com/file/view/prezi-manual.pdf/216899638/prezi-manual.pdf

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The content of the course is broadly in line with the content of computer programs taught at major universities.
- The subject will consider the presentation of the most up-to-date features provided by the computer that can be used effectively in mathematics education and administration of teacher work.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course			
10.5 Seminar/lab activities	Ability to use the computer properly	Presentation of individual papers	60 %
		Summary paper	40 %
10.6 Minimum performance standards			

➢ Skills in basic computer capabilities (EXCEL, Geogebra, Latex, Prezi ,…);
➢ Various use of computer in teaching mathematics.

Date	Signature of course coordinator	Signature of seminar coordinator
April 25, 2023	Ferenc Szenkovits	Ferenc Szenkovits

Date of approval	Signature of the head of department
April 30, 2023	András Szilárd-Károly