CONTENT

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rALGa/12	**Course name:** Algebra I

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 39s
Course method: present

Number of ECTS credits: 11

Recommended semester/trimester of the course: 1.

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 59

A	B	C	D	E	FX
8.47	6.78	18.64	18.64	22.03	25.42

Provides: prof. RNDr. Danica Studenovská, CSc.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rALGb/12	**Course name:** Algebra II

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 8

Recommended semester/trimester of the course: 2.

Course level: N

Prerequisities: ÚMV/rALGa/12

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 41

A	B	C	D	E	FX
21.95	19.51	36.59	4.88	12.2	4.88

Provides: doc. RNDr. Miroslav Ploščica, CSc.

Date of last modification: 15.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rAIM/12	**Course name:** Application of ICT into mathematics teaching

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 7

Recommended semester/trimester of the course: 5.

Course level: N

Prerequisities:

Conditions for course completion:
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Learning outcomes:
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Brief outline of the course:
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Recommended literature:
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Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
31.43	31.43	25.71	8.57	2.86	0.0

Provides: doc. RNDr. Stanislav Lukáč, PhD.

Date of last modification: 12.01.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rDDMa/12	**Course name:** Didactics of mathematics I

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 39s
Course method: present

Number of ECTS credits: 11

Recommended semester/trimester of the course: 3.

Course level: N

Prerequisities:

Conditions for course completion:
Seminar paper - 20% of assessment
Continuous assessment - 20%
Exam - 80%

Learning outcomes:
Master the basic principles and methods of teaching mathematics in secondary and primary schools.

Brief outline of the course:
1. Subject didactics of mathematics, the development of mathematics and mathematics education
2. The objectives and tasks of teaching mathematics
3. Planning in mathematics, Logical and didactic curriculum analysis, Determining the learning objectives
4. - 5. Didactic principles, methods and forms of teaching mathematics
6. - 7. Assessment of learning outcomes, creation of didactic tests
8. - 9. Math problems, creating systems tasks
10. The content and scope of the concept, sorting and classification of terms, Statements, statements of operations
11. Definitions, requirements definition, Induction and deduction, analogy
12. Mathematical sentences
13. Proofs of mathematical theorems

Recommended literature:
[1] M.Hejný a kol.: Teorie vyučovania matematiky, SPN Blava 1989,
[2] L.Frantíková,K.Hončarivová,O.Kopanev: Didaktika matematiky, UPJŠ 1982
[3] R.Fischer,G.Malle: Človek a matematika, SPN Bratislava 1992
[4] Polya, G.: How to solve it, Princeton University Press, 1957.

Course language:

Notes:

Course assessment
Total number of assessed students: 37

A	B	C	D	E	FX
13.51	27.03	35.14	21.62	2.7	0.0

Provides: doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rDDMb/12	**Course name:** Didactics of mathematics II

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 8

Recommended semester/trimester of the course: 4.

Course level: N

Prerequisities: ÚMV/rDDMa/12

Conditions for course completion:
Seminar paper - 20% of assessment
DT - 20%
Exam - 60%

Learning outcomes:
Acquire knowledge about different ways of teaching particular subjects of mathematics education.

Brief outline of the course:
1. - 4. Developing the concept of number in school mathematics
5. - 8. Session, views and functions in school mathematics
9. - 12. Geometry in the school mathematics

Recommended literature:
[1] M.Hejný a kol.: Teorie vyučovania matematiky, SPN Blava 1989,
[2] L.Frantíková,K.Hončarivová,O.Kopanev: Didaktika matematiky, UPJŠ 1982
[3] R.Fischer,G.Malle: Človek a matematika, SPN Bratislava 1992
[4] Polya, G.: How to solve it, Princeton University Press, 1957.
[5] Hejný, M., Kuřina, F.: Dítě, škola a matematika: Konstruktivistické přístupy k vyučování. Portál, Praha 2001.

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
8.57	25.71	28.57	22.86	14.29	0.0

Provides: doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rDSM/12	**Course name:** Discrete mathematics

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 8

Recommended semester/trimester of the course: 1.

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 58

A	B	C	D	E	FX
3.45	0.0	8.62	22.41	41.38	24.14

Provides: RNDr. Igor Fabrici, Dr. rer. nat.

Date of last modification: 28.10.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ rGEOa/12	**Course name:** Geometry I

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 8

Recommended semester/trimester of the course: 2.

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 41

A	B	C	D	E	FX
4.88	7.32	26.83	21.95	36.59	2.44

Provides: RNDr. Veronika Hubeňáková, PhD.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ rGEOb/12	**Course name:** Geometry II

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 8

Recommended semester/trimester of the course: 3.

Course level: N

Prerequisities: ÚMV/rGEOa/12

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 40

A	B	C	D	E	FX
10.0	7.5	12.5	22.5	37.5	10.0

Provides: RNDr. Igor Fabrici, Dr. rer. nat.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rLTM/12	**Course name:** Logic and set theory

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 8

Recommended semester/trimester of the course: 3.

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 38

A	B	C	D	E	FX
5.26	13.16	18.42	23.68	39.47	0.0

Provides: RNDr. Jaroslav Šupina, PhD.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rMANa/12	**Course name:** Mathematical analysis I

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 39s
Course method: present

Number of ECTS credits: 11

Recommended semester/trimester of the course: 1.

Course level: N

Prerequisities:

Conditions for course completion:
Written exam.

Learning outcomes:
The course provides an introductory knowledge about real numbers, sequences and functions of real variable, and a development of certain calculation skills in the field.

Brief outline of the course:
1. Basics of mathematical logic and notations.
2. Sets of real numbers - axioms of real numbers, properties of subsets of reals.
3. Real functions - basic properties (monotone, bounded, even/odd, inverse.
4. Infinite sequences - operations, boundedness, monotonicity, convergence.
5. Limit and continuity of real functions, properties of continuous functions on the interval, elementary functions.

Recommended literature:
1. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006.
2. Bruckner, A. M., Bruckner J. B., Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008.
3. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.

Course language:

Notes:

Course assessment
Total number of assessed students: 52

A	B	C	D	E	FX
5.77	5.77	23.08	23.08	21.15	21.15

Provides: doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rMANb/12	**Course name:** Mathematical analysis II

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 39s
Course method: present

Number of ECTS credits: 11

Recommended semester/trimester of the course: 2.

Course level: N

Prerequisities: ÚMV/rMANa/12

Conditions for course completion:
Written exam.

Learning outcomes:
To obtain basic knowledge in differential and integral calculus of functions of one real variable.

Brief outline of the course:
1. Derivative, differentiability and properties of differentiable functions.
2. Calculus of derivatives and its usage for functions behavior.
3. L'Hospital's rules, Taylor's polynomial.
4. Primitive function, indefinite integral.
5. Basic methods of computing indefinite integrals.
6. Rieman's definite integral, its properties and methods of computation.

Recommended literature:
1. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006.
2. Bruckner, A. M., Bruckner J. B., Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008.
3. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 39

A	B	C	D	E	FX
12.82	12.82	10.26	17.95	41.03	5.13

Provides: doc. RNDr. Ingrid Semanišinová, PhD.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rMRUa/12	**Course name:** Mathematical problem solving strategies I

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 13s
Course method: present

Number of ECTS credits: 7

Recommended semester/trimester of the course: 2.

Course level: N

Prerequisities:

Conditions for course completion:
Deepening of knowledge and skills from the use of standard methods in solving mathematical problems in the thematic areas: Equations and inequalities and their systems, Elementary functions, Sequences, Financial mathematics. Developing the ability to explain different problem-solving strategies.
Assessment is given on the basis of the results of written examinations carried out during the semester (21 points) and active participation in exercises (3 points).
Classification scale:
A: 91 % - 100 %,
B: 81 % - 90 %,
C: 71 % - 80 %,
D: 61 % - 70 %,
E: 51 % - 60 %,
FX: 0 % - 50 %.

Learning outcomes:
The student is able to explain the basic concepts and methods of solving mathematical problems selected from various areas of school mathematics. The student is able to apply the acquired knowledge in finding and using various strategies for solving problems. The student will get acquainted with typical and more demanding tasks in school mathematics and with specific problems and misconceptions that occur in their solution in the teaching of mathematics in primary and secondary school.

Brief outline of the course:
1. - 5. Solving equations, inequalities and systems of equations (equations and inequalities with absolute values, equations with parameters, irrational equations and inequalities, exponential and logarithmic equations and inequalities, trigonometric equations and inequalities).
6. - 9. Concept of function, properties of elementary functions, graphs of functions.
10. - 11. Sequences, arithmetic and geometric sequences.
12. - 13. Tasks of financial mathematics.

Recommended literature:

Kubáček, Z., Černek, P., Žabka J. a kol.: Matematika a svet okolo nás, zbierka úloh. FMFI UK Bratislava, 2008
Kopka, J.: Hrozny problémů ve školské matematice, Univerzita J. E. Purkyně, Ústí nad Labem,1999.
Lengyelfalusy, T., Kochol, M., Zábojníková, N.: Metódy riešenia matematických úloh 2. Žilinská univerzita v Žiline, 2009.
Učebnice a zbierky úloh z matematiky ZŠ a SŠ.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 39

A	B	C	D	E	FX
23.08	17.95	30.77	10.26	17.95	0.0

Provides: doc. RNDr. Stanislav Lukáč, PhD.

Date of last modification: 12.01.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rMRUb/12	**Course name:** Mathematical problem solving strategies II

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 26s
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 4.

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
48.57	11.43	11.43	17.14	11.43	0.0

Provides: doc. RNDr. Ingrid Semanišinová, PhD.

Date of last modification: 20.09.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rMRUc/12	**Course name:** Mathematical problem solving strategies III

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 13s
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 5.

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
31.43	25.71	14.29	25.71	2.86	0.0

Provides:

Date of last modification:

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rMDM/12	**Course name:** Mathematics and didactics of mathematics

Course type, scope and the method:
Course type:
Recommended course-load (hours):
Per week: Per study period:
Course method: present

Number of ECTS credits: 0

Recommended semester/trimester of the course:

Course level: N

Prerequisities: ÚMV/rDDMb/12

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
14.29	14.29	40.0	11.43	20.0	0.0

Provides:

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rPST/12	**Course name:** Probability and statistics

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: Per study period: 39s
Course method: present

Number of ECTS credits: 11

Recommended semester/trimester of the course: 4.

Course level: N

Prerequisities: ÚMV/rMANb/12

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
8.57	14.29	34.29	17.14	25.71	0.0

Provides: doc. RNDr. Daniel Klein, PhD.

Date of last modification: 14.04.2022

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rSDM/12	**Course name:** Seminar on didactics of mathematics

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 39s
Course method: present

Number of ECTS credits: 11

Recommended semester/trimester of the course: 5.

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
40.0	25.71	14.29	17.14	2.86	0.0

Provides: doc. RNDr. Ingrid Semanišinová, PhD.

Date of last modification:

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ rPDP/12	**Course name:** Teaching practice
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week: Per study period:** 20s **Course method:** present	
Number of ECTS credits: 6	
Recommended semester/trimester of the course: 5.	
Course level: N	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 35

abs	n
100.0	0.0

Provides: doc. RNDr. Dušan Šveda, CSc., doc. RNDr. Ingrid Semanišinová, PhD.
Date of last modification:
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ rZPM/12	**Course name:** Thesis
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 10	
Recommended semester/trimester of the course: 5.	
Course level: N	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 35	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ rOZP/12	**Course name:** Thesis defence

Course type, scope and the method:
Course type:
Recommended course-load (hours):
Per week: Per study period:
Course method: present

Number of ECTS credits: 0

Recommended semester/trimester of the course:

Course level: N

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
14.29	28.57	37.14	14.29	5.71	0.0

Provides:

Date of last modification:

Approved: