Course descriptions

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STATE EXAM DESCRIPTION

Academic year: 2026/2027	
University: Comenius University Bratislava	
Faculty: Faculty of Arts	
Course ID: FMFI.KDMFI/2-UMA-951/15	**Course title:** Didactics of Mathematics
Number of credits: 3	
Educational level: II.	
Learning outcomes: The graduate will be ready to perform the tasks assigned to a beginning math teacher.	
Class syllabus: State final examination in the scope of master's study of mathematics didactics. The student should be able to include the task in the thematic unit, identify preconceptions and the necessary knowledge to solve it, determine the skills that the student will learn on it, respectively. concepts that allows you to discover. The student will demonstrate a model solution, point out problematic places in the solution with which students could have problems and how he would react to them as a teacher. After completing the task, the student should outline the activities that would follow and how he would close the lesson.	
State exam syllabus: 1. Logic and sets Logic (propositions, operations with propositions, logical conjunctions and quantifiers), sets (number of elements of unification of two and three sets, De Morgan's formulas for complement of unification and intersection), proofs and conclusions (direct and indirect proofs, proofs by dispute, mathematical induction, mode ponens, modus tollens). 2. Numbers, variables, numerical fields Binomial theorem and Pascal's triangle, derivation of formulas a^n-b^n (including geometric interpretation for n = 2 and n = 3). 3. Number theory Number of prime numbers, relation of largest common divisor and smallest common multiple of two numbers, prime decomposition number of number divisors, irrationality of the square root of a prime number, derivation of divisibility criteria 4, 5, 10, 100, 3, 6, 9. 4. Equations, inequalities and their system Geometric interpretation of a system of two linear equations with two unknowns, conditions for the existence of solutions, equivalent and non-equivalent modifications and their relation to basic functions. 5. Function and its properties Basic transformations of function graphs, definitions of basic properties of functions (domain of definition, domain of values, increasing and decreasing, extrema and local extrema - sharp and fuzzy, examples), inverse function and its graph. 6. Linear and quadratic function Significance of coefficients k and q in the formula of the linear function y = kx + q, geometric meaning of the directive, quadratic function (derivation of the relation for calculating roots, coordinates of the vertex of the parabola . 7. Arithmetic and geometric sequence, infinite (geometric) series Basic relationship management.	

8. Polynomials, power functions and linear polynomials
Root factors and their relation to the roots of a polynomial equation, square roots as inverse functions to power functions, definition of a rational power of a positive number, linear polynomial function (derivation of asymptote equations and conditions why $ad \neq bc$).
9. Exponential and logarithmic functions
Exponential functions (definition of power for natural, integer and rational exponent, basic properties of exponential function and their justification, simple and compound interest, regular deposits and withdrawals, loan repayments), definition of logarithm, rules for calculating logarithms and their connection with creation of exponential function , relationships between logarithms with different bases.
10. Trigonometric functions
Definition of trigonometric functions in a right triangle and using a unit circle and their mutual relation, values of trigonometric functions for basic angles, accounting formulas, formulas for double and half angle, relations for sum and difference of trigonometric functions.
11. Triangle
Consistency and similarity of triangles, Pythagorean and Euclidean theorems, different relations for the content of a triangle (Heron's formula, using sinus of angle, radius of inscribed and described circle), derivation of statements about intersections of angles, axes of sides, lines, heights, sine and cosine theorem.
12. Parallelograms and trapezoid
Derivation of formulas for the content of parallelograms and trapezoids, derivation of some of their properties the diagonals of a quadrilateral with sides a, b, c, d are perpendicular to each other just when $a2 + c2 = b2 + d2$).
13. Circle
Formula for the content of a circle and a paragraph, size in degrees and radians, center and circumferential angle, Tales' theorem, estimation of the number π using written and described n-gons, related to trigonometric functions.
14. Analytical geometry in the plane and in space
Vectors and operations with them, scalar product and its relation to the angle of two vectors, analytical expression of a line and a plane, various equations of a line, derivation of coordinates of the center of a line and a dividing line in a given ratio, center of a triangle, size of a line, derivation of a formula lines and from the plane, angle of two lines (using scalar product, using directives), angle of line and plane, normal vector.
15. Sets of points of given properties and their analytical expression
Derivation of "basic" sets of points of a given property (including a set of points from which a line can be seen at a given angle).
16. Conic sections
Definitions of conic sections (circle, ellipse, hyperbola and parabola) as sets of points of given properties and derivation of their equations.
17. Suitable and similar representations, construction tasks
Examples of design tasks solved by a combination of calculation and construction, the use of sets of points of given properties in design tasks, examples of design tasks solved using identical and similar representations.
18. Basic ways of displaying space in a plane
Basic properties of parallel projection, hint of their justification, linear perspective and its basic properties, layers and their basic properties.
19. Linear formations in space - positional problems
Use of basic statements about the intersections of a pair of parallel ones planes with another plane when constructing sections of bodies by a plane.

20. Solids
Cavalieri's principle and its application e.g. to calculate the volume of a sphere, a formula for calculating the volume of pyramids and cones, the idea of justifying the formula for the surface of a sphere.
21. Combinatorics
Combinatorial identities, basic combinatorial rules (sum, product), typical examples of their use, derivation of formulas for the number of variations, combinations, permutations (also with repetition), combinatorial derivation of basic relations in the Pascal triangle (symmetry, sum of minor elements).
22. Probability
Statistical and Laplace definition of probability, dependent and independent events, calculation of probability for independent events, geometric probability and an example of its use.
23. Statistics
Statistical set and position measures (modus, median, mean), basic properties of the arithmetic mean (sum of deviations from the mean is equal to 0), various possibilities of describing the "scatter" of the set, Chebyshev's inequality.

Languages necessary to complete the course:
slovak, english

Last change: 17.03.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-104/22	Didactics of Mathematics (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: II., N

Prerequisites:

Course requirements:
Continuous assessment: group homework, reading of scientific articles, discussion of articles and the specified topic, group work on a lesson plan described for each group in the assignment.
The student must obtain at least 50% of the continuous assessment and each assignment must be evaluated with a non-zero number of points.
Final evaluation: oral exam, individual preparation of a lesson plan and its presentation
Indicative assessment scale: A 94%, B 86%, C 79%, D 70%, E 60%, Fx <60%
Scale of assessment (preliminary/final): 60/40

Learning outcomes:
The student will gain an overview of didactic theories, will be able to critically evaluate them and use the appropriate methods and forms. Through activities at the seminar, they will acquire modern teaching techniques that are a prevention of formal knowledge and misconceptions in mathematics. The study of scientific and research articles and the subsequent discussion or authentic experience will give graduates a better insight into the issues of inclusive school, creating preparations for the lesson (or sequence) and asking "good questions".

Class syllabus:
The language of mathematics, its historical development and didactic significance. A parallel between phylogeny and ontogeny of mathematical thinking. Conceptual and cognitive process in mathematics. Principles, means and forms of teaching in mathematics. Objectives of the teaching process in mathematics. Learning theories. Lesson preparation and its starting points. Resources and their use in preparation, during teaching in evaluation. Hypothetical learning trajectories.

Recommended literature:
Dítě, škola a matematika: Konstruktivistické přístupy k vyučování / Milan Hejný, František Kuřina. Praha : Portál, 2001
Moderní vyučování / George Petty Praha : Portál, 1993
Dvacet pět kapitol z didaktiky matematiky / Milan Hejný, Jarmila Novotná, Naďa Stehlíková (Eds.) Praha, 2004

Komunikácia v inkluzívnej škole / Marta Horňáková. Bratislava: Univerzita Komenského v Bratislave. 2017
Elementary and Middle School Mathematics: Teaching Developmentally. / John A. Van de Walle, Karen Karp, Jennifer M. Bay-Williams. Pearson.
Theory of didactical situations in mathematics /Guy Brousseau. Springer, 1997
Textbook explanations: Modes of reasoning in 7th grade Israeli mathematics textbooks. / Silverman B, and Even R., CERME 9. Charles University in Prague. Faculty of Education. 2015, pp.205-212
Od obsahu vzdělávání k žákově znalosti: Kritická místa na cestě do školy a ze školy / T. Janik, Arnica 8, 2018, 1–8. Západočeská univerzita v Plzni, Plzeň.
Refining teacher design capacity: Mathematics teachers' interactions with digital curriculum resources / Birgit Pepin, Ghislaine Gueudet, Luc Trouche. In. ZDM Mathematics Education, 2017, 49, 799–812 https://doi.org/10.1007/s11858-017-0870-8
Own electronic materials published via the subject's website (eg course in LMS Moodle)

Languages necessary to complete the course:
slovak, englihs

Notes:

Past grade distribution
Total number of evaluated students: 229

A	B	C	D	E	FX
85,15	9,61	3,49	0,87	0,0	0,87

Lecturers: doc. PaedDr. Mária Slavíčková, PhD.

Last change: 15.06.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-105/22	Didactics of Mathematics (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 2.

Educational level: II., N

Prerequisites:

Course requirements:
Continuous assessment: individual preparation of a lesson plan and its placement in the thematic plan, microteaching, preparation of written tests (2 equal groups), peer assessment, didactic analysis of teaching texts, reading and discussion of scientific articles.
The student must obtain at least 50% of the continuous assessment and each assignment must be evaluated with a non-zero number of points.
Exam: written with oral consultation
Indicative assessment scale: A 94%, B 86%, C 79%, D 70%, E 60%, Fx <60%
Scale of assessment (preliminary/final): 60/40

Learning outcomes:
The graduate of the course is acquainted with the goals of mathematics education at lower secondary school, with adequate teaching methods, forms and means, with ways of introducing selected mathematical concepts, is ready for his work in school and out of school, can transfer to pedagogical practice knowledge and skills acquired in individual professional disciplines. The study of scientific and research articles with a subsequent discussion or an authentic experience will give graduates a better insight into the cognitive and affective components of mathematics teaching at lower secondary school.

Class syllabus:
Specifics of teaching mathematics for individual topics and concepts of mathematics at lower secondary school: educational goals, activities, the assumption of the development of student understanding in the context of educational activities and the creation of a hypothetical trajectory. Selection of adequate methods, forms and age-appropriate activities for teaching mathematics at the second stage of primary school. Integration of digital technologies into the teaching of mathematics also in order to support argumentation, reasoning, and building a mathematical culture (correctness of concepts, procedures, arguments, etc.).

Recommended literature:
Dítě, škola a matematika: Konstruktivistické přístupy k vyučování / Milan Hejný, František Kuřina. Praha : Portál, 2001

Moderní vyučování / Geoffrey Petty. Praha : Portál, 1993
Is this a coincidence? The role of examples in fostering a need for proof / Buchbinder, O., Zaslavsky, O., ZDM Mathematics Education 43, 269 (2011). https://doi.org/10.1007/s11858-011-0324-7
Elementary and Middle School Mathematics: Teaching Developmentally. / John A. Van de Walle, Karen Karp, Jennifer M. Bay-Williams. Pearson. 2012
Strategies for Teaching Fractions: Using Error Analysis for Intervention and Assessment / David B. Spangler.
Dvacet pět kapitol z didaktiky matematiky / Milan Hejný, Jarmila Novotná, Naďa Stehlíková (Eds.) Praha, 2004
Dostupné učebnice Matematiky pre 5. – 9. ročník ZŠ a nižšie ročníky osemročných gymnázií / Ján Žabka, Pavol Černek / Ondrej Šedivý a kol. / Soňa Čeretková a kol. / Milan Hejný a kol.
Nový Pomocník z matematiky (5. – 9. ročník) / Iveta Kohanová a kol.
Own electronic materials published via the subject's website (eg course in LMS Moodle)

Languages necessary to complete the course:
slovak, enghlish

Notes:

Past grade distribution
Total number of evaluated students: 194

A	B	C	D	E	FX
65,46	17,53	12,37	3,09	1,03	0,52

Lecturers: doc. PaedDr. Mária Slavíčková, PhD., doc. PaedDr. Peter Vankúš, PhD.

Last change: 17.06.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-106/22	Didactics of Mathematics (3)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 4 **per level/semester:** 56
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 3.

Educational level: II., N

Prerequisites:

Course requirements:
Continuous assessment: individual preparation of a lesson plan and its placement in the thematic plan, microteaching, preparation of written tests (2 equal groups), peer assessment, didactic analysis of teaching texts, reading and discussion of scientific articles.
The student must obtain at least 50% of the continuous assessment and each assignment must be evaluated with a non-zero number of points.
Exam: written with oral consultation
Indicative assessment scale: A 94%, B 86%, C 79%, D 70%, E 60%, Fx <60%
Scale of assessment (preliminary/final): 60/40

Learning outcomes:
The graduate of the course is acquainted with the goals of mathematics education at upper secondary schools, with adequate teaching methods, forms and means, with ways of introducing selected mathematical concepts, is ready for his work at school and outside school, can transfer to pedagogical practice knowledge and skills acquired in individual professional disciplines. Specially, the graduate of the course will gain an overview of didactic procedures for teaching mathematics suitable for the transition from lower to upper secondary school and in the first years of upper secondary school.

Class syllabus:
Specifics of the last year of lower secondary school, transition to the 1st year of upper secondary school. Appropriate activities of teaching mathematics for individual topics of the first and second year of upper secondary school: educational goals, activities, the assumption of the development of student understanding in the context of educational activities and the creation of their hypothetical scenario. Selection of adequate methods, forms and cognitively appropriate activities. Integration of digital technologies into the teaching of mathematics also in order to support argumentation, reasoning, and building a mathematical culture (correctness of concepts, procedures, arguments, etc.).

Recommended literature:

Dítě, škola a matematika: Konstruktivistické přístupy k vyučování / Milan Hejný, František Kuřina. Praha : Portál, 2001
Moderní vyučování / Geoffrey Petty Praha : Portál, 1993
Dvacet pět kapitol z didaktiky matematiky / Milan Hejný, Jarmila Novotná, Naďa Stehnlíková (Eds.) Praha, 2004
Thinking mathematically / John Mason, Leone Burton, Kaye Stacey. Pearson, 2010
Explanation and Proof in Mathematics. Philosophical and Educational Perspectives / G. Hanna, H. N. Jahnke, H. Pulte (Eds.), Springer 2010
Matematika a svet okolo nás : Zbierka úloh / Zbyněk Kubáček ... [et al.]. Bratislava : Pavol Cibulka, 2008
Učebnice matematiky pre gymnáziá / Zbyněk Kubáček
Matematika : 1 : zbierka úloh pre stredné školy / Iveta Kohanová ... [et al.]. Bratislava : Orbis Pictus Istropolitana, 2011
Own electronic materials published via the subject's website (eg course in LMS Moodle)

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 193

A	B	C	D	E	FX
66,32	19,69	9,33	2,07	2,59	0,0

Lecturers: doc. PaedDr. Mária Slavíčková, PhD., doc. PaedDr. Peter Vankúš, PhD.

Last change: 15.06.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-107/22	Didactics of Mathematics (4)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: individual preparation of a lesson plan and its placement in the thematic plan, microteaching, preparation of written tests (2 equal groups), peer assessment, didactic analysis of teaching texts, reading and discussion of scientific articles.
The student must obtain at least 50% of the continuous assessment and each assignment must be evaluated with a non-zero number of points.
Exam: written with oral consultation
Indicative assessment scale: A 94%, B 86%, C 79%, D 70%, E 60%, Fx <60%
Scale of assessment (preliminary/final): 60/40

Learning outcomes:
The graduate of the course will gain an overview of didactic procedures in the teaching of mathematics at upper secondary school and in the preparation of students for the school-leaving examination in mathematics, in extracurricular activities. The described activities of the educational process are focused on the creative use of knowledge from mathematics acquired during the study.

Class syllabus:
Selected activities for teaching mathematics on the topics of the third and fourth year of high school (for graduates and non-graduates): educational goals, activities, the assumption of the development of student understanding in the context of educational activities and the creation of hypothetical trajectories.

Recommended literature:
Učebnice matematiky pre gymnáziá / Zbyněk Kubáček
Matematika : 1 : zbierka úloh pre stredné školy / Iveta Kohanová ... [et al.]. Bratislava : Orbis Pictus Istropolitana, 2011
Seminár z matematiky, časti 1 – 3 / Zbyněk Kubáček, Ján Žabka
Explanation and Proof in Mathematics. Philosophical and Educational Perspectives / G. Hanna, H. N. Jahnke, H. Pulte (Eds.), Springer 2010
Thinking mathematically / John Mason, Leone Burton, Kaye Stacey. Pearson, 2010
Maturitné testy z matematiky /nucem.sk

Own electronic materials published via the subject's website (eg course in LMS Moodle)

Languages necessary to complete the course:
slovak, english

Notes:

Past grade distribution
Total number of evaluated students: 52

A	B	C	D	E	FX
82,69	11,54	3,85	1,92	0,0	0,0

Lecturers: doc. PaedDr. Mária Slavíčková, PhD., doc. PaedDr. Peter Vankúš, PhD.

Last change: 17.06.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KMANM/2-UMA-259/22	Didactics of Mathematics in Praxis (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: II.

Prerequisites:

Course requirements:
Ongoing evaluation: homeworks
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Students will be prepared for the situations they will experience in the reality of teaching mathematics at the second primary education stage. They will know various teaching techniques, methods of interpretation, working with the textbook as well as supplementary materials, various forms of written and oral examinations, as well as methods of correcting children's solutions. They will learn to distinguish which statements help students and which harms them.

Class syllabus:
Demonstrations of a transmissive and constructivist way of leading a lesson. Error preview. Textbook as a teacher's aid. Textbook as a student aid. (Topics will be documented in the curriculum of the second primary education stage).

Recommended literature:
Aj geometria naučila človeka myslieť / Milan Hejný. Bratislava : Slovenské pedagogické nakladateľstvo, 1990
Analýza řešení slovních úloh : Kapitoly z didaktiky matematiky. / Jarmila Novotná.. Praha : Univerzita Karlova,, 2000.
Dítě, škola a matematika : Konstruktivistické přístupy k vyučování / Milan Hejný, František Kuřina. Praha : Portál, 2001
Teória vyučovania matematiky 2 / Milan Hejný ... [et al.]. Bratislava : Slovenské pedagogické nakladateľstvo, 1990

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution Total number of evaluated students: 119					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. RNDr. Zbyněk Kubáček, CSc., Mgr. Lucia Šimová					
Last change: 15.03.2022					
Approved by: prof. Mgr. Michal Chabada, PhD.					

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KMANM/2-UMA-260/15	Didactics of Mathematics in Praxis (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:
Ongoing evaluation: homeworks
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Students will be prepared for the situations they will experience in the school reality of teaching mathematics in secondary school. They will know various teaching techniques, methods of interpretation, working with the textbook as well as supplementary materials, various forms of written and oral examinations, as well as methods of correcting children's solutions. They will learn to distinguish which statements help students and which harms them.

Class syllabus:
Evaluation and classification. Preparations, analysis and corrections of written works and tests (topics will be documented in the secondary school curriculum).

Recommended literature:
Aj geometria naučila človeka myslieť / Milan Hejný. Bratislava : Slovenské pedagogické nakladateľstvo, 1990
Dítě, škola a matematika : Konstruktivistické přístupy k vyučování / Milan Hejný, František Kuřina. Praha : Portál, 2001
Stavba planimetrie / Ján Gatial, Milan Hejný. Bratislava : Slovenské pedagogické nakladateľstvo, 1973
Teória vyučovania matematiky 2 / Milan Hejný ... [et al.]. Bratislava : Slovenské pedagogické nakladateľstvo, 1990
Analýza řešení slovních úloh : Kapitoly z didaktiky matematiky. / Jarmila Novotná.. Praha : Univerzita Karlova, 2000.

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 81

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc., Mgr. Lucia Šimová

Last change: 15.03.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KAG/2-UMA-164/22	Introduction to Graph Theory

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KAG+KI/2-UMA-164/15

Course requirements:
Peliminary evaluation: homeworks
Exam: oral
Indicative evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Students will get acquainted with basic concepts of graph theory. At the same time, they will learn to transform different types of problems into graph theory problems and solve them algorithmically.

Class syllabus:
Some basic concepts and results from graph theory, searching graphs reachability and connectivity, trees and spanning trees, planar graphs, hard problems in graph theory.

Recommended literature:
Grafové algoritmy / Ján Plesník. Bratislava : Veda, 1983
Grafy a jejich aplikace / Jiří Demel, Academia, 2002
Konec záhady hlavolamů / Stanislav Vejmola, SPN 1989

Languages necessary to complete the course:
slovak,english

Notes:

Past grade distribution
Total number of evaluated students: 8

A	B	C	D	E	FX
25,0	12,5	0,0	37,5	25,0	0,0

Lecturers: doc. RNDr. Martin Mačaj, PhD.

Last change: 14.03.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-218/11	Mathematical Background of Music

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: individual work of students, project
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
By completing the course, the student will deepen and combine knowledge of basic mathematics courses in bachelor's studies in the study program mathematics teacher preparation in combination, build on knowledge of mathematics didactics and broaden horizons in the context of creating lessons using interdisciplinary relationships.

Class syllabus:
Selected parts of music theory from the point of view of mathematics, connection to mathematics from lower secondary school to university, related to the teaching of mathematics, preparation of interdisciplinary projects and activities for direct inclusion in teaching and leisure activities.

Recommended literature:
Mathematics and Art / Bruter (Ed.), Springer
Hudba ako zdroj námetov vo vyučovaní matematiky / M. Slavíčková, In. Matematika, informatika, fyzika. Roč. 21, č. 38 (2012), s. 3-8. ISSN 1335-7794
Chladniho obrazce / E. Dubajová, (časť diplomovej práce), dostupné na https://wilma.sk/dokumenty/ef0ed9b0f05bd757ddcf91b96794b0cf/show
The Science of Sound / T. D. Rossing, R. F. Moore, P. A. Wheeler, 3. vyd., Pearson, 2014
Music: A Mathematical Offering / D. Benson, Department of Mathematics, Meston Building, University of Aberdeen, UK. 2008

Languages necessary to complete the course:
slovak, english

Notes:
To complete the course, it is recommended to have at least a basic knowledge of music theory (min. of 2 years music school)

Past grade distribution
Total number of evaluated students: 19

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PaedDr. Mária Slavíčková, PhD.

Last change: 17.03.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-257/15	Methods for Solving Mathematical Tasks (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: Homework - individual work of students
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
After completing the course, students will master methods of solving various mathematical tasks from the curriculum of lower and upper secondary school and will be able to apply these methods in the teaching of mathematics.

Class syllabus:
Generally about solving mathematical tasks, basic methods of solving mathematical tasks –patterns identification and conclusion making, figural approaches to solving, formulating equivalent problems, modifying the problem, choosing effective marking, using symmetry, dividing the problem into several special cases, reverse procedure, indirect procedure, use of parity, mathematical induction, Dirichlet (Pigeon) principle.

Recommended literature:
Metódy riešenia matematických problémov / L. C. Larson ; from the American original translated by Jaroslav Smítal. Bratislava : Alfa, 1990
Metódy riešenia matematických úloh / Tomáš Hecht, Zita Sklenáriková. Bratislava : Slovenské pedagogické nakladateľstvo, 1992
Tasks from Mathematical Olympiad and Mathematical correspondence seminars

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution Total number of evaluated students: 198					
A	B	C	D	E	FX
89,39	4,55	1,01	0,51	0,51	4,04
Lecturers: doc. PaedDr. Peter Vankúš, PhD., Mgr. Emília Miťková, PhD.					
Last change: 17.03.2022					
Approved by: prof. Mgr. Michal Chabada, PhD.					

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-258/15	Methods for Solving Mathematical Tasks (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: Homework - individual work of students
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
After completing the course, students will master methods of solving various mathematical tasks from the curriculum of lower and upper secondary school and will be able to apply these methods in the teaching of mathematics.

Class syllabus:
Equations, inequalities, systems of equations and inequalities, sets of points of given properties, analytical geometry, construction tasks, planimetric tasks, stereometric tasks, inequalities in geometry, number theory, diophantic equations, combinatorial geometry, sequences, recurrent relationships, trigonometry and complex numbers, probability.

Recommended literature:
Metódy riešenia matematických problémov / L. C. Larson ; from the American original translated by Jaroslav Smítal. Bratislava : Alfa, 1990
Metódy riešenia matematických úloh / Tomáš Hecht, Zita Sklenáriková. Bratislava : Slovenské pedagogické nakladateľstvo, 1992
Tasks from Mathematical Olympiad and Mathematical correspondence seminars

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 114

A	B	C	D	E	FX
94,74	2,63	0,88	0,0	0,0	1,75

Lecturers: Mgr. Emília Miťková, PhD., doc. PaedDr. Peter Vankúš, PhD.
Last change: 17.03.2022
Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-253/22	Problematic Parts of Secondary School Mathematics

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KDMFI/2-UMA-253/19

Course requirements:
Continuous assessment: output in front of the board, seminar work
Indicative assessment scale: A 94%, B 86%, C 79%, D 70%, E 60%, Fx <60%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
The course will follow on from the compulsory course Didactics of Mathematics 2 and will deal in depth with specific adequate methods, forms and age-appropriate activities for teaching problematic units in mathematics at lower secondary school.

Recommended literature:
Dostupné učebnice Matematiky pre 5. – 9. ročník ZŠ a nižšie ročníky osemročných gymnázií / Ján Žabka, Pavol Černek / Ondrej Šedivý a kol. / Soňa Čeretková a kol. / Milan Hejný a kol.
Nový Pomocník z matematiky (5. – 9. ročník) / Iveta Kohanová a kol.
Dítě, škola a matematika: Konstruktivistické přístupy k vyučování / Milan Hejný, František Kuřina. Praha : Portál, 2001
Matematické cítenie / Jo Boalerová. Bratislava : Tatran, 2016
Moderní vyučování / Geoffrey Petty. Praha : Portál, 1993
Dvacet pět kapitol z didaktiky matematiky / Milan Hejný, Jarmila Novotná, Naďa Stehlíková (Eds.) Praha, 2004
Own electronic materials published via the subject's website (eg course in LMS Moodle)

Languages necessary to complete the course:
slovak, english

Notes:

Past grade distribution Total number of evaluated students: 32					
A	B	C	D	E	FX
93,75	0,0	0,0	0,0	0,0	6,25
Lecturers: doc. PaedDr. Peter Vankúš, PhD., Mgr. Jana Havlíčková, PhD.					
Last change: 14.03.2022					
Approved by: prof. Mgr. Michal Chabada, PhD.					

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KAG/2-UMA-115/23	Selected Parts of Algebra and Theoretical Arithmetic (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KAG/2-UMA-115/22

Course requirements:
Homework assignments
Grading: A 90%, B 80%, C 70%, D 60%, E 50%, Fx < 50 %
Scale of assessment (preliminary/final): Semester 100% (homework assignments)

Learning outcomes:
Students will gain familiarity with axiomatic definitions and applications of some algebraic structures, such as groups and fields. They will be able to prove basic results about sets operations and to verify whether some commonly used sets are countable or uncountable.

Class syllabus:
Selected topics from the following areas:
Introduction to set theory. Operation with sets, functions. Cardinality, inequality between cardinal numbers, operations with cardinal numbers and their properties. Cantor's theorem. Countable and uncountable sets, applications.
Basics of group theory. Symmetry groups, permutation groups, abstract notion of a group. Subgroups, cyclic groups. Cosets and Langrange's theorem. Homomorphisms, normal subgroups, quotient groups.
Rings and fields. Modular arithmetic, polynomial rings. Construction of Q from Z, C from R, Q(sqrt(p)) from z Q. Field extensions, finite fields, impossibility of some geometric constructions.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 165

A	B	C	D	E	FX
75,76	10,91	8,48	2,42	2,42	0,0

Lecturers: RNDr. Martin Sleziak, PhD., prof. RNDr. Pavol Zlatoš, PhD.
Last change: 29.05.2023
Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KAG/2-UMA-116/24	Selected Parts of Algebra and Theoretical Arithmetic (2)

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:
Homework assignments, final exam
Grading: A 90%, B 80%, C 70%, D 60%, E 50%, Fx < 50 %
Scale of assessment (preliminary/final): Semester 25% (homework assignments)/Final exam 75%

Learning outcomes:
Students will gain familiarity with examples of mathematical objects (symmetries, permutations, linear maps) which can be described by using an axiomatic approach. They will be able to use these definitions and deduce basic properties, analyze examples and identify various algebraic structures, such as groups and fields.

Class syllabus:
Selected topics from the following areas:
Examples of permutation groups, braid groups, groups of symmetries and matrix groups. Description by generators, relations, consequences of non-commutativity. Abstract notion of a group. Subgroups, orders, cyclic groups. Cosets and Langrange's theorem. Homomorphisms, normal subgroups, quotient groups. Group actions, stabilizers, orbits. Symmetries of Platonic solids.
Rings, fields and integral domains. Modular arithmetic, polynomial rings. Ideals, ring factorization, homomorphisms of rings. Field extensions. Rings with unique factorization, Gauss primes, etc.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 104

A	B	C	D	E	FX
64,42	14,42	13,46	3,85	3,85	0,0

Lecturers: Mgr. Martin Niepel, PhD., prof. RNDr. Pavol Zlatoš, PhD.

Last change: 09.09.2024
Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KAG/2-UMA-207/22	Selected Parts of Geometry (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: homework (50%).
Final assessment: written exam (50%).
At least half of the points from the continuous assessment must be admitted to the exam.
Grading: A [100-90], B (90-80], C (80-70], D (70-60], E (60-50], Fx (50-0].
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Course graduate:
1. Knows basic affine and metric properties of conic sections in the Euclidean plane and quadratic surfaces in the Euclidean three-dimensional space, using mainly the analytical method.
2. Is aware of the crucial role of polarity in the theory of quadratic forms. Is informed about quadrics in the Euclidean space of any dimension.
3. Is acquainted with synthetic constructions of real regular conic sections and practical applications and interpretations of their properties.

Class syllabus:
1. Conics in the Euclidean plane: definition and representation; asymptotic vectors; regular, singular point; the center of the conic; polarity; tangents; principal vectors; axes and vertices of the conics; affine and metric classification of conics; focal points and directrices. Applications.
2. Fundamentals of the theory of quadratic surfaces in the Euclidean three-dimensional space: regular linear and non-linear quadratic surfaces; singular quadratic surfaces; quadratic surfaces such as cylindrical surfaces over the conic sections; quadratic surfaces obtained by affine transformation of a conic. Intersection points of a line (plane) with a quadratic surface.

Recommended literature:
Geometria 1 : Pre študentov matematiky učiteľského štúdia na univerzitách a pedagogických fakultách / Milan Hejný, Valent Zaťko, Pavel Kršňák. Bratislava : Slovenské pedagogické nakladateľstvo, 1985
Analytická teorie kuželoseček a kvadrik / Josef Janyška, Anna Sekaninová. Brno : Masarykova univerzita, 2001

Analytická geometria kužeľosečiek / Leo Boček. Bratislava : Slovenské pedagogické nakladateľstvo, 1978

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 169

A	B	C	D	E	FX
23,08	18,34	28,99	13,61	8,28	7,69

Lecturers: Mgr. Marcel Makovník, PhD., doc. RNDr. Pavel Chalmovianský, PhD.

Last change: 04.07.2023

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KAG/2-UMA-208/24	Selected Parts of Geometry (2)

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:
The student can get 100% for written homeworks.
Grading: A (100-91), B (90-81), C (80-71), D (70-61), E (60-51), Fx (50-0).
Scale of assessment (preliminary/final): Preliminary assessment 100% for written homework assignments.

Learning outcomes:
By completing the course, the student will gain deeper knowledge about the properties of curves and surfaces. They will become familiar with their fundamental applications in practical disciplines such as modern design, engineering, construction, cartography, and art.

Class syllabus:
Gear wheels, milling, 3D printing, exceptional structures, maps, typography, painting, and sculpture from the perspective of objects, methods, and representations in differential geometry.

Recommended literature:
Helmut Pottmann, Andreas Asperl, Michael Hofer, Axel Kilian, Daril Bentley: Architectural Geometry, Bentley Institute Press, 2007
Lectures on classical differential geometry / Dirk J. Struik. Cambridge : Addison-Wesley Press, 1950
Elektronické učebné texty predmetu

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 135

A	B	C	D	E	FX
23,7	18,52	25,19	14,81	9,63	8,15

Lecturers: doc. RNDr. Pavel Chalmovianský, PhD.

Last change: 09.09.2024
Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KMANM/2-UMA-111/22	Selected Parts of Mathematical Analysis (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 28
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: homework
Final assessment: paper
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
Students will master the basic analytical methods of investigation and modeling, when the action is affected by two variables. They will be able to estimate the shape of the graph of the functions of two variables.

Class syllabus:
Examples of quantities whose change depends on several variables. Graphs of some typical functions of two variables. Space R ^ 2 and R ^ 3. Sequence convergence in R ^ 2. Limit and continuity of a function of two variables. Partial derivation. Extremes of a function of two variables.

Recommended literature:
Diferenciální počet / Vojtech Jarník. Praha : Academia, 1984
Zbierka úloh z vyššej matematiky : 3.časť / Jozef Eliaš, Ján Horváth, Juraj Kajan. Bratislava : Slovenské vydavateľstvo technickej literatúry, 1967

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 184

A	B	C	D	E	FX
51,63	16,85	15,22	10,33	5,98	0,0

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc., Mgr. Jana Havlíčková, PhD.

Last change: 14.03.2022
Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KMANM/2-UMA-112/24	Selected Parts of Mathematical Analysis (2)

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 2.

Educational level: II.

Prerequisites:

Antirequisites: FMFI.KMANM/2-UMA-112/15

Course requirements:
Continuous assessment: homework
Final evaluation: test
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
Students will expand their knowledge of the function of two variables. Using the double integral, they will be able to calculate different areas, volumes, lengths of curves.

Class syllabus:
Areas of type [x, y] and [y, x] and a formula for integrating the function of two variables in these areas. Calculation of areas, volumes and lengths of curves.

Recommended literature:
Integrální počet / Vojtech Jarník. Praha : Československá akademie věd, 1976
Zbierka úloh z vyššej matematiky : 4.časť / Jozef Eliaš, Ján Horváth, Juraj Kajan, Robert Šulka. Bratislava : Alfa, 1979
Matematika III, Zbierka riešených úloh z integrálneho počtu funkcie viac premenných a krivkových integrálov / Dillingerová M., Feťková J., Híc P., Tóthová M. Alfa : Bratislava 1990

Languages necessary to complete the course:
slovak, english

Notes:
For successful completion, it is desirable to first complete the course Selected Parts of Mathematical Analysis.

Past grade distribution
Total number of evaluated students: 4

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc., Mgr. Jana Havlíčková, PhD.

Last change: 09.09.2024

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-283/22	Selected Topics in Teaching of Mathematics

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:
Continuous assessment: homework (30 points)
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
After completing the course, the student knows the theories of various forms of teaching, some of which he has tried. He knows the root causes of the problems that students with a planar representation of space have - the question "Why don't students see it?". Can carry out various additional activities that develop students' mathematical competencies, e.g. competitions, games, fun afternoon.

Class syllabus:
Basic features and historical development of constructivist teaching. Piaget, Kohlberg, Vygotsky, Bachelard. Creation of teaching material. Group and cooperative teaching. Didactic game, its use and creation. Stereometry cubes with paper scissors and glue. Stereometry of a circle, folding "other" origami. Project teaching, project assignment (to whom, what, how, when, for what time). Problem teaching, design of own problem teaching. Outdoor school - from organization to implementation. Mathematical afternoon at school in nature, creation of a program "out". Mathematical competitions - various forms of competitions, difficulty assessment and task creation.

Recommended literature:
Teória vyučovania matematiky 2 / Milan Hejný ... [et al.]. Bratislava : Slovenské pedagogické nakladateľstvo, 1990
Učebné materiály pre vyučovanie matematiky / výber zostavili a preložili Monika Dillingerová, Lilla Koreňová, Peter Vankúš. Bratislava : Knižničné a edičné centrum FMFI UK, 2009
Geometrické úlohy z matematickej olympiády ZŠ / Monika Dillingerová. Bratislava : Metodicko-pedagogické centrum, 2005

Languages necessary to complete the course:
slovak, english

Notes:					
Past grade distribution Total number of evaluated students: 128					
A	B	C	D	E	FX
60,16	21,88	7,81	3,91	3,13	3,13
Lecturers: doc. PaedDr. Peter Vankúš, PhD., RNDr. Monika Dillingerová, PhD.					
Last change: 15.06.2022					
Approved by: prof. Mgr. Michal Chabada, PhD.					

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KMANM+KAG/2-UMA-211/22	Seminar in History of Mathematics (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: II., N

Prerequisites:

Course requirements:
Ongoing evaluation: presentation of the prepared lesson (20 points), preparation of the written exam for other participants (10 points), active participation in the evaluation of presentations and written exams of other participants (30 points).
Grading: A (56-60 points), B (51-55 points), C (46-50 points), D (41-45 points), E (36-40 points), Fx (0-35 points).
Weight of the ongoing / final assessment: 100/0
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Student will gain an overview of the various periods of development of mathematics in antiquity, including examples of problems solved in individual basic works.

Class syllabus:
Mathematics of ancient Egypt and Babylonia. Pre-Euclidean mathematics in ancient Greece. Euclid ´s Elements.

Recommended literature:
Dějiny matematiky / Dirk J. Struik ; přeložili Jaroslav Folta, Luboš Nový. Praha : Orbis, 1963
Dějiny matematiky ve starověku / Arnošt Kolman. Praha : Academia, 1968
Dějiny matematiky ve středověku / Adolf P. Juškevič. Praha : Academia, 1977
Dejiny matematiky / Ján Čižmár. Bratislava : Perfekt, 2020
The history of mathematics / Roger L. Cooke. Hoboke, NJ : John Wiley, 2003
The history of mathematics / David M. Burton, New York : McGraw-Hill, 2011

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 194

A	B	C	D	E	FX
69,07	25,77	4,64	0,52	0,0	0,0

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc., prof. RNDr. Pavol Zlatoš, PhD., RNDr. Kristína Rostás, PhD.

Last change: 24.06.2022

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KMANM/2-UMA-212/24	Seminar in History of Mathematics (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 42
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: II., N

Prerequisites:

Course requirements:
Ongoing evaluation: presentation of the prepared lesson (20 points), preparation of the written exam for other participants (10 points), active participation in the evaluation of presentations and written exams of other participants (30 points).
Grading: A (56-60 points), B (51-55 points), C (46-50 points), D (41-45 points), E (36-40 points), Fx (0-35 points).
Weight of the ongoing / final assessment: 100/0
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
The student will gain an overview of the various periods of mathematics development, including examples of problems solved in individual basic works.

Class syllabus:
Students will choose from the following topics: Ptolemy. Apollonius. Chinese and Arabic mathematics. Fibonacci. Alcuin's problems. Cardano´s Ars Magna. Pascal's Arithmetic Triangle. Huygens´s De Ratiociniis in Ludo Aleae. Bernoulli's Ars Conjectandi. Cavalieri's Geometry of indivisibles. Euler's Introductio and Letters to a German Princess. Venn´s Symbolic Logic.

Recommended literature:
Matematika v proměnách věků III / Editori Jindřich Bečvář, Eduard Fuchs. Praha : Výzkumné centrum pro dějiny vědy, 2004
Dějiny matematiky / Dirk J. Struik ; přeložili Jaroslav Folta, Luboš Nový. Praha : Orbis, 1963
Dějiny matematiky ve starověku / Arnošt Kolman. Praha : Academia, 1968
Dějiny matematiky ve středověku / Adolf P. Juškevič. Praha : Academia, 1977
Dejiny matematiky / Ján Čižmár. Bratislava : Perfekt, 2020
The history of mathematics / Roger L. Cooke. Hoboke, NJ : John Wiley, 2003
The history of mathematics / David M. Burton, New York : McGraw-Hill, 2011

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 18

A	B	C	D	E	FX
94,44	5,56	0,0	0,0	0,0	0,0

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc.

Last change: 31.05.2024

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-120/23	Students' Research Exhibition (1)

Educational activities:
Type of activities: training session
Number of hours:
per week: **per level/semester:** 3d
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PaedDr. Mária Slavíčková, PhD.

Last change: 15.01.2024

Approved by: prof. Mgr. Michal Chabada, PhD.

COURSE DESCRIPTION

Academic year: 2026/2027

University: Comenius University Bratislava

Faculty: Faculty of Arts

Course ID:	**Course title:**
FMFI.KDMFI/2-UMA-220/23	Students' Research Exhibition (2)

Educational activities:
Type of activities: training session
Number of hours:
per week: **per level/semester:** 3d
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: II.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 4

A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

Lecturers: doc. PaedDr. Mária Slavíčková, PhD.

Last change: 15.01.2024

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