Course descriptions

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COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/1-UMA-207/15	Algebra

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:
Continuous evaluation: written exam (30 p.)
Final exam: oral (70 p.)
Grades: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 30/70

Learning outcomes:
Knowledge and use of basic notions, characteristics and methods of ring of polynomials and divisibility in ring of polynomilas over field for solving tasks related to algebraic equations, for example for examining characteristics of polynomial roots. Gaining corresponding relevant computation skills and using specific methods for finging polynomial roots.

Class syllabus:
Rings, integral domains and fileds. Subrings and homomorphisms of rings. Ring of polynomials over integral domain, roots of polynomials. Divisibility of polynomials, Remaindet theorem, Horner scheme, Euklidean division algorithm for computing the greatest comon divisor of polynomials, irreducible polynomials, factoring polynomials. Fundamental theorem of Algebra, polynomials with coeficients in Q,R,C. The derivate of a polynomial, multiple roots, Taylor expansion of a polynomial. Selected methods of solving algebraic equations.

Recommended literature:
Algebra a teoretická aritmetika 1 / Tibor Katriňák ... [et al.]. Bratislava : Univerzita Komenského, 2002
Prehľad modernej algebry / Garrett Birkhoff, Saunders Mac Lane ; preložili Štefan Znám, Jaroslav Smítal. Bratislava : Alfa, 1979
Lecture notes published on the web site of the course.

Languages necessary to complete the course:
slovak, english

Notes:

Past grade distribution
Total number of evaluated students: 109

A	B	C	D	E	FX
62,39	21,1	7,34	6,42	1,83	0,92

Lecturers: RNDr. Jana Tomanová, CSc.

Last change: 19.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJFB/1-UFY-241/10	Atomic and Nuclear Physics

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 1 **per level/semester:** 39 / 13
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: presentation of homework results (3x10 marks)
Exam: written (40 marks), oral (30 marks)
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Credits will be awarded if the student obtains at least 50% points.

Learning outcomes:
Graduates have a basic knowledge of Atomic and Nuclear Physics at the level of a core university course in general physics. They know how to use the concepts and methods of atomic and nuclear physics in solving problem situations. They have an idea of the boundaries between high school and university physics in the field of nuclear and nuclear in terms of work with high school youth with an increased interest in physics.

Class syllabus:
Photoelectric effect, Compton effect, Rutherford experiment, Bohr model, timeless Schrödinger equation, structure of atoms and molecules, basic properties of nuclei, structure of nuclei, transformation of nuclei, nuclear reactions, nuclear power plant, particle accelerators.

Recommended literature:
Fyzika část 5. Moderní fyzika : Vysokoškolská učebnice obecné fyziky / David Halliday, Robert Resnick, Jearl Walker ; přeložili Bohumila Lencová ... [et al.]. Brno : Vysoké učení technické VUTIUM, 2000
Všeobecná fyzika : 4 : atómová fyzika / Ján Vanovič. Bratislava : Alfa, 1980
Physics : principles with applications / Douglas C. Giancoli. Upper Saddle River, N.J. : Pearson/ Prentice Hall, 2005
Own electronic texts of the subject published through the course website.

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 147

A	B	C	D	E	FX
22,45	15,65	19,73	15,65	22,45	4,08

Lecturers: RNDr. Radoslav Böhm, PhD., Ing. Jakub Kaizer, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UMA-125/19	Attitudes as Important Factor in Mathematics Education

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 2

A	B	C	D	E	FX
50,0	0,0	0,0	0,0	0,0	50,0

Lecturers: PaedDr. Peter Vankúš, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UMA-122/11	Autumn Mathematical Teaching Workshop

Educational activities:
Type of activities: training session
Number of hours:
per week: **per level/semester:** 26s
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1., 3., 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 184

A	B	C	D	E	FX
97,83	0,0	0,0	0,0	0,0	2,17

Lecturers: PaedDr. Peter Vankúš, PhD.

Last change: 24.04.2017

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-918/17	BSc Thesis in Mathematics Seminar (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 13
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 19

A	B	C	D	E	FX
36,84	47,37	0,0	0,0	5,26	10,53

Lecturers: RNDr. Monika Dillingerová, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-919/17	BSc Thesis in Mathematics Seminar (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 13
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 15

A	B	C	D	E	FX
73,33	13,33	13,33	0,0	0,0	0,0

Lecturers: RNDr. Monika Dillingerová, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-937/17	BSc Thesis in Physics Seminar (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 13
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 33

A	B	C	D	E	FX
96,97	0,0	0,0	0,0	0,0	3,03

Lecturers: doc. PaedDr. Klára Velmovská, PhD.

Last change: 06.02.2021

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-938/17	BSc Thesis in Physics Seminar (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 13
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 30

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

Lecturers: doc. RNDr. Peter Demkanin, PhD., PaedDr. Tünde Kiss, PhD.

Last change: 06.02.2021

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-407/15	Brain and Mind

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1., 3., 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 154

A	B	C	D	E	FX
48,05	18,83	15,58	8,44	2,6	6,49

Lecturers: RNDr. Barbora Cimrová, PhD., doc. PhDr. Ján Rybár, PhD.

Last change: 21.03.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-160/15	Calculus for Physics Teachers

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: solving problems (3x10 marks), homeworks (3x10 marks), tests (2x20 marks)
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
By completing the course, students will expand and supplement their knowledge of selected parts of mathematics and can use them in solving physics problems.

Class syllabus:
Matrices, determinants. linear combination of vectors. Trigonometric functions and their graphs, trigonometric equations. Equation of the tangent. Function limit. Indefinite integral, decomposition into partial fractions, improper integral. Complex numbers, properties and operations. Algebraic, trigonometric and exponential form of complex numbers.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 60

A	B	C	D	E	FX
56,67	15,0	8,33	8,33	5,0	6,67

Lecturers: doc. PaedDr. Klára Velmovská, PhD., Mgr. Anna Trúsiková, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-408/15	Cognitive Laboratory

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1., 3., 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 54

A	B	C	D	E	FX
70,37	12,96	7,41	1,85	0,0	7,41

Lecturers: doc. PhDr. Ján Rybár, PhD.

Last change: 14.03.2022

Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KDMFI/1-UXX-991/15	**Course title:** Colloquium Defence of BSc Thesis
Number of credits: 12	
Educational level: I.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by:	

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/1-UMA-124/15	Combinatorics

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: D, I.

Prerequisites:

Course requirements:
Continuous evaluation: homework (50 p.)
Final exam: written exam (50 p.)
Grades: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 50/50

Learning outcomes:
Gaining comprehensive overview of basic combinatorial problems and skills to solve them.

Class syllabus:
Basic combinatorial tools, permutations, combinations, binomial coefficients and Pascal triangle, Binomial and Multinomial theorem, combinatorial identities, Principle of inclusion and exlusion, Dirichlet principle.

Recommended literature:
Kapitoly z diskrétní matematiky: Jiří Matoušek, Jaroslav Nešetřil. Praha: Karolinum, 2009
Kombinatorika a teória grafov: Martin Knor. Bratislava: Vydavateľstvo UK, 2000
Lecture notes.

Languages necessary to complete the course:
slovak, english

Notes:

Past grade distribution
Total number of evaluated students: 216

A	B	C	D	E	FX
36,57	15,28	13,43	14,81	16,2	3,7

Lecturers: RNDr. Jana Tomanová, CSc.

Last change: 19.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-181/15	Complementary Exercises in Mechanics

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
A series of written exams during the semester (5x20 marks).
Credits will not be awarded if the student obtains less than 50% of marks even after repeated assignments.

Learning outcomes:
After completing the course, the student will be able to independently solve computational problems at a level slightly higher than the level of a secondary school graduate in physics.

Class syllabus:
The exercise is a support for the subject Mechanics, the syllabus is in accordance with the syllabus of the subject Mechanics.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 69

A	B	C	D	E	FX
91,3	2,9	1,45	2,9	0,0	1,45

Lecturers: PaedDr. Peter Horváth, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-336/15	Constitution of Texts and Tasks for Education in Physics

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 3

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

Lecturers: doc. RNDr. Peter Demkanin, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UMA-303/19	Constructive Learning in Practice

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

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: RNDr. Monika Dillingerová, PhD.

Last change: 22.05.2019

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-137/15	Digital Technologies (1)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1.

Educational level: I., 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: 164

A	B	C	D	E	FX
70,73	14,02	7,32	2,44	0,61	4,88

Lecturers: Mgr. Mária Čujdíková, PhD., doc. PaedDr. Monika Tomcsányiová, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-138/15	Digital Technologies (2)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 2.

Educational level: I., II.

Prerequisites: FMFI.KDMFI/1-UXX-137/15 - Digital Technologies (1)

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 136

A	B	C	D	E	FX
69,85	17,65	7,35	0,0	2,21	2,94

Lecturers: Mgr. Mária Čujdíková, PhD., doc. PaedDr. Monika Tomcsányiová, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-236/15	Digital Technologies (3)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 4.

Educational level: I., II.

Prerequisites: FMFI.KDMFI/1-UXX-137/15 - Digital Technologies (1)

Course requirements:
Intermediate assessment: assignments (must get min. 50% points), essay (required, 25%)
Indicative evaluation scale: A 92%, B 84%, C 76%, D 68%, E 60%

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 115

A	B	C	D	E	FX
73,04	13,04	5,22	3,48	0,87	4,35

Lecturers: PaedDr. Roman Hrušecký, PhD., PaedDr. Andrea Hrušecká, PhD.

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI+KAG/1-UXX-237/15	Digital Technologies (4)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 5.

Educational level: I., II.

Prerequisites: FMFI.KDMFI/1-UXX-137/15 - Digital Technologies (1)

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 86

A	B	C	D	E	FX
76,74	13,95	5,81	2,33	1,16	0,0

Lecturers: doc. PaedDr. Monika Tomcsányiová, PhD., RNDr. Martina Bátorová, PhD., PaedDr. Lukáš Bartošovič, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-341/15	Digital Technologies (5)

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 6.

Educational level: I., II.

Prerequisites: FMFI.KDMFI/1-UXX-137/15 - Digital Technologies (1)

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 44

A	B	C	D	E	FX
65,91	11,36	11,36	6,82	2,27	2,27

Lecturers: RNDr. Monika Dillingerová, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-342/15	Digital Technologies for Learners with Specific Needs

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 62

A	B	C	D	E	FX
79,03	9,68	3,23	1,61	0,0	6,45

Lecturers: doc. RNDr. Ľudmila Jašková, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTF+KDMFI/1-UFY-141/15	Electromagnetism

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 2 **per level/semester:** 39 / 26
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: written tests, homework
Exam: oral, written
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Credits will be awarded if the student obtains at least 50% marks.

Learning outcomes:
Students have knowledge of electricity and magnetism at the level of the core course of university physics. They will master the basic calculation methods and procedures for solving physics problems in electromagnetism. They will understand the boundaries between secondary school physics and university physics in the field of electricity and magnetism in terms of working with high school youth with an increased interest in physics.

Class syllabus:
Electric charge. Coulomb's law. Electric field. Gauss's law. Electric potential. Capacity. Electric current and resistance. Circuits. Magnetic field. Magnetic field of electric current. Electromagnetic induction. Magnetic field in matter. Maxwell's equations. Electromagnetic oscillations. Alternating currents. Electromagnetic waves.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 69

A	B	C	D	E	FX
23,19	10,14	17,39	17,39	26,09	5,8

Lecturers: RNDr. Eduard Masár, PhD., doc. RNDr. Peter Demkanin, PhD.

Last change: 18.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/1-UMA-116/15	Elementary Theory of Numbers

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 26 / 13
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 2.

Educational level: D, I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 179

A	B	C	D	E	FX
41,34	25,14	20,67	7,82	1,68	3,35

Lecturers: RNDr. Jana Chalmovianská, PhD., Mgr. Klaudia Hamajová

Last change: 15.01.2018

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-233/13	English Conversation Course (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3., 5.

Educational level: I., II.

Prerequisites:

Course requirements:
tests, presentations, essays
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Continual improvement of all language skills focused on communication/speaking, listening comprehension and writing. The emphasis is on discourse, lexicology and morphology, word-bank broadening of communicational English as well as English for specific purposes appropriate for university students. This course is a follow up of the previously taught ESP course.

Class syllabus:
This course's focus is to broaden spoken/communicational English for students with B2/C1 level of English knowledge.

Recommended literature:
Appropriate study material is supplied based on the participants'level of English by the lecturer. (Sources- The Guardian, The Herald Morning Sun. The Nine News, The West Australian, BBC News and podcasts, CNN podcasts).

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 215

A	B	C	D	E	FX
67,44	13,02	6,51	1,86	1,4	9,77

Lecturers: Mgr. Aneta Barnes

Last change: 21.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-234/13	English Conversation Course (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4., 6.

Educational level: I., II.

Prerequisites:

Course requirements:
tests, oral presentations, essays
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Continual improvement of all language skills focused on communication/speaking, listening comprehension and writing. The emphasis is on discourse, lexicology and morphology, word-bank broadening of communicational/spoken English as well as English for specific purpose appropriate for university students. This course is a follow up of the Conversational English course 1.

Class syllabus:
This course's focus is to broaden spoken/communicational English for students with B2/C1 level of English knowledge(Upper-Intermediate/Lower Advanced).

Recommended literature:
Appropriate study material is supplied based on the participants'level of English by the lecturer. (Sources- The Guardian, The Herald Morning Sun. The Nine News, The West Australian, BBC News and podcasts, CNN podcasts).

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 146

A	B	C	D	E	FX
77,4	12,33	3,42	1,37	0,0	5,48

Lecturers: Mgr. Aneta Barnes

Last change: 21.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-131/00	English Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Grades: A 93%, B 85%, C 77%, D 70%, E 65%
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
The objective of the subject is to provide the students with experience and knowledge of technical English and thus make them ready to use English sources of information for later study and professional career.

Class syllabus:
On entering the first semester, students´ knowledge of English is tested and they are divided into groups according to the results of the placement test. In the groups of pre-intermediate and intermediate students, fundamentals of technical English are taught. Advanced students take classes of technical English for their field of study: English for mathematics, for physics, for computer science, English for management and economic and financial mathemathics.

Recommended literature:
Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková.
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 5840

A	B	C	D	E	FX
30,6	23,8	18,29	12,47	7,45	7,4

Lecturers: Mgr. Eva Foltánová, Mgr. Ing. Jana Kočvarová, Mgr. Ľubomíra Kožehubová, Mgr. Alexandra Maďarová, PhDr. Alena Zemanová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-132/00	English Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:
Grades: A 93%, B 85%, C 77%, D 70%, E 65%
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
The objective of the subject is to provide the students with experience and knowledge of technical English and thus make them ready to use English sources of information for later study and professional career.

Class syllabus:
This is a continuation of the course English (1) designed for pre-intermediate students. Fundamental vocabulary is presented through selected topics in mathematics, physics and informatics. The lessons also contain revision of elementary grammar. Generally, it is a necessary preliminary to advanced programs.

Recommended literature:
Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová.
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 1582

A	B	C	D	E	FX
22,06	20,54	24,27	15,36	10,81	6,95

Lecturers: PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Mgr. Ľubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.
Last change: 20.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-231/00	English Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:
Grades: A 93%, B 85%, C 77%, D 70%, E 65%
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
The objective of the classes is to provide the students with knowledge of technical English in their field of study and experience with technical English sources sufficient to make the able to use technical language for their later study and professional purposes.

Class syllabus:
The subject continues the program of English (2). Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathemathics.
The subject requires advanced knowledge of general English.

Recommended literature:
Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková.
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:

Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 1326

A	B	C	D	E	FX
16,06	19,53	23,23	18,1	17,5	5,58

Lecturers: PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Mgr. Ľubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-232/10	English Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:
Examination: an examination consisting of a written and an oral part.
Grades: A 93%, B 85%, C 77%, D 70%, E 65%
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/skuska-z-predmetu-anglicky-jazyk-4/
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
After completing the course, students will be able to work independently with professional literature in English

Class syllabus:
Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathemathics.

Recommended literature:
Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová.
The textbook has not been published. It is at students' disposal in an electronic format.
Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková.
The textbook has not been published. It is at students' disposal in an electronic format.

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 3345

A	B	C	D	E	FX
27,23	28,4	21,29	11,21	5,77	6,1

Lecturers: Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, PhDr. Alena Zemanová, Mgr. Ľubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.

Last change: 17.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-351/15	Experimental Methods in Physics

Educational activities:
Type of activities: laboratory practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 36

A	B	C	D	E	FX
94,44	2,78	0,0	0,0	0,0	2,78

Lecturers: PaedDr. Peter Horváth, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-141/00	French Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
French language is taught at two levels: beginner and intermediate. Students opt for one of them depending on whether they wish to obtain the fundamentals of the language or wish to maintain and/or improve previous knowledge of French.

Recommended literature:
Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 435

A	B	C	D	E	FX
45,75	20,0	18,85	8,74	2,3	4,37

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-142/00	French Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
The subject continues the program of French language (1) and provides courses of essential and intermediate French language.

Recommended literature:
Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 265

A	B	C	D	E	FX
38,87	25,28	19,62	10,19	2,64	3,4

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-241/00	French Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
The subject provides a course of intermediate French language, covering not only general, but also technical language.

Recommended literature:
Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 104

A	B	C	D	E	FX
39,42	27,88	21,15	6,73	0,96	3,85

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-242/00	French Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
The subject provides a course of intermediate French covering not only general, but also technical French language.

Recommended literature:
Menand Robert: Le Nouveau taxi 2, Hachette FLE, Paris, France 2009, ISBN 978-2-01-155551 - 9

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 74

A	B	C	D	E	FX
41,89	32,43	17,57	2,7	1,35	4,05

Lecturers: Mgr. Ľubomíra Kožehubová

Last change: 20.06.2022

Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KDMFI/1-UMA-951/15	**Course title:** Fundamentals of Mathematics
Number of credits: 2	
Educational level: I.	
State exam syllabus:	
Last change: 05.04.2022	
Approved by:	

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/1-UMA-107/15	Geometry (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 2.

Educational level: D, I.

Prerequisites: FMFI.KAG/1-UMA-112/22 - Algebra and Theoretical Arithmetic (1)

Course requirements:
Preliminary assessment: homework (20%), written tests (40%)
Final assessment: oral exam (40%)
Grading: A 90%, B 80%, C 70%, D 60%, E 50%

Learning outcomes:
Master the analytical methods of studying the geometric properties of subspaces of n-dimensional affine (or Euclidean) space and its maps

Class syllabus:
- n-dimensional affine space A^n and Euclidean space E^n;
- coordinate systems;
- affine maps;
- orientation of affine space;
- subspaces / linear varieties in E^n: parametric description and implicit equations, relative positions, distances and angles of some subspaces;
- invariants of affine maps (fixed points, eigenvectors);
- isometries, reflections as generators of the group of isometries of the Euclidean plane

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 179

A	B	C	D	E	FX
25,14	15,08	21,79	11,73	17,88	8,38

Lecturers: RNDr. Jana Chalmovianská, PhD., Mgr. Klaudia Hamajová

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/1-UMA-220/15	Geometry (2)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 3.

Educational level: D, I.

Prerequisites:

Course requirements:
Preliminary assessment: homework (20%), written tests (40%)
Final assessment: oral exam (40%)
Grading: A 90%, B 80%, C 70%, D 60%, E 50%

Learning outcomes:
The student gets familiar with the axiomatic construction of planimetry. He learns partly Euclid's, but especially Hilbert's axiomatic system. They will practice thorough mathematical argumentation and get knowledge of several models of different groups of axioms.

Class syllabus:
- history of axiomatics of geometry, Euclidean constructions
- axioms of incidence, incidence geometry models
- axioms of order, ordered plane models
- axioms of congruence, theorems about the congruence of triangles, arithmetics of line segments and angles, Hilbert plane
- controversy of the axiom of parallelism
- axioms of continuity and circle continuity principles
- some of Apollonius' problems

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 176

A	B	C	D	E	FX
22,16	16,48	26,14	12,5	10,23	12,5

Lecturers: RNDr. Jana Chalmovianská, PhD., Mgr. Klaudia Hamajová

Last change: 21.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/1-UMA-301/15	Geometry (3)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 26 / 13
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 4.

Educational level: D, I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 161

A	B	C	D	E	FX
28,57	21,12	18,63	13,66	9,32	8,7

Lecturers: RNDr. Jana Chalmovianská, PhD., Mgr. Alžbeta Mackovová

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-151/00	German Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
To master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency)

Class syllabus:
German language is taught at three levels: beginner, intermediate and advanced. Students opt for one of them depending on whether they need to learn the fundamentals or maintain and/or improve their previous knowledge.
This course's focus is to master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency)

Recommended literature:
Appropriate study material is supplied by teacher based on the participants'level of German proficiency.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 734

A	B	C	D	E	FX
36,1	27,25	19,62	8,99	2,72	5,31

Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-152/00	German Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
To master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency)

Class syllabus:
German language is taught at two levels: beginner and intermediate. Students opt for one of them depending on whether they wish to obtain the fundamentals of the language or wish to maintain and/or improve previous knowledge of German.
This course's focus is to to master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency)

Recommended literature:
Appropriate study material is supplied by teacher based on the participants'level of German proficiency

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 480

A	B	C	D	E	FX
36,04	20,21	20,83	13,13	3,33	6,46

Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-251/00	German Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Master the basics of general language and basic professional terminology of individual fields of study (depending on the advanced level of students)

Class syllabus:
The course is a follow-up to the German language (1,2). The subject provides a course of intermediate or advanced German language.
This course's focus is to deepen the knowledge of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency).

Recommended literature:
Appropriate study material is supplied by teacher based on the participants'level of German proficiency.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 165

A	B	C	D	E	FX
41,21	25,45	20,61	6,67	2,42	3,64

Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-252/00	German Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Master the basics of general language and basic professional terminology of individual fields of study (depending on the advanced level of students)

Class syllabus:
The course is a follow-up to the German language (1-3). It provides a course of intermediate and advanced German language.
This course's focus is to deepen the knowledge of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency).

Recommended literature:
Appropriate study material is supplied by teacher based on the participants'level of German proficiency.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 90

A	B	C	D	E	FX
42,22	24,44	12,22	12,22	3,33	5,56

Lecturers: Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-MXX-491/15	Integrated Education of People with Disabilities

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 1., 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 55

A	B	C	D	E	FX
78,18	18,18	1,82	0,0	0,0	1,82

Lecturers: PaedDr. Elena Mendelová, CSc.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-310/15	Introduction to Didactics of Physics

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 5.

Educational level: I.

Prerequisites: FMFI.KDMFI/1-UFY-232/22 - School Physics (1)

Course requirements:
Continuous assessment: presentation of the results of individual work (2x25 marks)
Exam: written (20 marks), oral (30 marks)
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
The graduate will know the relationship between pedagogy, psychology and physics didactics. Graduates - future physics teachers will understand the basic goals, methods and means of physics education.

Class syllabus:
Didactics of physics as applied science. Current goals and problems of physical education. Teaching strategies. Cognition methods. Models and modelling in physics teaching. The empirical and theoretical approach to knowledge mediation. Means of teaching physics. Experiment. Mathematical procedures. Coordinate graph function. Solving physics problems. Microcomputer supported and multimedia lab. Possibilities of influencing students' motivation by teachers. Preparation for teaching. Evaluation of students' knowledge.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 41

A	B	C	D	E	FX
70,73	9,76	12,2	0,0	4,88	2,44

Lecturers: doc. PaedDr. Klára Velmovská, PhD., PaedDr. Simona Gorčáková

Last change: 18.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-220/15	Introduction to School Experiments

Educational activities:
Type of activities: lecture / laboratory practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 4.

Educational level: D, I.

Prerequisites:

Course requirements:
Continuous assessment: written test (10 marks), individual work projects (2x20 marks), practical test (10 marks)
Exam: oral (40 marks)
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Credits will be awarded if the student obtains at least 50% marks.

Learning outcomes:
Graduates have the knowledge, skills and abilities necessary for the methodology and technique of performing several types of school physical measurements and experiments in the physics curriculum of lower secondary and high schools.

Class syllabus:
Phases of a school experiment, types of school experiments, measurements and observations, possibilities of a computer-aided science laboratory, measurement with sensors, basics of video measurement, basics of preparation of interactive animations. Preparation of instruction for a student for an experiment planned by a teacher, preparation and assignment of a student planning experiment. Empirical cognition in school physics, basics of measuring results, student work in empirical cognition.

Recommended literature:
Evidence based teaching : A practical approach / Geoff Petty. Cheltenham : Nelson Thornes, 2006
Počítačom podporované prírodovedné laboratórium / Peter Demkanin a kol.. Bratislava : Knižničné a edičné centrum, 2006
Demkanin, P, Didaktika fyziky, UK 2018
Klentschy, Michael P.: Scaffolding Science Inquiry Through Lesson Design
Own electronic texts of the subject published through the subject's website.

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 66

A	B	C	D	E	FX
60,61	21,21	13,64	0,0	1,52	3,03

Lecturers: doc. RNDr. Peter Demkanin, PhD., doc. PaedDr. Viera Haverlíková, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-AIN-406/15	Language and Cognition

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 2., 4., 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 111

A	B	C	D	E	FX
31,53	25,23	17,12	12,61	6,31	7,21

Lecturers: doc. PhDr. Ján Rybár, PhD.

Last change: 12.01.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAG/1-UMA-112/15	Linear Algebra

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Preliminary assessment: test.
Final assessment: Exam in written and oral form
Final assessment examination (A 90%; B 80%; C 70%; D 60%; E 50%)
Scale of assessment (preliminary/final): Weight of the course work / exam: 30/70

Learning outcomes:
Students will become familiar with the basic notions and methods of linear algebra and their applications. They will gain practical skills in solving systems of linear equations, computations with matrices, and determinants.

Class syllabus:
Binary operations, fields, vector spaces, subspaces, linear independence, basis and dimenson, systems of linear equations, linear maps and their matrix representations, regular matrices, inverse of a matrix, determinants.

Recommended literature:
Linear Algebra / Jim Hefferon, 4th Edition, ISBN-13: 978-1-944325-11-4, https://joshua.smcvt.edu/linearalgebra/book.pdf

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 183

A	B	C	D	E	FX
24,04	24,04	16,94	15,85	14,21	4,92

Lecturers: Mgr. Tomáš Rusin, PhD.

Last change: 17.03.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI+KMANM/1-UMA-101/15	Mathematical Analysis (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 150

A	B	C	D	E	FX
12,0	11,33	10,0	20,0	19,33	27,33

Lecturers: doc. PaedDr. Mária Slavíčková, PhD., Mgr. Michaela Zatrochová

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KMANM+KDMFI/1-UMA-105/15	Mathematical Analysis (2)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 4.

Educational level: I.

Prerequisites: FMFI.KDMFI+KMANM/1-UMA-101/15 - Mathematical Analysis (1)

Course requirements:
Continuous assessment: two continuous tests, at least 60% for the progress of the written part of the exam Examination: written and oral, at least 50% success in the written test for the oral part Assessment scale: A 94%, B 86%, C 79%, D 70%, E 60%, Fx <60%
Scale of assessment (preliminary/final): 40/60

Learning outcomes:
Understand the basic concepts and principles of the curriculum specified in the syllabus. Using the techniques of integral calculus of one variable, they will be able to apply a definite integral in the calculation of measures of geometric shapes and bodies. They will understand the principle of deriving formulas to calculate these quantities. Using the above knowledge, students will be able to find solutions to selected problems, estimate the values of some functions and important constants using infinite series.

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 107

A	B	C	D	E	FX
20,56	16,82	16,82	31,78	9,35	4,67

Lecturers: Mgr. Michaela Vargová, PhD.

Last change: 16.03.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KMANM+KDMFI/1-UMA-211/15	Mathematical Analysis (3)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 26 / 13
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 5.

Educational level: I.

Prerequisites: FMFI.KMANM+KDMFI/1-UMA-105/15 - Mathematical Analysis (2)

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 109

A	B	C	D	E	FX
43,12	20,18	17,43	6,42	9,17	3,67

Lecturers: Mgr. Michaela Vargová, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UMA-213/19	Mathematical Analysis Complementary Classes (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 47

A	B	C	D	E	FX
80,85	6,38	6,38	2,13	4,26	0,0

Lecturers: Mgr. Michaela Vargová, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UMA-214/19	Mathematical Analysis Complementary Classes (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 42

A	B	C	D	E	FX
97,62	2,38	0,0	0,0	0,0	0,0

Lecturers: Mgr. Michaela Vargová, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-120/15	Mathematical Methods in Physics (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 1 **per level/semester:** 26 / 13
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: written exams, problem solving
Exam: written
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Credits will be awarded if the student obtains min. 50% marks.

Learning outcomes:
Students know the basic mathematical concepts and methods used in the physics course. These can be used in solving basic physics course tasks.

Class syllabus:
Vector and basic vector operations. Scalar and vector product. Function and its properties. Derivation of a function. The course of the function. Differential. Taylor polynomial. Application of differential calculus. Indefinite integral. Integration methods. Definite integral. Applications of a definite integral. Improper integral. 1st and 2nd order linear differential equations. 1st order and 2nd order differential equations. Differential equations in physics.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 73

A	B	C	D	E	FX
46,58	21,92	9,59	4,11	6,85	10,96

Lecturers: doc. PaedDr. Klára Velmovská, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-121/15	Mathematical Methods in Physics (2)

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: tests (3x20 marks), problem solving (4x10 marks)
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Credits will be awarded if the student obtains min. 50% marks.

Learning outcomes:
Graduates master selected mathematical concepts and methods used in physics and know how to use them in solving core physics courses.

Class syllabus:
Real function of several variables. Points and sets in n-dimensional space. Limit functions of several variables. Continuity of a function of several variables. Partial derivatives of functions of several variables. Complete differential of a function of several variables. Taylor polynomial functions of several variables. Extremes of functions of several variables. Local extremes of functions of several variables. Bound local extremes. Global (absolute) extremes. Integral of functions of several variables. Calculation of a certain integral on an interval. Integral calculation on the elementary domain. Substitution method for integrals of several variables (polar, cylindrical and spherical coordinates). Geometric applications of integral of several variables. Applications of plural integrals in physics. Scalar and vector fields. Gradient, divergence, rotation. Curve integrals of the 1st and 2nd kind.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 61

A	B	C	D	E	FX
59,02	16,39	9,84	9,84	0,0	4,92

Lecturers: doc. PaedDr. Klára Velmovská, PhD.
Last change: 18.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-343/15	Mathematical Methods of Theoretical Physics

Educational activities:
Type of activities: seminar
Number of hours:
per week: 1 **per level/semester:** 13
Form of the course: on-site learning

Number of credits: 1

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 38

A	B	C	D	E	FX
60,53	26,32	5,26	5,26	0,0	2,63

Lecturers: PaedDr. Lukáš Bartošovič, PhD.

Last change: 29.11.2017

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-111/15	Mechanics

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 / 2 **per level/semester:** 39 / 26
Form of the course: on-site learning

Number of credits: 6

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: papers. homeworks
Exam: written
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
Students will understand the basic concepts and laws of mechanics and will be able to use them in solving problems.

Class syllabus:
Basic physical quantities. Gradual movement, movement in a circle. Newton's laws of dynamics, force, momentum. Inertial and non-inertial reference frames. Gravitational field. Work, kinetic and potential energy, moment of force, moment of momentum. Conservation laws in mechanics. Rigid body mechanics, center of gravity, moment of inertia, Steiner's theorem, rotational motion. Fluid mechanics. Oscillations - free, damped and forced, resonance.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 82

A	B	C	D	E	FX
29,27	14,63	18,29	18,29	4,88	14,63

Lecturers: PaedDr. Peter Horváth, PhD., doc. RNDr. Peter Demkanin, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-342/15	Molecular Physics and Thermodynamics

Educational activities:
Type of activities: lecture
Number of hours:
per week: 3 **per level/semester:** 39
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: tests (2x10 marks), presentation of individual project work (10 marks), homeworks (3x10 marks)
Exam: written (40 marks)
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
Graduates will have basic knowledge of molecular physics and thermodynamics - basic concepts, methods, laws and selected applications in this field. They will have an idea of the boundaries between graduation and university physics in this area in terms of working with high school youth with an increased interest in physics. They will have developed skills and knowledge to work with energy transformations and the law of conservation of energy within classical physics.

Class syllabus:
History of molecular discovery, Mol, Avogadro's constant, typical dimensions of the microworld. Phenomenology of gas processes, equation of state, Kelvin scale. Kinetic theory of gas pressure, the relationship between temperature, heat and energy. Macroscopic work of gas, heat as microscopic work, the first thermodynamic theorem. Mayer's relationship, Adiabatic story. Continuous random variables. Maxwell's velocity distribution. Boltzmann distribution and barometric formula. A synthesizing view of the law of conservation of energy in classical physics.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 38

A	B	C	D	E	FX
71,05	23,68	2,63	0,0	0,0	2,63

Lecturers: PaedDr. Lukáš Bartošovič, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/1-UXX-231/18	Pedagogic Communication

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 4.

Educational level: D, I., II.

Prerequisites:

Antirequisites: FMFI-Prif.KDPP/1-UXX-231/10

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 213

A	B	C	D	E	FX
48,83	19,72	13,62	9,86	2,82	5,16

Lecturers: doc. RNDr. Martin Takáč, PhD.

Last change: 07.05.2018

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-110/00	Physical Education and Sport (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 0

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Grades: A 90%, B 80%, C 70%, D 60%, E 50%
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Orientation in the history of the selected sports discipline, mastering the basic principles of compensation of mostly mental burdens of the individual. Creating a positive, lasting relationship to physical education and sports in the sense of calocagation. Mastering the demands for the development of motor abilities, skills, proper technique of performing individual movements in individual sports, individual game activities in collective sports games.

Class syllabus:
Introduction to the basic history of the selected sport, with the basic principles of compensation of one-sided psychological burden of the individual's body. Development of basic motor skills with a stop to all kinds of endurance, coordination, increasing the level of joint mobility. Training of individual game activities in collective sports games. In individual sports disciplines, practice of basic techniques of individual elements.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 5698

A	B	C	D	E	FX
95,35	1,7	0,12	0,0	0,07	2,76

Lecturers: Mgr. Ladislav Mókus, PaedDr. Dana Mašlejová, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký

Last change: 16.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-120/00	Physical Education and Sport (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 0

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Practising offensive and defensive combinations and game at modified rules in collective games such as basketball, volleyball, soccer, floorball. Command of elements of higher difficulty in terms of the level of the activity abilities (crawl stroke, breast stroke, butterfly stroke, trampoline jump, aerobic compositions with steps, fitball, elastic gums, paddling on the running water.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 4814

A	B	C	D	E	FX
96,72	1,62	0,1	0,06	0,04	1,45

Lecturers: Mgr. Tomáš Kuchár, PhD., PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-210/00	Physical Education and Sport (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
To practise game combinations, tactical - mechanical elements in basketball, volleyball, soccer, floorball, ice hockey, badminton, competition rules in the sports specialization.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 2799

A	B	C	D	E	FX
98,54	0,5	0,11	0,04	0,0	0,82

Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký

Last change: 16.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-220/00	Physical Education and Sport (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
Preparation for sport championships of the Faculty in the chosen sport at modified rules. The selection of talented students into the teams of the University and Faculty leagues and other faculty sport events.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 2518

A	B	C	D	E	FX
98,53	0,16	0,08	0,04	0,0	1,19

Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký

Last change: 15.03.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-310/00	Physical Education and Sport (5)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:

Class syllabus:
Preparation and participation of individuals and teams in the system of university sport competitions and sport events.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 1864

A	B	C	D	E	FX
98,98	0,38	0,11	0,0	0,0	0,54

Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký

Last change: 15.03.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-320/00	Physical Education and Sport (6)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
Using the communication in the physical education and sport and organizing the sport championships to achieve expressive motion of the sport and health in a valuable orientation the students.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 1630

A	B	C	D	E	FX
98,71	0,37	0,12	0,0	0,0	0,8

Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-335/15	Physics Around Us

Educational activities:
Type of activities: lecture
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites: FMFI.KDMFI+KEF/1-UFY-132/15 - School Physics (1)

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 28

A	B	C	D	E	FX
96,43	0,0	0,0	0,0	3,57	0,0

Lecturers: PaedDr. Peter Horváth, PhD.

Last change: 02.06.2015

Approved by:

STATE EXAM DESCRIPTION

Academic year: 2021/2022	
University: Comenius University Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KDMFI/1-UFY-951/15	**Course title:** Physics and Didactics of Physics
Number of credits: 2	
Educational level: I.	

Course requirements:

The final examination is realized by the student's discussion with the members of the commission on two topics from the content of the examination. Assessed: illustration of concepts on suitable examples / contexts / situations 0-3 points; correctness of physics terminology 0-3 points; intelligibility of discussion 0-3 points; responding to commission questions regarding selected topics 0-3 points; responding to other commission questions / broader context 0-3 points. Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%

The exam is successfully passed if the student obtains at least 50% of points.

Learning outcomes:

Passing the exam represents fulfilling the profile of the graduate.

Class syllabus:

Physics:

Movement in two dimensions. Even movement in a circle. Movements in a homogeneous gravitational field, oblique litter. Newton's laws of motion. Relationship between free fall and motion of bodies in the radial field of the Earth.

Mechanical work, kinetic energy, work of gravitational force (in homogeneous gravitational field), work of elastic force, power, potential gravitational energy, potential energy of elasticity, law of conservation of mechanical energy, conservative and non-conservative forces, work of friction force.

Fluid mechanics, pressure, compressive force, pressure induced by fluid gravity, Archimedes' law, Pascal's law, continuity equation, Bernoulli's equation.

Elastic and inelastic collisions, momentum, impulse of force, law of conservation of system momentum, elastic and inelastic direct collisions, oblique collisions, explosion (in two parts).

Moment of force with respect to the axis of rotation, momentum of the moment for rotation around a fixed axis (second impulse theorem), rolling, rotation of bodies around a fixed axis, rolling on an inclined plane. Momentum, momentum of a particle system, momentum of a rigid body with respect to a fixed axis, the law of conservation of momentum.

Coulomb's law. Electric field. Scalar and vector fields. Electric fields, lines of force. Point charge field. Superposition of electric fields. Electric dipole field. Application of Gauss' s law.

Electric potential. Electric potential energy. Potential, voltage, equipotential surfaces. Electron volt. Work performed by an external force when moving the charge in the el. field. Point charge potential. Potential energy and potential of a system of point charges. Faraday's cage. Capacity. Capacitor and capacity. Capacitor charging process.

Circuits with unidirectional el. current. Electromotive voltage. Internal battery resistance, terminal voltage. Battery power, power dissipation, battery charging and discharging. Loop rule, node rule, current calculation in resistor circuits by voltage method. Serial and parallel connection of resistors. Connection of ammeters and voltmeters, ideal ammeter and ideal voltmeter.

Magnetic field. The essence of magnetism and the magnetic field, the absence of a magnetic monopole. Magnetic induction, Lorentz force. Induction lines. Bar magnet. The trajectory of a charged particle in mag. field. Earth's magnetic field, aurora borealis. Cyclotron and synchrotron. Charged particle separator according to velocities, mass spectrometer. Hall map. Force acting on a current conductor in a magnetic field (Ampere's force).
Electromagnetic induction. Induced current, induced electromotive voltage. Experiments demonstrating electromagnetic induction. Faraday's law of electromagnetic induction. Lenz's law. Induction energy transfer. Alternator. Faraday's law of electromagnetic induction in integral form. Eddy currents.
Electromagnetic oscillations and alternating current circuits. LC oscillations, energy transfer, energy conservation, mechanical analogy. Damped oscillations in a serial RLC circuit. Circular frequency of undamped and damped oscillations. Power in RLC circuit with AC source. Effective voltage, power factor, resonant frequency of the source.
Mechanical vibration, kinematics - instantaneous deflection, speed and acceleration of oscillating motion, equation of motion for harmonic motion, energy of harmonic oscillator. Torsional oscillations, mathematical and physical pendulum, damped and forced oscillations, resonance.
Waves, superposition principle, wave speed propagating on a rope, reflection and transmission of a wave at an interface, standing waves, sound, resonance in tubes, Doppler effect, sound shock waves. Doppler phenomenon in connection with sound and in connection with light. Body velocity measurement. Infrared shift when exploring distant stars.
Electromagnetic waves, light, spectral regions of light and electromagnetic waves, Interference in space, basic assumptions of two-beam interference, Young's two-slit experiment, intensity profile in interference, interference on thin films. Sound wave interference. Bending (diffraction) of light at the aperture, Rayleigh criterion, diffraction grating.
Rutherford scattering, Bohr model of the atom, electron transitions between energy levels, emission and absorption spectra of gases. Franck-Hertz experiment. X-rays.
Interaction and radiation detection. Photoelectric effect, Compton scattering, pair formation and annihilation.
The nucleus of an atom and its properties. Weight loss and binding energy. nuclear fusion and fission. Isotopes.
Radioactive transformation. Alpha, beta and gamma radiation. Law of radioactive transformation, activity. Absorption characteristics of alpha, beta and gamma rays.
Ideas about the microworld. Basic substance characteristics (molar quantities). Equation of state of an ideal gas. Heat and temperature, Kelvin temperature scale. Thermal processes with an ideal gas - state changes and energy aspects. Ideal gas pressure, barometric equation. Kinetic theory of substance structure. Maxwell-Boltzmann distribution. The law of conservation of energy in terms of thermodynamics.
Didactics:
Science literacy, scientific work skills. Examples of the development of scientific skills in teaching physics.
Objectives and content of science and physical education.
Bloom's taxonomy of goals and its application in the creation of physical problems.
Basic pedagogical documents and teaching aids, their structure and function.
The model of ontogenesis of thinking according to J. Piaget and its importance for the creation of the physics curriculum.
Empirical and theoretical cognition in school physics. Selected methods of access to methods and ways of cognition.
Graphic method of communication between two quantities. Examples of the use of graphs in the introduction of some physical concepts.

Classification of physical tasks. The importance of the physical role in the cognitive process.
Complex physical problems, function of complex tasks in introducing ideas about natural phenomena.
Complete scheme of the school physics experiment planned by the teacher - the teacher's activity.
Pupil's activity in various phases of planning, implementation and data processing of a school physics experiment. Pupil-planned experiment.
Classification of school physics experiments (cognitive functions, organization, means used, data obtained).
Assessment and classification of students in physics teaching. Assessment of the degree of development of students' scientific abilities.
Key experiments on the topic of "fluid statics".
Key experiments on the topic of "calorimetry".
Key experiments on the topic of "molecular physics".
Key experiments on the topic of "movement and force".

State exam syllabus:

Recommended literature:
Recommended literature on the subjects of the study program.

Languages necessary to complete the course:
Slovak and English.

Last change: 10.03.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-360/15	Physics as the Component of Science Education

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: seminar work (30 marks), defence of seminar work (40 marks), discussion of the work of peers (30 marks)
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
They will know the ways of integration of science subjects into didactic programs and the position of physics in them, common methods, procedures, strategies and concepts in science subjects.

Class syllabus:
New approaches to the transformation of natural sciences into didactic models of education. Physics as a basis of conceptual structure and methods of work in the didactic model of science education. Graphical method of imaging as a way of mathematical modeling of phenomena. Application of historical aspects in the content of education.
Investigation of the properties of liquids and gases - a starting point for mastering the methods of measuring weight, length, volume. Procedures and strategies for experimental activities, as well as processing of measured data. Application of selected methods of work in physics to the study of living organisms.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 46

A	B	C	D	E	FX
78,26	10,87	6,52	0,0	0,0	4,35

Lecturers: doc. PaedDr. Viera Haverlíková, PhD.

Last change: 18.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-170/20	Physics by Experience

Educational activities:
Type of activities: training session
Number of hours:
per week: **per level/semester:** 5d
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1., 3., 5.

Educational level: I.

Prerequisites:

Course requirements:
During the camp, students will solve short practical tasks (3x10 marks) and one project task (40 marks). Reflection of the camp activities is for max. 30 marks.
Rating A = (90, 100]%, B = (80, 90]%, C = (70, 80]%, D: (60, 70]%, E: (50, 60]%).
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
By completing the course, the student will gain basic knowledge about the specifics of teaching physics in the outdoor environment. At a level appropriate to the future beginning physics teacher, will know the main characteristics of non-formal education and will be able to use selected methods of non-formal education in teaching physics at secondary schools.

Class syllabus:
The outdoor environment as a part of the environment for elementary school students' learning. Formal, non - formal and informal learning. Edutainment. Situation analysis - condition analysis, environment analysis and needs analysis. Objectives of non-formal education - knowledge, skills, attitudes, relationships. Methods and techniques in non-formal education. Creative-discovery workshops. Educational games. Group dynamics.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 0

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

Lecturers: doc. PaedDr. Viera Haverlíková, PhD., doc. PaedDr. Klára Velmovská, PhD.

Last change: 18.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAMŠ/1-UMA-302/15	Probability Measure and Mathematical Statistics (1)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 121

A	B	C	D	E	FX
28,1	26,45	10,74	14,88	14,05	5,79

Lecturers: Mgr. Lívia Rosová, PhD.

Last change: 13.09.2021

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAMŠ/1-UMA-309/15	Probability Measure and Mathematical Statistics (2)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 6.

Educational level: I.

Prerequisites: FMFI.KAMŠ/1-UMA-302/15 - Probability Measure and Mathematical Statistics (1)

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 106

A	B	C	D	E	FX
35,85	28,3	10,38	10,38	11,32	3,77

Lecturers: Mgr. Lívia Rosová, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI-PriF.KDPP/1-UXX-141/15	Psychology for Teachers (1)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 1.

Educational level: D, I., II.

Prerequisites:

Antirequisites: FMFI-PriF.KDPP/1-UXX-131/10

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 576

A	B	C	D	E	FX
19,97	14,93	24,31	19,1	17,19	4,51

Lecturers: RNDr. Jana Ciceková, PhD., PhDr. ThLic. Peter Ikhardt, PhD.

Last change: 09.09.2019

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-142/15	Psychology for Teachers (2)

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 2.

Educational level: D, I., II.

Prerequisites: FMFI-PriF.KDPP/1-UXX-141/15 - Psychology for Teachers (1)

Antirequisites: FMFI-PriF.KDPP/1-UXX-135/10

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 511

A	B	C	D	E	FX
24,66	16,44	19,57	22,7	13,89	2,74

Lecturers: RNDr. Jana Ciceková, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-UXX-340/00	Recreation Sports in Dialy Routine of Pupils and Students

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 5.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:
To optimize the daily working programme of the students, the programmes of the sport recreational activities and time-off the students. The sport and health in a value orientation of the students. Using developed elemens in an education physical activity and sport preparation.
The programmes of the sport recreational activities as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 44

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

Lecturers: Mgr. Tomáš Kuchár, PhD.

Last change: 14.01.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KMANM/1-UMA-131/15	Revision of Advanced Secondary-school Mathematics (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 207

A	B	C	D	E	FX
26,57	20,77	17,39	18,84	12,08	4,35

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KMANM/1-UMA-132/15	Revision of Advanced Secondary-school Mathematics (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 171

A	B	C	D	E	FX
36,84	16,37	14,62	16,37	14,62	1,17

Lecturers: doc. RNDr. Zbyněk Kubáček, CSc.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UIN-354/00	Robotics in Education (1)

Educational activities:
Type of activities: course
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:
Evaluation during semester: active participation (100%), discussion
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Students
- try out the implementation of introductory activities for elementary school students about the concept of robot;
- get acquainted with LEGO WeDo programmable kits and the basics of the iconographic programming language Lego WeDo;
- will discuss the possible use of WeDo kits in various subjects in the school;
- get acquainted with project teaching and constructionist teaching and will be able to apply the basic principles of these forms in educational activities with the robotic kit LEGO WeDo;
- will independently design, solve and present robotic projects.

Class syllabus:
My first robot.
Programming in Lego Mindstorms Education.
- basics - robot movement, sensor data logging, input reactions,
- advanced programming - variables, parallel processes.
Data logging, measurement, experiments.
Simulations and models.
Robotics competition - design, construction, programming and documentation of robot for a given task.
Robotics exhibition - design, construction and programming of robot for a given theme.

Recommended literature:
K možnostiam RoboLabu. P. Cvik. DidInfo 2002, KIFPV UMB Banská Bystrica
RoboLab - mikropočítače v škole. P. Cvik. Zborník Infovek 2001, Stará Turá, 2001.
Introduction to Robotics. Carnegie Mellon University, Robotics Academy, 2006.
Roboadventures: the Good Life. Lego Mindstorms Educational Division, 2002.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 177

A	B	C	D	E	FX
94,92	2,26	0,56	0,0	0,0	2,26

Lecturers: Mgr. Karolína Miková, PhD.

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-161/00	Russian Language (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing.

Class syllabus:
To master the fundamentals of general Russian. The language level is A1.
Learning the Cyrillic (Russian) alphabet, gaining basic language competence, building up skills and confidence in dealing with unfamiliar authentic and semi-authentic texts.
The subject provides a course in Russian language for beginners.

Recommended literature:
The textbook: : Точка Ру A1 (Ольга Долматова, Екатерина Новачац), pracovné karty Падежи 1 (Л.С. Безкоровайная, В.Е. Штыленко).

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 707

A	B	C	D	E	FX
58,56	16,55	11,03	4,38	1,84	7,64

Lecturers: Viktoria Mirsalova

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-162/00	Russian Language (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing.

Class syllabus:
To master the fundamentals of general Russian.
Learning the Cyrillic (Russian) alphabet, gaining basic language competence, building up skills and confidence in dealing with unfamiliar authentic and semi-authentic texts.
The subject continues the program of Russian language (1) and provides a course of Russian for beginners.

Recommended literature:
Textbook: Точка Ру A1 (Ольга Долматова, Екатерина Новачац), pracovné karty Падежи 1 (Л.С. Безкоровайная, В.Е. Штыленко).

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 421

A	B	C	D	E	FX
65,08	15,68	8,79	3,8	0,95	5,7

Lecturers: Viktoria Mirsalova

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-261/00	Russian Language (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing.

Class syllabus:
Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary.
The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.

Recommended literature:
Точка Ру A2 (Ольга Долматова, Екатерина Новачац) a Short Stories in Russian (Olly Richards, Alex Rowlings)

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 200

A	B	C	D	E	FX
70,5	17,5	8,5	2,5	0,0	1,0

Lecturers: Viktoria Mirsalova

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-262/00	Russian Language (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary.

Class syllabus:
Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary.
The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.

Recommended literature:
Точка Ру A2 (Ольга Долматова, Екатерина Новачац) a Short Stories in Russian (Olly Richards, Alex Rowlings)

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 144

A	B	C	D	E	FX
75,69	13,19	6,94	2,78	0,69	0,69

Lecturers: Viktoria Mirsalova

Last change: 20.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-320/15	School Experiments in Physics

Educational activities:
Type of activities: laboratory practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 5.

Educational level: D, I.

Prerequisites:

Course requirements:
Continuous assessment: tests (2x15 marks), assessment of individual work (2x15 marks)
Exam: practical (20 marks), written (20 marks)
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
Students will gain an overview of selected experiments conducted at secondary school. They will be able to carry out the experiments independently, explain them from a physics point of view and include them appropriately in the process of physics and science education.

Class syllabus:
Safety in the school laboratory. Demonstration experiments, frontal, work of students in a group. Experiments on the properties of substances, fluid statics, calorimetry, molecular physics, fluid dynamics, statics and dynamics of a rigid body, work, power, energy, kinematics, motion and force.

Recommended literature:

Languages necessary to complete the course:
Slovak and English.

Notes:

Past grade distribution
Total number of evaluated students: 47

A	B	C	D	E	FX
51,06	19,15	21,28	4,26	2,13	2,13

Lecturers: doc. PaedDr. Klára Velmovská, PhD., PaedDr. Simona Gorčáková

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-331/18	School Management

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 2 **per level/semester:** 13 / 26
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 6.

Educational level: D, I., II.

Prerequisites:

Antirequisites: FMFI-Prif.KDPP/1-UXX-331/15

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 112

A	B	C	D	E	FX
53,57	13,39	25,0	3,57	0,0	4,46

Lecturers: Mgr. Karolína Miková, PhD., PaedDr. Tünde Kiss, PhD.

Last change: 10.01.2020

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI+KEF/1-UFY-132/15	School Physics (1)

Educational activities:
Type of activities: lecture / course
Number of hours:
per week: 1 / 2 **per level/semester:** 13 / 26
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 70

A	B	C	D	E	FX
84,29	4,29	4,29	1,43	0,0	5,71

Lecturers: PaedDr. Peter Horváth, PhD., doc. RNDr. František Kundracik, CSc.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-232/15	School Physics (2)

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 2 / 2 **per level/semester:** 26 / 26
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 56

A	B	C	D	E	FX
33,93	26,79	16,07	12,5	0,0	10,71

Lecturers: PaedDr. Lukáš Bartošovič, PhD., doc. PaedDr. Viera Haverlíková, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAI/2-IKVa-192/19	Science, Technology and Humanity: Opportunities and Risks

Educational activities:
Type of activities: seminar
Number of hours:
per week: 3 **per level/semester:** 39
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:
Semestral evaluation: active participation
Final evaluation: essay
Weight of the final evaluation: 60%
To achieve an A, 90% is needed, for B at least 80%, for C 70%, for D, 60% and for an E, at least 50% of overall assessment.

Learning outcomes:
The students will gain awareness of the contemporary and potential future challenges posed by scientific and technological innovations and their impact on human behaviour, culture and society.

Class syllabus:
Big data: privacy, politics and power,
Internet of things, it usefulness and threats,
Assistant AI and its place in future society,
Job market and inequality,
Enhancements and human rights and the right to change self and others,
Initiatives for responsible research,
Artificial minds,
Hybridization between species and between AI and organic minds,
Future of minds and trans-humanism,
Artificial emotional intelligence,
An after human era.

Recommended literature:
- S. Russell: Human compatible. Artificial intelligence and the problem of control. Viking, 2019.
- J. Havens: Heartificial intelligence. Embracing our humanity to maximize machines. Penguin, 2016.
- P. Boddington: Towards a code of ethics for artificial intelligence. Springer, 2017.
- M. Shanahan: The technological singularity. MIT Press, 2015.

- C. MacKellar, C.: Cyborg Mind: What Brain–Computer and Mind–Cyberspace Interfaces Mean for Cyberneuroethics. Berghahn Books, 2019.
- G. Bel, J. Gemmell: Total Recall, How the e-Memory Revolution will change everything. Dutton, 2009.
- S. Zuboff: The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power. PublicAffairs, 2019.
- C. O'Neil: Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy. Crown Publishers, 2016.
- M. Tegmark: Life 3.0. Allen Lane, 2017.

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 48

A	B	C	D	E	FX
56,25	18,75	6,25	6,25	6,25	6,25

Lecturers: doc. RNDr. Martin Takáč, PhD., PhDr. Ing. Tomáš Gál, PhD.

Last change: 28.02.2020

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UMA-126/19	Seminar in Mathematical Analysis

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 54

A	B	C	D	E	FX
51,85	38,89	5,56	1,85	1,85	0,0

Lecturers: RNDr. Monika Dillingerová, PhD.

Last change: 17.11.2019

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI+KMANM/1-UMA-113/15	Seminar in School Mathematics (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 52

A	B	C	D	E	FX
67,31	11,54	11,54	3,85	3,85	1,92

Lecturers: Mgr. Emília Miťková, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI+KMANM/1-UMA-118/15	Seminar in School Mathematics (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 38

A	B	C	D	E	FX
50,0	18,42	21,05	7,89	0,0	2,63

Lecturers: Mgr. Emília Miťková, PhD.

Last change: 02.06.2015

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-171/20	Slovak Language for Foreign Students (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I., II.

Prerequisites:

Course requirements:
tests
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
This course is aimed for foreign students to learn the fundamentals of the Slovak language with the focus on basic communication as well as all other language skills- listening comprehension,reading and writing.

Class syllabus:
The sylabus is targeted at the comprehension of the basics of the Slovak language for the absolute beginners (A1).

Recommended literature:
Krížom- Krážom Slovenčina 1, additional material to further support the covered topics.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 23

A	B	C	D	E	FX
47,83	0,0	0,0	0,0	0,0	52,17

Lecturers: Mgr. Aneta Barnes

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-172/20	Slovak Language for Foreign Students (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I., II.

Prerequisites:

Course requirements:
tests
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
This course is aimed for foreign students to learn the fundamentals of the Slovak language with the focus on basic communication as well as all other language skills- listening comprehension,reading and writing.

Class syllabus:
The sylabus is targeted at the comprehension of the basics of the Slovak language for the absolute beginners (A1) and this course is a follow up course to the Slovak language course 1.

Recommended literature:
Krížom- Krážom Slovenčina 1, additional material to further support the covered topics

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 22

A	B	C	D	E	FX
81,82	0,0	4,55	0,0	0,0	13,64

Lecturers: Mgr. Aneta Barnes

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-271/20	Slovak Language for Foreign Students (3)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Course requirements:
tests
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
This course is aimed for foreign students to better comprehend all the language skills important to enable correct usage of the Slovak language – listening comprehension, reading, writing and speaking.

Class syllabus:
The sylabus is targeted at the comprehension of all the language skills of the Slovak language , and it is a follow up course to the Slovak language course 2.

Recommended literature:
Krížom-Krážom Slovenčina 2, additional material to further support the covered topics.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 8

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

Lecturers: Mgr. Aneta Barnes

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-272/20	Slovak Language for Foreign Students (4)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 4.

Educational level: I., II.

Prerequisites:

Course requirements:
tests
Course prerequisites:
https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
This course is aimed for foreign students to better comprehend all the language skills important to enable correct usage of the Slovak language – listening comprehension, reading, writing and speaking.

Class syllabus:
The sylabus is targeted at the comprehension of all the language skills of the Slovak language , and it is a follow up course to the Slovak language course 3.

Recommended literature:
Krížom-Krážom Slovenčina 2, additional material to further support the covered topics.

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 7

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

Lecturers: Mgr. Aneta Barnes

Last change: 21.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-332/10	Social Aspects of Informatics

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Antirequisites: FMFI.KDMFI/1-INF-175/00

Course requirements:
Continuous assessment: seminar work
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%

Learning outcomes:

Class syllabus:
New ICT technologies are evolving very fast. But they are constantly entering our daily lives. We note what changes, what positive, but also what risks ICT brings in various areas: education, health, arts, business and finance, industry and others. We will pay special attention to the issue of copyright and its infringement and cybercrime.
Also what risks they bring.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 115

A	B	C	D	E	FX
95,65	2,61	0,0	0,87	0,87	0,0

Lecturers: RNDr. Michal Winczer, PhD.

Last change: 14.03.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-115/15	Sports in Nature (1)

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

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
Grades: A 90%, B 80%, C 70%, D 60%, E 50%.
The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.

Learning outcomes:
Acquisition and development of basic motor skills and abilities in selected sports: skiing and snowboarding. Mastering the correct technique of performing individual movements, which are necessary for skiing and snowboarding.

Class syllabus:
The student can sign up for the outdoor sports courses offered by the department: skiing, snowboarding and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.

Recommended literature:

Languages necessary to complete the course:
Slovak

Notes:
KTVŠ does not rent ski equipment.

Past grade distribution
Total number of evaluated students: 227

A	B	C	D	E	FX
99,56	0,0	0,44	0,0	0,0	0,0

Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD.

Last change: 16.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-215/15	Sports in Nature (2)

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

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:
Grades: A 90%, B 80%, C 70%, D 60%, E 50%
The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.

Learning outcomes:
Creating a positive and lasting relationship with physical activity. Acquisition and mastery of basic motor skills and abilities in outdoor sports: windsurfing, beach volleyball, water tourism - river rafting, hiking and other sports according to interest. Training and improving the technique needed for the sports.

Class syllabus:
The student can sign up for the outdoor sports courses offered by the department: water tourism - river rafting, windsurfing, beach volleyball, hiking and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.

Recommended literature:

Languages necessary to complete the course:
Slovak

Notes:
KTVŠ will provide sports equipment.

Past grade distribution
Total number of evaluated students: 194

A	B	C	D	E	FX
94,33	0,0	0,0	0,0	0,0	5,67

Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD.
Last change: 16.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-216/18	Sports in Nature (3)

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

Number of credits: 1

Recommended semester: 3.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KTV/1-UXX-151/22

Course requirements:
Grades: A 90%, B 80%, C 70%, D 60%, E 50%
The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.

Learning outcomes:
Acquisition and development of basic motor skills and abilities in selected sports: skiing and snowboarding. Mastering the correct technique of performing individual movements, which are necessary for skiing and snowboarding.

Class syllabus:
The student can sign up for the outdoor sports courses offered by the department: skiing, snowboarding. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.

Recommended literature:

Languages necessary to complete the course:
Slovak

Notes:
KTVŠ does not rent ski equipment.

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: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD.
Last change: 16.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KTV/1-MXX-217/18	Sports in Nature (4)

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

Number of credits: 1

Recommended semester: 4.

Educational level: I.

Prerequisites:

Antirequisites: FMFI.KTV/1-UXX-152/22

Course requirements:
Grades: A 90%, B 80%, C 70%, D 60%, E 50%
The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.

Learning outcomes:
Creating a positive and lasting relationship with physical activity. Acquisition and mastery of basic motor skills and abilities in outdoor sports: windsurfing, beach volleyball, water tourism - river rafting, hiking and other sports according to interest. Training and improving the technique needed for the sports.

Class syllabus:
The student can sign up for the outdoor sports courses offered by the department: water tourism - river rafting, windsurfing, beach volleyball, hiking and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.

Recommended literature:

Languages necessary to complete the course:
Slovak

Notes:
KTVŠ will provide material equipment.

Past grade distribution
Total number of evaluated students: 18

A	B	C	D	E	FX
88,89	0,0	0,0	0,0	0,0	11,11

Lecturers: Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD.
Last change: 16.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UMA-121/10	Spring Mathematical Teaching Workshop

Educational activities:
Type of activities: training session
Number of hours:
per week: **per level/semester:** 26s
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2., 4., 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 196

A	B	C	D	E	FX
98,47	0,0	0,0	0,0	1,02	0,51

Lecturers: PaedDr. Peter Vankúš, PhD.

Last change: 24.04.2017

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-133/18	Supplementary English Course (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 1.

Educational level: I.

Prerequisites:

Course requirements:
tests, homework
Scale of assessment (preliminary/final): 100/0 credit - ongoing evaluationMinimum 65 percent of the total points for the assigned work is needed to pass the course. Points can be awarded for attendance, completed homework tasks, and short tests assigned during the course.A 100-93 %B 92-85 %C 84-77 %D 76-70 %E 69-65 %Course prerequisites:https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/

Learning outcomes:

Class syllabus:
Texts dealing with the most important topics for FMPI majors combining grammar revision with vocabulary needed to pass the A4 English exam.

Recommended literature:
Study materials are created by the teacher and available in electronic form.
Raymond Murphy: Essential Grammar in USe, Cambridge University Press, 1998
Michael McCarthy, Felicity O'Dell: English Vocabulary in Use, Cambridge University Press, 1994

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 25

A	B	C	D	E	FX
52,0	24,0	8,0	0,0	8,0	8,0

Lecturers: Mgr. Ing. Jana Kočvarová

Last change: 17.06.2022
Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/1-MXX-134/18	Supplementary English Course (2)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 2.

Educational level: I.

Prerequisites:

Course requirements:
tests, homework
Scale of assessment (preliminary/final): 100/0 ENcredit - ongoing evaluation Minimum 65 percent of the total points for the assigned work is needed to pass the course. Points can be awarded for attendance, completed homework tasks, and short tests assigned during the course. A 100-93 % B 92-85 % C 84-77 % D 76-70 % E 69-65 %Course prerequisites:https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/

Learning outcomes:

Class syllabus:
Texts dealing with the most important topics for FMPI majors combining grammar revision with vocabulary needed to pass the A4 English exam.

Recommended literature:
Study materials are created by the teacher and available in electronic form. Raymond Murphy: Essential Grammar in USe, Cambridge University Press, 1998 Michael McCarthy, Felicity O'Dell: English Vocabulary in Use, Cambridge University Press, 1994

Languages necessary to complete the course:
English

Notes:

Past grade distribution
Total number of evaluated students: 26

A	B	C	D	E	FX
57,69	15,38	0,0	11,54	3,85	11,54

Lecturers: Mgr. Ing. Jana Kočvarová

Last change: 17.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-841/15	Teaching Practice in Mathematics (1)

Educational activities:
Type of activities: practice
Number of hours:
per week: **per level/semester:** 30s
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 216

A	B	C	D	E	FX
94,44	2,78	0,46	0,93	0,93	0,46

Lecturers: Mgr. Michaela Vargová, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-821/15	Teaching Practice in Physics (1)

Educational activities:
Type of activities: practice
Number of hours:
per week: **per level/semester:** 30s
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 35

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

Lecturers: PaedDr. Peter Horváth, PhD.

Last change:

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-132/18	Theoretical Fundaments of Education

Educational activities:
Type of activities: lecture / seminar
Number of hours:
per week: 1 / 1 **per level/semester:** 13 / 13
Form of the course: on-site learning

Number of credits: 3

Recommended semester: 3.

Educational level: I., II.

Prerequisites:

Antirequisites: FMFI-Prif.KDPP/1-UXX-132/10

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 216

A	B	C	D	E	FX
34,72	34,26	18,98	8,33	1,39	2,31

Lecturers: Mgr. Lucia Budinská, PhD.

Last change: 15.09.2021

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UXX-134/19	Theory of Teaching

Educational activities:
Type of activities: course
Number of hours:
per week: 3 **per level/semester:** 39
Form of the course: on-site learning

Number of credits: 4

Recommended semester: 3.

Educational level: D, I., II.

Prerequisites:

Antirequisites: FMFI.KDMFI/1-UXX-134/18

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 115

A	B	C	D	E	FX
46,09	25,22	11,3	7,83	4,35	5,22

Lecturers: Mgr. Karolína Miková, PhD.

Last change: 01.09.2019

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KDMFI/1-UFY-265/15	Unconventional Physics

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 2

Recommended semester: 6.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: active seminar work (40 marks), assessment of teaching-learning sequences (3x20 marks)
Indicative rating scale: A 90%, B 80%, C 70%, D 60%, E 50%.
Credits will not be awarded if a student scores less than 50%.

Learning outcomes:
The student will be able to apply physics in non-traditional, practical tasks and interesting life situations. He will get inspiration to lead a physics afternoon class at school.

Class syllabus:
Students will get acquainted with non-traditional approaches to the introduction and practice of selected physical concepts and laws from the curriculum of primary and secondary school through simple experiments, non-traditional tasks, home laboratory tasks, projects. They will get acquainted with the possibilities of using these approaches in non-formal and informal science education.

Recommended literature:

Languages necessary to complete the course:
Slovenský a anglický.

Notes:

Past grade distribution
Total number of evaluated students: 43

A	B	C	D	E	FX
97,67	0,0	0,0	0,0	0,0	2,33

Lecturers: doc. PaedDr. Klára Velmovská, PhD.

Last change: 18.06.2022

Approved by:

COURSE DESCRIPTION

Academic year: 2021/2022

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KEF/1-UFY-210/00	Waves and Optics

Educational activities:
Type of activities: lecture / practicals
Number of hours:
per week: 3 **per level/semester:** 39 / 13s
Form of the course: on-site learning

Number of credits: 5

Recommended semester: 3.

Educational level: I.

Prerequisites:

Course requirements:
Continuous assessment: written tests, lab reports
Exam: oral, written
Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50%
Credits will be awarded if the student obtains at least 50% marks.

Learning outcomes:
Graduates have a systematic knowledge of mechanical waves (including sound) and wave optics at the level of a core university physics course. They have an idea of the boundaries between graduation and university physics in the field of wave optics from the point of view of work with high school youth with an increased interest in physics.

Class syllabus:
Oscillations and oscillating systems (modes, resonators, oscillations and waves, Fourier analysis of oscillations). Waves (harmonic waves, complex notation, wave superposition, wave polarization, Doppler effect, wave diffraction, waves in physics, and waves at boundaries). Wave optics (light interference, light diffraction, holography, light dispersion in dielectrics, dispersion, polarization by reflection and refraction, spreading of light in anisotropic conditions). Geometrical optics and basics of optical projection. Photo metrics. Contemporary problems in optics.

Recommended literature:
Main I. G.: Kmity a vlny ve fyzice, Academia Praha 1990
Feynman R. P., Leighton R. B., Sands M.: Feynmanove prednášky z fyziky 2, Alfa Bratislava 1982
Z. Chorvátová: Kmity a vlny, skriptum MFF UK, Bratislava 1994
Štrba A., Mesaroš V., Senderáková D.: Optika s príkladmi I, skriptum MFF UK, Bratislava 1996
Hecht E.: Optics, Addison-Wenslez Publishing Company, Inc. 1987

Languages necessary to complete the course:
Slovak ad English.

Notes:

Past grade distribution Total number of evaluated students: 103					
A	B	C	D	E	FX
27,18	21,36	30,1	12,62	7,77	0,97
Lecturers: prof. RNDr. Pavel Veis, CSc.					
Last change: 11.11.2021					
Approved by:					