

## Course descriptions

### TABLE OF CONTENTS

1. 2-MAT-610/09 Algebraic Number Theory.....	3
2. 2-MAT-223/09 Algebraic Topology.....	4
3. 2-INF-278/18 Analytic and Enumerative Combinatorics.....	5
4. 2-MAT-226/14 Applications of set theory.....	7
5. 2-MAT-123/15 Calculus of Variations.....	8
6. 2-MAT-617/09 Category Theory (1).....	10
7. 2-MAT-622/09 Category Theory (2).....	11
8. 2-PMS-116/19 Cluster analysis and data classification.....	12
9. 2-MAT-232/09 Computer Algebra (1).....	13
10. 2-MAT-241/09 Computer Algebra (2).....	14
11. 2-EFM-117/12 Convex Optimization.....	15
12. 2-INF-178/15 Cryptology (1).....	17
13. 2-MAT-214/09 Differential Topology.....	19
14. 2-MAT-991/15 Diploma Thesis Defense ( <b>state exam</b> ).....	21
15. 2-MAT-920/15 Diploma Thesis Seminar.....	22
16. 2-MAT-111/15 Dynamical Systems.....	23
17. 1-MXX-233/13 English Conversation Course (1).....	24
18. 1-MXX-234/13 English Conversation Course (2).....	25
19. 2-MAT-215/12 Field Theory (1).....	26
20. 2-MAT-216/12 Field Theory (2).....	27
21. 1-EFM-370/00 Financial Mathematics.....	28
22. 2-MAT-315/19 Finite Difference Methods for Differential Equations.....	29
23. 2-MAT-323/09 Finite Elements Method (1).....	30
24. 2-MAT-334/10 Finite Elements Method (2).....	31
25. 1-MXX-141/00 French Language (1).....	32
26. 1-MXX-142/00 French Language (2).....	33
27. 1-MXX-241/00 French Language (3).....	34
28. 1-MXX-242/00 French Language (4).....	35
29. 2-MAT-115/12 Functional Analysis.....	36
30. 2-MAT-211/15 General Topology.....	38
31. 1-MXX-151/00 German Language (1).....	39
32. 1-MXX-152/00 German Language (2).....	40
33. 1-MXX-251/00 German Language (3).....	41
34. 1-MXX-252/00 German Language (4).....	42
35. 2-MAT-401/12 Graph Algorithms.....	43
36. 2-MAT-225/15 Group Theory Applications in Discrete Mathematics.....	44
37. 2-MAT-314/15 Handling of Modern Software in Numerical Mathematics.....	45
38. 2-MAT-910/15 Individual Work on Final Thesis (1).....	46
39. 2-MAT-911/15 Individual Work on Final Thesis (2).....	47
40. 2-MAT-114/15 Integral Transforms and Special Functions.....	48
41. 2-MAT-601/09 Introduction to Non-standard Analysis.....	49
42. 2-MAT-224/09 Linear Codes.....	50
43. 2-PMS-118/10 Markov Processes (1).....	51
44. 2-PMS-119/15 Markov Processes(2).....	53
45. 2-MAT-616/15 Mathematical Fundamentals of Quantum Theory.....	54
46. 1-FYZ-677/15 Mathematical Physics.....	55
47. 2-MAT-951/15 Mathematics ( <b>state exam</b> ).....	56

48. 2-MAT-122/15	Nonlinear Functional Analysis.....	57
49. 2-MAT-311/15	Nonlinear Programming.....	58
50. 2-MAT-624/09	Number Theory (2).....	59
51. 2-MAT-327/12	Numerical Modelling in Optimization Problems.....	60
52. 2-MAT-112/15	Partial Differential Equations (1).....	61
53. 2-MAT-121/09	Partial Differential Equations (2).....	62
54. 2-MAT-606/09	Philosophical Questions of Mathematics Fundamentals.....	63
55. 2-MXX-110/00	Physical Education and Sport (1).....	64
56. 2-MXX-120/00	Physical Education and Sport (2).....	65
57. 2-MXX-210/00	Physical Education and Sport (3).....	66
58. 2-MXX-220/00	Physical Education and Sport (4).....	67
59. 2-EFM-152/15	Principles of Mathematical Modelling in Science and Engineering.....	68
60. 2-FTF-111/16	Representations of Groups.....	69
61. 1-MXX-161/00	Russian Language (1).....	70
62. 1-MXX-162/00	Russian Language (2).....	71
63. 1-MXX-261/00	Russian Language (3).....	72
64. 1-MXX-262/00	Russian Language (4).....	73
65. 2-MAT-619/09	Selected Chapters in the Theory of Functions of Complex Variable.....	74
66. 2-MAT-113/09	Selected Parts of Real Analysis.....	76
67. 2-MAT-213/09	Selected Topics in Algebra (1).....	77
68. 2-MAT-222/15	Selected Topics in Algebra (2).....	78
69. 2-MAT-231/09	Selected Topics in Cryptology.....	79
70. 2-MAT-626/19	Selected Topics of Algebraic Topology.....	80
71. 2-MAT-132/15	Selected Topics of Mathematical Physics.....	81
72. 2-MAT-313/19	Selected Topics of Numerical Algebra.....	82
73. 2-MAT-620/09	Seminar in Algebraic and Differential Topology (1).....	83
74. 2-MAT-625/09	Seminar in Algebraic and Differential Topology (2).....	84
75. 2-MAT-602/09	Seminar in Graph Theory (1).....	85
76. 2-MAT-611/09	Seminar in Graph Theory (2).....	86
77. 2-MAT-603/09	Seminar in Number Theory (1).....	87
78. 2-MAT-612/09	Seminar in Number Theory (2).....	88
79. 1-MXX-171/20	Slovak Language for Foreign Students (1).....	89
80. 1-MXX-172/20	Slovak Language for Foreign Students (2).....	90
81. 1-MXX-271/20	Slovak Language for Foreign Students (3).....	91
82. 1-MXX-272/20	Slovak Language for Foreign Students (4).....	92
83. 2-MAT-307/11	Solutions of Tasks in Optimal Management and of Inversion Problems.....	93
84. 2-MAT-332/09	Solving of Convection-Diffusion Problems.....	94
85. 2-MAT-341/15	Solving of Engineering Problems by Numerical Software.....	95
86. 2-MXX-115/17	Sports in Natur (1).....	96
87. 2-MXX-116/18	Sports in Natur (2).....	97
88. 2-PMS-123/10	Stochastic Simulation Methods.....	98
89. 2-MAT-142/14	Transport, conservation laws and equations of motion.....	99
90. 2-MMN-140/15	Unconventional Application of Mathematical Analysis.....	100
91. 2-MAT-212/09	Universal Algebras and Lattices (1).....	101
92. 2-MAT-221/09	Universal Algebras and Lattices (2).....	102
93. 2-MAT-618/09	Universal Algebras and Lattices (3).....	103
94. 2-MAT-623/09	Universal Algebras and Lattices (4).....	104
95. 2-MAT-325/12	Variational Methods in Differential Equations.....	105

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-610/09		<b>Course title:</b> Algebraic Number Theory			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 14					
A	B	C	D	E	FX
64,29	7,14	21,43	7,14	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Martin Mačaj, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava							
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics							
<b>Course ID:</b> FMFL.KAG/2-MAT-223/09			<b>Course title:</b> Algebraic Topology				
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 56 <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 6							
<b>Recommended semester:</b> 2.							
<b>Educational level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b> examination							
<b>Learning outcomes:</b> Subject aim: to acquaint students with basic ideas, methods and some applications of algebraic topology.							
<b>Class syllabus:</b> The problem of homeomorphy. Constructions of new topological spaces by forming quotient spaces. Attaching a cell to a topological space. Surfaces and topological manifolds. Path-connectedness. Homotopy. Fundamental group. Basic homology theory. Homology groups of spheres and their applications. Cohomology groups, cohomology ring, and applications.							
<b>Recommended literature:</b> A. Hatcher, Algebraic Topology. Cambridge University Press 2002 A. Kriegl, Algebraic Topology. Lecture Notes. University of Vienna, Vienna 2008, accessible at <a href="http://www.mat.univie.ac.at/~kriegl/Skripten/alg-top.pdf">http://www.mat.univie.ac.at/~kriegl/Skripten/alg-top.pdf</a> W. Massey, A Basic Course in Algebraic Topology. Springer-Verlag, New York 1991 E. Spanier, Algebraic Topology. Springer-Verlag, New York 1995							
<b>Languages necessary to complete the course:</b> English							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 38							
A	ABS	B	C	D	E	FX	NEABS
50,0	0,0	26,32	10,53	7,89	5,26	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Július Korbaš, CSc., doc. Mgr. Tibor Macko, PhD.							
<b>Last change:</b> 10.04.2017							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFL.KI/2-INF-278/18	<b>Course title:</b> Analytic and Enumerative Combinatorics
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 56 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 6	
<b>Recommended semester:</b> 2., 4.	
<b>Educational level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Recommended prerequisites:</b> 2-INF-277/18 Complex Analysis for Computer Scientists or 1-MAT-416/15 Theory of Complex Variable Functions	
<b>Course requirements:</b> homework assignments, written and oral exam Scale of assessment (preliminary/final): 40/60	
<b>Learning outcomes:</b> Students will understand the key methods of analytic combinatorics and will be able to apply their theoretical knowledge on the fields of combinatorial enumeration and algorithm analysis. They will also get acquainted with selected techniques and results of classical enumerative combinatorics.	
<b>Class syllabus:</b> The algebra of formal power series. Unlabelled and labelled combinatorial structures, ordinary and exponential generating functions, the symbolic method and its connection to formal languages. Generating functions as analytical objects, their singularities, Pringsheim's theorem. Singularity analysis and its applications. Coefficients of rational, meromorphic, and algebraic functions. The saddle-point method and its applications. Multivariate analytic combinatorics. Selected topics in classical enumerative combinatorics: Cayley's formula, Möbius inversion over locally finite posets, Pólya's theory.	
<b>Recommended literature:</b> Electronic materials on the course website. Analytic Combinatorics / Philippe Flajolet, Robert Sedgewick. Cambridge : Cambridge University Press, 2009 Notes on Counting: An Introduction to Enumerative Combinatorics / Peter J. Cameron. Cambridge : Cambridge University Press, 2017 Analytic Combinatorics: A Multidimensional Approach / Marni Mishna. Boca Raton : CRC Press, 2019 Algorithmic and Symbolic Combinatorics / Stephen Melczer. Cham : Springer, 2021 Analytic Combinatorics in Several Variables / Robin Pemantle, Mark C. Wilson. New York : Cambridge University Press, 2013	

Introductory Combinatorics, 5th ed. / Richard A. Brualdi. Upper Saddle River : Pearson, 2010  
 Kapitoly z diskrétní matematiky, 3rd ed. / Jiří Matoušek, Jaroslav Nešetřil. Prague : Karolinum, 2007  
 Algebraic Combinatorics, 2nd ed. / Richard P. Stanley. Cham : Springer, 2018  
 Discrete Calculus: Methods for Counting / Carlo Mariconda, Alberto Tonolo. Cham : Springer, 2016

**Languages necessary to complete the course:**

Slovak, English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 2

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

**Lecturers:** RNDr. Peter Kostolányi, PhD.

**Last change:** 18.06.2021

**Approved by:**

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/2-MAT-226/14		<b>Course title:</b> Applications of set theory			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b> Students will be able to apply more advanced set-theoretic techniques (mainly Zorn's lemma and transfinite induction) to problems from various areas of mathematics.					
<b>Class syllabus:</b> Axiom of choice and its equivalents. Zorn lemma and its applications. Ordinals, transfinite induction and its applications. Almost disjoint systems, infinite trees, ultrafilters.					
<b>Recommended literature:</b> Combinatorial set theory : With a gentle introduction to forcing / Lorenz J. Halbeisen. London : Springer, 2012					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 4					
A	B	C	D	E	FX
75,0	0,0	0,0	0,0	0,0	25,0
<b>Lecturers:</b> RNDr. Martin Sleziak, PhD.					
<b>Last change:</b> 11.04.2021					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAMŠ/2-MAT-123/15	<b>Course title:</b> Calculus of Variations
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 6	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> II., III.	
<b>Prerequisites:</b>	
<b>Antirequisites:</b> FMFI.KAMŠ/2-MAT-123/09	
<b>Course requirements:</b> Preliminary grading: homeworks. Exam: written and oral. Grading: A 90%, B 80%, C 70%, D 60%, E 50%. Scale of assessment (preliminary/final): 20/80	
<b>Learning outcomes:</b> The students will learn to differentiate variational integrals and related Nemytskii mappings, they will be able to verify necessary and sufficient conditions guaranteeing the existence of global and local extrema of particular functionals, to find extrema in the case of one-dimensional integrals and find out, whether these extrema are weak or strong.	
<b>Class syllabus:</b> Differentiability of the Nemytskii mapping, basic existence theorem for global extrema, necessary and sufficient conditions for local extrema, constrained extrema, the Euler and Jacobi equations, necessary and sufficient conditions for strong and weak extrema of one-dimensional integrals, investigation of critical points of particular functionals.	
<b>Recommended literature:</b> B. Dacorogna: Direct methods in the calculus of variations, Springer, Berlin - Heidelberg 2008. M. Struwe: Variational methods, Springer, Berlin - Heidelberg 2008. J.L. Troutman: Variational calculus and Optimal Control, Springer, New York 1996. G. Buttazzo, M. Giaquinta, S. Hildebrandt: One-dimensional variational problems, Clarendon Press, Oxford 1998.	
<b>Languages necessary to complete the course:</b> English	
<b>Notes:</b>	



<b>Past grade distribution</b>							
Total number of evaluated students: 9							
A	ABS	B	C	D	E	FX	NEABS
55,56	0,0	22,22	0,0	11,11	0,0	11,11	0,0
<b>Lecturers:</b> prof. RNDr. Pavol Quittner, DrSc.							
<b>Last change:</b> 28.04.2017							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava							
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics							
<b>Course ID:</b> FMFL.KAG/2-MAT-617/09				<b>Course title:</b> Category Theory (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 3							
<b>Recommended semester:</b> 3.							
<b>Educational level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 25							
A	ABS	B	C	D	E	FX	NEABS
96,0	0,0	0,0	0,0	0,0	0,0	4,0	0,0
<b>Lecturers:</b> doc. Mgr. Tibor Macko, PhD.							
<b>Last change:</b> 02.06.2015							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava							
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics							
<b>Course ID:</b> FMFL.KAG/2-MAT-622/09				<b>Course title:</b> Category Theory (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 3							
<b>Recommended semester:</b> 4.							
<b>Educational level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 11							
A	ABS	B	C	D	E	FX	NEABS
100,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. Mgr. Tibor Macko, PhD.							
<b>Last change:</b> 02.06.2015							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/2-PMS-116/19		<b>Course title:</b> Cluster analysis and data classification			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KAMŠ/2-PMS-116/10					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 486					
A	B	C	D	E	FX
49,59	24,49	12,14	5,97	5,14	2,67
<b>Lecturers:</b> doc. Mgr. Radoslav Harman, PhD.					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-232/09		<b>Course title:</b> Computer Algebra (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 42					
A	B	C	D	E	FX
85,71	9,52	2,38	0,0	2,38	0,0
<b>Lecturers:</b> doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-241/09		<b>Course title:</b> Computer Algebra (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 44					
A	B	C	D	E	FX
81,82	6,82	9,09	0,0	2,27	0,0
<b>Lecturers:</b> doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFL.KAMŠ/2-EFM-117/12	<b>Course title:</b> Convex Optimization
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> II.	
<b>Prerequisites:</b>	
<b>Recommended prerequisites:</b> Nonlinear programming, Linear programming	
<b>Course requirements:</b> Homeworks, Project presentation Grading A 91%, B 81%, C 71%, D 61%, E 51% Scale of assessment (preliminary/final): 60/40	
<b>Learning outcomes:</b> Student learn the basic theory of convex analysis and convex (conic) optimization, basic classes of convex conic programming, and methods for solving them, they are able to use Matlab and CVX modeling system for solving convex problems, they are able to solve various practical problems and applications.	
<b>Class syllabus:</b> Convex optimization problems in standard form Generalization of standard convex problems Conic convex problems (SDP, SOCP,..) Geometry of convex cones Duality theory for conic linear programs Applications of convex conic problems Conic relaxations Interior point methods	
<b>Recommended literature:</b> 1. Boyd, Vandenberghe: Convex Optimization, Cambridge Univ.Press 2004 2. CVX: Matlab Software for Disciplined Convex Programming <a href="http://www.stanford.edu/~boyd/cvxbook">www.stanford.edu/~boyd/cvxbook</a> 3. Ben-Tal, Nemirovski: Lectures on Modern Convex Optimization, SIAM 2001	
<b>Languages necessary to complete the course:</b> Slovak, English	
<b>Notes:</b>	

<b>Past grade distribution</b>					
Total number of evaluated students: 90					
A	B	C	D	E	FX
73,33	11,11	7,78	3,33	2,22	2,22
<b>Lecturers:</b> doc. RNDr. Mária Trnovská, PhD.					
<b>Last change:</b> 16.05.2018					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KI/2-INF-178/15		<b>Course title:</b> Cryptology (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 56 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 6					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Homewrok assignments, test, final written exam Scale of assessment (preliminary/final): 0/100					
<b>Learning outcomes:</b> The students will have the knowledge of basic cryptographic constructions; they will understand security guarantees provided by these constructions, and assumptions required for their security. The students will be able to choose a suitable cryptographic construction for given application / information system.					
<b>Class syllabus:</b> symmetric ciphers (block and stream ciphers), asymmetric ciphers, underlying problems for asymmetric constructions, hash functions, message authentication codes, digital signatures, passwords, secret sharing schemes, cryptographic protocols and related attacks, zero-knowledge proofs					
<b>Recommended literature:</b> Cryptography : Theory and practice / Douglas R. Stinson. Boca Raton, Fla. : Chapman & Hall, 2006 Cryptography, An Introduction: Third Edition / Nigel Smart ( <a href="http://www.cs.bris.ac.uk/~nigel/Crypto_Book/">http://www.cs.bris.ac.uk/~nigel/Crypto_Book/</a> )					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 69					
A	B	C	D	E	FX
13,04	10,14	17,39	21,74	28,99	8,7
<b>Lecturers:</b> doc. RNDr. Martin Stanek, PhD.					
<b>Last change:</b> 21.08.2015					

**Approved by:**

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava							
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics							
<b>Course ID:</b> FMFL.KAG/2-MAT-214/09			<b>Course title:</b> Differential Topology				
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 4							
<b>Recommended semester:</b> 1.							
<b>Educational level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b> examination							
<b>Learning outcomes:</b> Subject aim: to acquaint students with basic ideas, methods and some applications of differential topology.							
<b>Class syllabus:</b> A review of selected basic notions of general topology. Differentiable manifolds and differentiable maps. Tangent vector space. The differential of a differentiable map at a point. Tangent bundles. Submanifolds. Immersions and embeddings of manifolds. Inverse Function Theorem and its corollaries; transversality. Regular and critical points, regular and critical values, Sard's Theorem. Proof of the fundamental theorem of algebra.							
<b>Recommended literature:</b> M. Hirsch, Differential Topology. Springer-Verlag, New York 1976. J. Milnor, Topology from the Differential Viewpoint, The Univ. Press of Virginia, Charlottesville 1965. I. Singer, J. Thorpe, Lecture Notes on Elementary Topology and Geometry, Scott, Foresman and Co., Glenview, Illinois 1967. F. Warner, Foundations of Differentiable Manifolds and Lie Groups. Springer-Verlag, Berlin 1983.							
<b>Languages necessary to complete the course:</b> English							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 40							
A	ABS	B	C	D	E	FX	NEABS
60,0	0,0	7,5	20,0	2,5	5,0	5,0	0,0
<b>Lecturers:</b> prof. RNDr. Július Korbaš, CSc., doc. Mgr. Tibor Macko, PhD.							

<b>Last change:</b> 10.04.2017
<b>Approved by:</b>

## STATE EXAM DESCRIPTION

<b>University:</b> Comenius University in Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFL.KMANM/2- MAT-991/15	<b>Course title:</b> Diploma Thesis Defense
<b>Number of credits:</b> 12	
<b>Educational level:</b> II.	
<b>State exam syllabus:</b>	
<b>Last change:</b> 02.06.2015	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-920/15		<b>Course title:</b> Diploma Thesis Seminar			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-920/11					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 20					
A	B	C	D	E	FX
90,0	0,0	0,0	0,0	5,0	5,0
<b>Lecturers:</b> prof. RNDr. Ján Filo, CSc., doc. RNDr. Eugen Vizsus, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-111/15		<b>Course title:</b> Dynamical Systems			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-111/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 19					
A	B	C	D	E	FX
57,89	5,26	21,05	5,26	0,0	10,53
<b>Lecturers:</b> prof. RNDr. Milan Medved', DrSc., prof. RNDr. Michal Fečkan, DrSc., RNDr. František Jaroš, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-233/13		<b>Course title:</b> English Conversation Course (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1., 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The content of the course is general English. The language level is B2/C1 (Upper-Intermediate/Lower Advanced).					
<b>Recommended literature:</b> Selection of materials from Inside Out Upper-Intermediate, Cutting Edge Upper-Intermediate, New English File Upper-Intermediate, British and American newspapers and journals Recordings: authentic and semi-authentic (source: BBC, CNN, coursebook recordings)					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 193					
A	B	C	D	E	FX
65,28	13,99	7,25	2,07	1,55	9,84
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-234/13		<b>Course title:</b> English Conversation Course (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2., 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The course is a follow-up to the Conversation Course in English (1). The content of the course is general English. The language level is B2/C1 (Upper-Intermediate/Lower Advanced).					
<b>Recommended literature:</b> Selection of materials from Inside Out Upper-Intermediate, Cutting Edge Upper-Intermediate, New English File Upper-Intermediate, British and American newspapers and journals Recordings: authentic and semi-authentic (source: BBC, CNN, coursebook recordings)					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 119					
A	B	C	D	E	FX
73,11	15,13	4,2	1,68	0,0	5,88
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/2-MAT-215/12		<b>Course title:</b> Field Theory (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 20/80					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Field extensions. Finite fields. Introduction to the Galois theory. Fundamental theorem of algebra.					
<b>Recommended literature:</b> Birkhoff, G., MacLane, S: Prehľad modernej algebry Lang, S.: Algebra Niederreiter, H., Lidl, R.: Theory of fields Crandall, R., Pomerance, C.: Prime numbers, a computational perspective					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 25					
A	B	C	D	E	FX
52,0	16,0	12,0	4,0	8,0	8,0
<b>Lecturers:</b> doc. RNDr. Martin Mačaj, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-216/12		<b>Course title:</b> Field Theory (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 20/80					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Generation of finite fields. Rabin-Miller and Agrawal-Kayena-Saxena test for primality. Applications in cryptography: RSA and XTR. Wedderburn's theorem.					
<b>Recommended literature:</b> Birkhoff, G., MacLane, S: Prehl'ad modernej algebry Lang, S.: Algebra Niederreiter, H., Lidl, R.: Theory of fields Crandall, R., Pomerance, C.: Prime numbers, a computational perspective					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 22					
A	B	C	D	E	FX
77,27	18,18	4,55	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Martin Mačaj, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/1-EFM-370/00		<b>Course title:</b> Financial Mathematics			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b> FMFI.KAMŠ/1-EFM-250/00 - Mathematical Analysis (4) and leboFMFI.KAMŠ/1-DAV-102/20 - Calculus (1)					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Coupon and zero-coupon bonds, term structure of interest rates, bootstrap method, yield to maturity, forward rates, duration. Binomial tree model, risk-neutral probabilities, risk-neutral valuation formula, Black-Scholes formula, pricing of american options. Aversion to risk, properties of utility functions, utility functions and mean-variance analysis, the problem of Markowitz, Capital Asset Pricing Model (CAMP), factor models.					
<b>Recommended literature:</b> Baxter M., Rennie A.: Financial Calculus Hull J.: Options, Futures and Other Derivatives Luenberger D.: Investment Science					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 581					
A	B	C	D	E	FX
58,0	22,38	10,15	6,02	3,1	0,34
<b>Lecturers:</b> doc. Mgr. Igor Melicherčík, PhD., Mgr. Tatiana Jašurková					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-315/19		<b>Course title:</b> Finite Difference Methods for Differential Equations			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 28 / 14 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-EFM-101/15					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 25					
A	B	C	D	E	FX
48,0	12,0	16,0	12,0	12,0	0,0
<b>Lecturers:</b> Mgr. Jela Babušíková, PhD., Mgr. Katarína Boďová, PhD.					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-323/09		<b>Course title:</b> Finite Elements Method (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b> FMFI.KMANM/2-MAT-325/12 - Variational Methods in Differential Equations					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Variational formulation for linear,elliptic boundary value problems; Ritz and Galerkin method (Lemma of Cea ); construction of basis functions for finit dimensional approximation spaces; local and global variational formulation; assembling; convergence; error estimates for 1D and 2D linear interpolation.					
<b>Recommended literature:</b> M. Slodička: Metóda konečných prvkov; (v tlači) je v elektronickej forme dostupná J. Kačur: Numerické metódy riešenia PDR (v elektronickej forme)					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 40					
A	B	C	D	E	FX
42,5	25,0	17,5	10,0	0,0	5,0
<b>Lecturers:</b> prof. RNDr. Jozef Kačur, DrSc., prof. RNDr. Ján Filo, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-334/10		<b>Course title:</b> Finite Elements Method (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b> FMFI.KMANM/2-MAT-323/09 - Finite Elements Method (1)					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 30/70					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Variational crimes; 1. and 2. Lemma of Strang; approximation of boundary conditions; nonconformal method of finite elements; Mixed finite element method; practical solution using software PLTMG; solution of stationary 2D problems in practical implementation.					
<b>Recommended literature:</b> M. Slodička: Metóda konečných prvkov; (v tlači) je v elektronickej forme dostupná J. Kačur: Numerické metódy riešenia PDR (v elektronickej forme)					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 26					
A	B	C	D	E	FX
50,0	0,0	26,92	7,69	11,54	3,85
<b>Lecturers:</b> prof. RNDr. Jozef Kačur, DrSc., prof. RNDr. Ján Filo, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-141/00		<b>Course title:</b> French Language (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b> Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 421					
A	B	C	D	E	FX
45,13	20,43	19,48	9,03	1,9	4,04
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-142/00		<b>Course title:</b> French Language (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject continues the program of French language (1) and provides courses of essential and intermediate French language.					
<b>Recommended literature:</b> Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2 Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983 Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 261					
A	B	C	D	E	FX
38,31	25,67	19,92	10,34	2,68	3,07
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-241/00		<b>Course title:</b> French Language (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject provides a course of intermediate French language, covering not only general, but also technical language.					
<b>Recommended literature:</b> Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2 Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983 Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 101					
A	B	C	D	E	FX
37,62	28,71	21,78	6,93	0,99	3,96
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-242/00		<b>Course title:</b> French Language (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject provides a course of intermediate French covering not only general, but also technical French language.					
<b>Recommended literature:</b> Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2 Blažena Srncová: Učebnica francúzštiny pre študentov Matematicko-fyzikálnej fakulty , UK 1983 Kolektív Lingea, s.r.o.: Slovensko-francúzsky hovorník, Bratislava 2008 Zarha Lahmidi: Sciences-techniques.com, ISBN 209-0331186-0, CLE international, 2005					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 71					
A	B	C	D	E	FX
39,44	33,8	18,31	2,82	1,41	4,23
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/2-MAT-115/12		<b>Course title:</b> Functional Analysis			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Preliminary grading: homeworks. Exam: written and oral. Grading: A 90%, B 80%, C 70%, D 60%, E 50%. Scale of assessment (preliminary/final): 20/80					
<b>Learning outcomes:</b> The students will learn to determine the spectrum of certain types of linear operators, the convergence of operators and functions in various topologies and function spaces, and perform basic operations with distributions.					
<b>Class syllabus:</b> Compact operators and Fredholm's alternative, spectrum of closed, continuous, compact and self-adjoint operators, locally convex spaces and continuous linear operators in these spaces, weak topologies and compactness in weak topologies, distributions.					
<b>Recommended literature:</b> W. Rudin: Functional Analysis, McGraw-Hill, New York 1973. K. Yosida: Functional Analysis, Springer, Berlin, Heidelberg 1980. A.E. Taylor: Introduction to Functional Analysis, John Wiley & Sons, New York 1958. A.W. Naylor & G.R. Sell: Linear operator theory in engineering and science, Holt, Rinehart & Winston, New York, 1971.					
<b>Languages necessary to complete the course:</b> English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 27					
A	B	C	D	E	FX
55,56	14,81	22,22	3,7	3,7	0,0
<b>Lecturers:</b> prof. RNDr. Pavol Quittner, DrSc.					

<b>Last change:</b> 28.04.2017
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava							
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics							
<b>Course ID:</b> FMFI.KMANM/2-MAT-211/15				<b>Course title:</b> General Topology			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 56 <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 5							
<b>Recommended semester:</b> 1.							
<b>Educational level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Antirequisites:</b> FMFI.KAGDM/2-MAT-211/09							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 12							
A	ABS	B	C	D	E	FX	NEABS
66,67	0,0	25,0	0,0	0,0	0,0	8,33	0,0
<b>Lecturers:</b> RNDr. Martin Sleziak, PhD.							
<b>Last change:</b> 11.04.2021							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-151/00		<b>Course title:</b> German Language (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b> Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 717					
A	B	C	D	E	FX
35,43	27,62	19,8	9,21	2,79	5,16
<b>Lecturers:</b> Mgr. Alexandra Maďarová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-152/00		<b>Course title:</b> German Language (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The course continues the program of German language (1). German language is taught at three levels: beginner, intermediate, advanced.					
<b>Recommended literature:</b> Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 468					
A	B	C	D	E	FX
35,47	20,51	20,73	13,46	3,42	6,41
<b>Lecturers:</b> Mgr. Alexandra Maďarová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-251/00		<b>Course title:</b> German Language (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject continues the program of German language (2). It provides a course of intermediate and advanced German language.					
<b>Recommended literature:</b> Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe. Aus moderner Technik und Naturwissenschaft, 1999, Max Hueber Verlag, D-85737, ISBN 3-19-001629-1					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 158					
A	B	C	D	E	FX
39,24	26,58	21,52	6,96	2,53	3,16
<b>Lecturers:</b> Mgr. Alexandra Maďarová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-252/00		<b>Course title:</b> German Language (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject continues the program of German language (3). It provides a course of intermediate and advanced German language.					
<b>Recommended literature:</b> Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe. Vilma Václavíková: Nemčina pre študentov MFF UK, Vysokoškolský učebný text pre potrebu študentov KJP, č. 9793/1982 C VIII/2, 1983					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 86					
A	B	C	D	E	FX
39,53	25,58	12,79	12,79	3,49	5,81
<b>Lecturers:</b> Mgr. Alexandra Maďarová					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KMANM/2-MAT-401/12		<b>Course title:</b> Graph Algorithms			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 14					
A	B	C	D	E	FX
64,29	14,29	7,14	0,0	14,29	0,0
<b>Lecturers:</b> prof. RNDr. Ján Plesník, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-225/15		<b>Course title:</b> Group Theory Applications in Discrete Mathematics			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 56 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 11					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Róbert Jajcay, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM+KAMŠ/2-MAT-314/15		<b>Course title:</b> Handling of Modern Software in Numerical Mathematics			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-314/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 16					
A	B	C	D	E	FX
87,5	12,5	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Peter Guba, PhD., Mgr. Jela Babušíková, PhD.					
<b>Last change:</b> 27.04.2017					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-910/15		<b>Course title:</b> Individual Work on Final Thesis (1)			
<b>Educational activities:</b> <b>Type of activities:</b> independent work <b>Number of hours:</b> <b>per week:</b> <b>per level/semester:</b> 100s <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-910/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 21					
A	B	C	D	E	FX
80,95	4,76	0,0	4,76	9,52	0,0
<b>Lecturers:</b> prof. RNDr. Ján Filo, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-911/15		<b>Course title:</b> Individual Work on Final Thesis (2)			
<b>Educational activities:</b> <b>Type of activities:</b> independent work <b>Number of hours:</b> <b>per week:</b> <b>per level/semester:</b> 100s <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-911/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 20					
A	B	C	D	E	FX
80,0	5,0	15,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Ján Filo, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/2-MAT-114/15		<b>Course title:</b> Integral Transforms and Special Functions			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1., 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 33					
A	B	C	D	E	FX
42,42	27,27	6,06	3,03	6,06	15,15
<b>Lecturers:</b> prof. RNDr. Marek Fila, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-601/09		<b>Course title:</b> Introduction to Non-standard Analysis			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Pavol Zlatoš, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-224/09		<b>Course title:</b> Linear Codes			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 62					
A	B	C	D	E	FX
79,03	16,13	3,23	0,0	1,61	0,0
<b>Lecturers:</b> doc. RNDr. Róbert Jajcay, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/2-PMS-118/10		<b>Course title:</b> Markov Processes (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Preliminary semester evaluation: test and homeworks Examination: written examination Approximate grade thresholds: A 90%, B 80%, C 70%, D 60%, E 50%					
<b>Learning outcomes:</b> After completing the course the student will master elementary discrete time Markov chains models. He will be able to classify states of a Markov chain and calculate stationary probability distributions.					
<b>Class syllabus:</b> Markov property, transition probabilities, transition matrix, Chapman Kolmogorov equation, irreducibility of a chain. Classification of states, recurrent states, transient states, null recurrent states and positive recurrent states, periodicity. Existence of stationary distribution, ergodic distribution, necessary and sufficient conditions for ergodicity. Random walks, branching processes, absorption probabilities, mean time to absorption. Markov reward chains algorithms and Markov Chain Monte Carlo.					
<b>Recommended literature:</b> Kalas, J: Markovove reťazce, skriptá MFF UK Norris, J.R.: Markov chains (1998) Ross, S.M.: Introduction to probability models (2006)					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 240					
A	B	C	D	E	FX
21,67	22,08	26,67	20,83	7,5	1,25
<b>Lecturers:</b> doc. RNDr. Katarína Janková, CSc., doc. Mgr. Pavol Bokes, PhD., Candan Çelik					
<b>Last change:</b> 02.05.2017					

**Approved by:**

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/2-PMS-119/15		<b>Course title:</b> Markov Processes(2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 28 / 14 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b> After completing the course students will know properties of homogeneous Markov chains with continuous time. They will be able to use models based on these chains.					
<b>Class syllabus:</b> Markov property for continuous time chains, probabilities of transition, initial distribution, Chapman Kolmogorov equation. Forces of transition and their properties, backward and forward systems of Kolmogorov differential equations. Stationary and ergodic distribution of the chain. Models of linear growth, birth and death chains, Poisson process. Characterization of processes using jump chain and holding times. Queueing systems: M/M/n, M/M/infinity. Imbedded chain technique for M/G/1. Pollaczek Chinchin formula.					
<b>Recommended literature:</b> Janková, K., Kilianová, S., Brunovský, P., Bokes, P.: Markovove reťazce a ich aplikácie. Epos 2014. Norris, J.:Markov Chains.Cambridge University Press 1997.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 88					
A	B	C	D	E	FX
25,0	14,77	29,55	22,73	5,68	2,27
<b>Lecturers:</b> doc. RNDr. Katarína Janková, CSc., doc. Mgr. Pavol Bokes, PhD., Candan Çelik					
<b>Last change:</b> 20.02.2018					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KMANM/2-MAT-616/15		<b>Course title:</b> Mathematical Fundamentals of Quantum Theory			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 0					
A	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> RNDr. Michal Demetrian, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTF/1-FYZ-677/15		<b>Course title:</b> Mathematical Physics			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 4 / 2 <b>per level/semester:</b> 56 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 7					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 37					
A	B	C	D	E	FX
40,54	24,32	13,51	5,41	13,51	2,7
<b>Lecturers:</b> doc. RNDr. Marián Fecko, PhD.					
<b>Last change:</b> 04.10.2016					
<b>Approved by:</b>					

## STATE EXAM DESCRIPTION

<b>University:</b> Comenius University in Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFL.KMANM/2- MAT-951/15	<b>Course title:</b> Mathematics
<b>Number of credits:</b> 6	
<b>Educational level:</b> II.	
<b>State exam syllabus:</b>	
<b>Last change:</b> 22.01.2018	
<b>Approved by:</b>	



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava							
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics							
<b>Course ID:</b> FMFI.KMANM/2-MAT-122/15			<b>Course title:</b> Nonlinear Functional Analysis				
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 5							
<b>Recommended semester:</b> 2.							
<b>Educational level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-122/09							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 12							
A	ABS	B	C	D	E	FX	NEABS
83,33	0,0	0,0	0,0	0,0	0,0	16,67	0,0
<b>Lecturers:</b> prof. RNDr. Michal Fečkan, DrSc.							
<b>Last change:</b> 02.06.2015							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/2-MAT-311/15		<b>Course title:</b> Nonlinear Programming			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KAMŠ/2-MAT-311/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 8					
A	B	C	D	E	FX
62,5	12,5	0,0	0,0	25,0	0,0
<b>Lecturers:</b> doc. RNDr. Mária Trnovská, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/2-MAT-624/09		<b>Course title:</b> Number Theory (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b> Students will learn to solve basic types of Diophantine equations. They will be able to use various types of densities to compare various subsets of the set of positive integers.					
<b>Class syllabus:</b> Various types of densities (Schnirelman, asymptotic and logarithmic density). Diophantine equations and Pythagorean triples. Results on expressing integers as sums of squares. Minkowski theorem. Cantor's expansions of real numbers. Proofs of rrationality of some real numbers.					
<b>Recommended literature:</b> Elementary number theory / Gareth A. Jones, J. Mary Jones. London : Springer, 1998					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 29					
A	B	C	D	E	FX
93,1	3,45	0,0	0,0	0,0	3,45
<b>Lecturers:</b> RNDr. Martin Sleziak, PhD.					
<b>Last change:</b> 31.10.2016					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KMANM/2-MAT-327/12		<b>Course title:</b> Numerical Modelling in Optimization Problems			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 17					
A	B	C	D	E	FX
76,47	0,0	5,88	5,88	5,88	5,88
<b>Lecturers:</b> prof. RNDr. Jozef Kačur, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-112/15		<b>Course title:</b> Partial Differential Equations (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-112/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 16					
A	B	C	D	E	FX
31,25	12,5	31,25	12,5	12,5	0,0
<b>Lecturers:</b> doc. RNDr. Eugen Viszus, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAMŠ/2-MAT-121/09		<b>Course title:</b> Partial Differential Equations (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 30/70					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 1. Spaces involving time. 2. Linear parabolic equations of the second order. 3. Linear hyperbolic equations of the second order. 4. Some methods of theory of nonlinear PDEs.					
<b>Recommended literature:</b> L.C. Evans, Partial Differential Equations, AMS, 1998. F. John, Partial Differential Equations, Springer, 1982. J. David Logan, Applied Partial Differential Equations, Springer, 2004.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 37					
A	B	C	D	E	FX
35,14	24,32	10,81	13,51	16,22	0,0
<b>Lecturers:</b> prof. RNDr. Marek Fila, DrSc., doc. Mgr. Richard Kollár, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-606/09		<b>Course title:</b> Philosophical Questions of Mathematics Fundamentals			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1., 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 8					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Pavol Zlatoš, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KTV/2-MXX-110/00		<b>Course title:</b> Physical Education and Sport (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 28</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Practicing of the students' game skills in collective sports: basketball, volleyball, football, floorball and hockey. Mastering of the basic technique of a particular sport discipline in other sports. In paddling, basic training on still and slightly flowing water. Development of coordination skills, improvement of articular mobility and cardiovascular system.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1594					
A	B	C	D	E	FX
98,56	0,56	0,06	0,0	0,0	0,82
<b>Lecturers:</b> PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/2-MXX-120/00		<b>Course title:</b> Physical Education and Sport (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Practicing of offensive and defensive game combinations and playing with modified rules in collective sports such as basketball, volleyball, football, floorball, hockey. Command of elements of higher difficulty in locomotion skills (swimming - crawl stroke, breast stroke, butterfly stroke, trampoline jumping and aerobics – practicing of areobics compositions, bodybuilding – development of the main muscle groups, paddling on running water. Testing of the level of physical fitness and coordination skills.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1500					
A	B	C	D	E	FX
98,6	0,4	0,07	0,07	0,07	0,8
<b>Lecturers:</b> Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Branislav Nedbálek, PaedDr. Mikuláš Ortutay, Mgr. Ondrej Podkonický, Mgr. Júlia Raábová, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/2-MXX-210/00		<b>Course title:</b> Physical Education and Sport (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> To improve offensive and defensive game combinations in collective sports. Practicing of tactical and technical elements in individual sports. Compensatory exercises to correct wrong body posture. Stretching. Competition rules in sport disciplines.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1219					
A	B	C	D	E	FX
99,02	0,41	0,0	0,0	0,0	0,57
<b>Lecturers:</b> PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/2-MXX-220/00		<b>Course title:</b> Physical Education and Sport (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Sport training for Faculty Championships in a selected sport with modified rules. Selection of sport-talented students into teams of the Faculty Sport League, University League of Bratislava Faculties, and participation in sport events of the Faculty and University.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1060					
A	B	C	D	E	FX
98,96	0,38	0,09	0,09	0,09	0,38
<b>Lecturers:</b> PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Branislav Nedbálek, Mgr. Júlia Raábová, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAMŠ/2-EFM-152/15		<b>Course title:</b> Principles of Mathematical Modelling in Science and Engineering			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 65					
A	B	C	D	E	FX
49,23	21,54	10,77	6,15	3,08	9,23
<b>Lecturers:</b> doc. RNDr. Peter Guba, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTF/2-FTF-111/16		<b>Course title:</b> Representations of Groups			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 4 / 1 <b>per level/semester:</b> 56 / 14 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 7					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 15					
A	B	C	D	E	FX
53,33	0,0	26,67	6,67	13,33	0,0
<b>Lecturers:</b> Mgr. Michal Širaň, PhD., Mgr. Samuel Beznák					
<b>Last change:</b> 04.04.2017					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-161/00		<b>Course title:</b> Russian Language (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject provides a course in Russian language for beginners.					
<b>Recommended literature:</b> The textbook has not been published. It is at students' disposal in an electronic format.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 685					
A	B	C	D	E	FX
58,98	16,35	10,51	4,53	1,9	7,74
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-162/00		<b>Course title:</b> Russian Language (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject continues the program of Russian language (1) and provides a course of Russian for beginners.					
<b>Recommended literature:</b> The textbook has not been published. It is at students' disposal in an electronic format.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 414					
A	B	C	D	E	FX
65,94	15,22	8,7	3,86	0,97	5,31
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-261/00		<b>Course title:</b> Russian Language (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b> The textbook has not been published. It is at students' disposal in an electronic format.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 197					
A	B	C	D	E	FX
70,05	17,77	8,63	2,54	0,0	1,02
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-262/00		<b>Course title:</b> Russian Language (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b> The textbook has not been published. It is at students' disposal in an electronic format.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 142					
A	B	C	D	E	FX
75,35	13,38	7,04	2,82	0,7	0,7
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/2-MAT-619/09		<b>Course title:</b> Selected Chapters in the Theory of Functions of Complex Variable			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Recommended prerequisites:</b> 1-MAT-416 or 1-FYZ-225 - introduction to methods of complex analysis.					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Cauchy type integrals, principal value integral, Hilbert and Fourier transforms, analytic continuation, compactness for families of analytic functions, infinite series (Mittag-Leffler's theorem), infinite products (Weierstrass factorization), Gamma function, Stirling's formula, Riemann Zeta function, conformal maps, Riemann mapping theorem, elliptic functions, modular forms, Riemann surfaces and global analytic functions, branching points, Picard theorem, etc. Covered topics could be customized to match students' interests.					
<b>Recommended literature:</b> M. Ablowitz, A. Fokas: Complex variables. Introduction and Applications, Cambridge Texts in Applied Mathematics, 2003 L. V. Ahlfors: Complex Analysis, McGraw-Hill, New York, 1979. E. Stein, R. Shakarchi: Complex Analysis, Princeton University Press, 2003 A. I. Markushevich: Theory of functions of complex variable, Chelsea, New York, 1977					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 15					
A	B	C	D	E	FX
80,0	13,33	0,0	6,67	0,0	0,0
<b>Lecturers:</b> Mgr. Martin Niepel, PhD.					

<b>Last change:</b> 02.06.2015
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KMANM/2-MAT-113/09		<b>Course title:</b> Selected Parts of Real Analysis			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 28 / 14 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b> A. N. Kolmogorov, S. V. Fomin : Základy teorie funkcí a funkcionální analýzy. SNTL, Praha 1975. J. Lukeš a kol.: Problémy z matematické analýzy. Skripta Univerzity Karlovy, Praha 1982.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 44					
A	B	C	D	E	FX
75,0	13,64	4,55	6,82	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Eugen Viszus, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-213/09		<b>Course title:</b> Selected Topics in Algebra (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 36					
A	B	C	D	E	FX
47,22	13,89	16,67	5,56	13,89	2,78
<b>Lecturers:</b> doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/2-MAT-222/15		<b>Course title:</b> Selected Topics in Algebra (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KAGDM/2-MAT-222/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 9					
A	B	C	D	E	FX
55,56	11,11	0,0	33,33	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-231/09		<b>Course title:</b> Selected Topics in Cryptology			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 40					
A	B	C	D	E	FX
97,5	2,5	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Róbert Jajcay, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFLKAG/2-MAT-626/19		<b>Course title:</b> Selected Topics of Algebraic Topology			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b> FMFLKAG/2-MAT-223/09 - Algebraic Topology					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 2					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. Mgr. Tibor Macko, PhD.					
<b>Last change:</b> 30.04.2019					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-132/15		<b>Course title:</b> Selected Topics of Mathematical Physics			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 28 / 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KAMŠ+KMANM/2-MAT-132/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 6					
A	B	C	D	E	FX
66,67	33,33	0,0	0,0	0,0	0,0
<b>Lecturers:</b> RNDr. Michal Demetrian, PhD., doc. RNDr. Eugen Viszus, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/2-MAT-313/19		<b>Course title:</b> Selected Topics of Numerical Algebra			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 3 <b>per level/semester:</b> 42 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 34					
A	B	C	D	E	FX
29,41	5,88	14,71	26,47	23,53	0,0
<b>Lecturers:</b> doc. RNDr. Andrej Ferko, PhD., Mgr. Martin Niepel, PhD.					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-620/09		<b>Course title:</b> Seminar in Algebraic and Differential Topology (1)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 4					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Július Korbaš, CSc., Mgr. Martin Niepel, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-625/09		<b>Course title:</b> Seminar in Algebraic and Differential Topology (2)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 2					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Július Korbaš, CSc., Mgr. Martin Niepel, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KI/2-MAT-602/09		<b>Course title:</b> Seminar in Graph Theory (1)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 7					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Martin Škoviera, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KI/2-MAT-611/09		<b>Course title:</b> Seminar in Graph Theory (2)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 6					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Martin Škoviera, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-603/09		<b>Course title:</b> Seminar in Number Theory (1)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 16					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> RNDr. Martin Sleziak, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-612/09		<b>Course title:</b> Seminar in Number Theory (2)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 13					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> RNDr. Martin Sleziak, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-171/20		<b>Course title:</b> Slovak Language for Foreign Students (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 18					
A	B	C	D	E	FX
50,0	0,0	0,0	0,0	0,0	50,0
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-172/20		<b>Course title:</b> Slovak Language for Foreign Students (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 16					
A	B	C	D	E	FX
81,25	0,0	0,0	0,0	0,0	18,75
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-271/20		<b>Course title:</b> Slovak Language for Foreign Students (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 2					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-272/20		<b>Course title:</b> Slovak Language for Foreign Students (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 0					
A	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2- MAT-307/11		<b>Course title:</b> Solutions of Tasks in Optimal Management and of Inversion Problems			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 50/50					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Motivating models and formulation of optimal control; minimization methods, differentiation of functionals (differential Gatteaux), Lagrange identity and the adjoint system. Maximum principle of Pontriagin. Numerical approximation of optimal control problems. Solusion of the inverse problems by the method of optimal control. Regularization of ill-posed problems, Tichonoff's regularization. Approximation of optimal control problems by the methods of nonlinear programming . Solution of some models from engineering practice (determination of parameters in heat transfer problems, Stefanovej problem, transport and adsorption).					
<b>Recommended literature:</b> R. P. Fedorenko: Približennoe rešenje zadač optimalnovo upravljenja (rusky) Moskva "Nauka" Fyziko-matematičeskaja literatura 1978.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 26					
A	B	C	D	E	FX
42,31	23,08	7,69	7,69	15,38	3,85
<b>Lecturers:</b> prof. RNDr. Jozef Kačur, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2- MAT-332/09		<b>Course title:</b> Solving of Convection-Diffusion Problems			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Mathematical modelling, construction of variational formulation; existence and uniqueness of the variational solution; numerical approximation by the methods: „up wind“, „ method of characteristics“ operator splitting; convergence of approximations; solution of transport problem, diffusion and adsorption; transport of contaminant in porous media.					
<b>Recommended literature:</b> J.Kacur: Numericke metody riesenia PDE (skripta v elektronickej forme) R.J.Le Veque: Numerical Methods for Conservation Law,Birkhauser,Basel 1992					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 19					
A	B	C	D	E	FX
47,37	15,79	5,26	21,05	10,53	0,0
<b>Lecturers:</b> prof. RNDr. Jaroslav Jaroš, CSc., prof. RNDr. Jozef Kačur, DrSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM+KAMŠ/2-MAT-341/15		<b>Course title:</b> Solving of Engineering Problems by Numerical Software			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-341/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 8					
A	B	C	D	E	FX
87,5	12,5	0,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Peter Guba, PhD., Mgr. Jela Babušíková, PhD.					
<b>Last change:</b> 27.04.2017					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/2-MXX-115/17		<b>Course title:</b> Sports in Natur (1)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 68					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Ondrej Podkonický, Mgr. Júlia Raábová, PhD.					
<b>Last change:</b>					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/2-MXX-116/18		<b>Course title:</b> Sports in Natur (2)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 41					
A	B	C	D	E	FX
92,68	0,0	0,0	0,0	0,0	7,32
<b>Lecturers:</b> Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Ondrej Podkonický, Mgr. Júlia Raábová, PhD.					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/2-PMS-123/10		<b>Course title:</b> Stochastic Simulation Methods			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Evaluation: project, oral examination Approximate grade thresholds: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 80/20					
<b>Learning outcomes:</b> Upon satisfactory completion of the course, students will know basic methods of computer generation of random numbers, general random variables, and random vectors. The students will be able to use the random variates generation for Monte-Carlo sampling, and for the evaluation of complex stochastic systems.					
<b>Class syllabus:</b> Generating realizations of random numbers, random variables and random vectors. Statistical analysis of simulation data. Basic Monte Carlo methods.					
<b>Recommended literature:</b> Ross S: Simulation, Elsevier Academic Press 2006 Fishman GS: Monte Carlo: Concepts, Algorithms and Applications, Springer 1996 Online materials of the lecturer					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 370					
A	B	C	D	E	FX
41,89	23,51	15,14	9,19	6,49	3,78
<b>Lecturers:</b> doc. Mgr. Radoslav Harman, PhD.					
<b>Last change:</b> 08.05.2017					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MAT-142/14		<b>Course title:</b> Transport, conservation laws and equations of motion			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b> FMFI.KMANM/2-MAT-112/15 - Partial Differential Equations (1),FMFI.KAMŠ/2-MAT-121/09 - Partial Differential Equations (2)					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 10					
A	B	C	D	E	FX
70,0	10,0	10,0	10,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Ján Filo, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MMN-140/15		<b>Course title:</b> Unconventional Application of Mathematical Analysis			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/2-MAT-621/09					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 68					
A	B	C	D	E	FX
91,18	8,82	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Jaroslav Jaroš, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-212/09		<b>Course title:</b> Universal Algebras and Lattices (1)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 32					
A	B	C	D	E	FX
78,13	9,38	9,38	0,0	3,13	0,0
<b>Lecturers:</b> prof. RNDr. Tibor Katriňák, DrSc., doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-221/09		<b>Course title:</b> Universal Algebras and Lattices (2)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 27					
A	B	C	D	E	FX
85,19	14,81	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Tibor Katriňák, DrSc., doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-618/09		<b>Course title:</b> Universal Algebras and Lattices (3)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 13					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Tibor Katriňák, DrSc., doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KAG/2-MAT-623/09		<b>Course title:</b> Universal Algebras and Lattices (4)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 6					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> prof. RNDr. Tibor Katriňák, DrSc., doc. RNDr. Jaroslav Guričan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>University:</b> Comenius University in Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2- MAT-325/12		<b>Course title:</b> Variational Methods in Differential Equations			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 28 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 22					
A	B	C	D	E	FX
40,91	13,64	13,64	9,09	18,18	4,55
<b>Lecturers:</b> prof. RNDr. Jozef Kačur, DrSc., Dr. Hana Šmitala Mizerová					
<b>Last change:</b> 30.04.2019					
<b>Approved by:</b>					