

Course descriptions

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COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAMŠ/1-EFM-515/00		Course title: Algebra and Geometry Classes (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements: Activity in the class, final test Grading: 91-100 A 81-90 B 65-80 C 50-64 D 40-49 E Scale of assessment (preliminary/final): 100/0					
Learning outcomes: Students are able to solve various problems required to pass the Linear algebra and geometry course.					
Class syllabus: See the syllabus of the subject Linear algebra and geometry (1).					
Recommended literature: Linear algebra and its applications / Gilbert Strang. Belmont : Thomson Brooks/Cole, 2006 Algebra a teoretická aritmetika 1 / Tibor Katriňák ... [et al.]. Bratislava : Univerzita Komenského, 1999					
Languages necessary to complete the course: Slovak, English					
Notes:					
Past grade distribution Total number of evaluated students: 563					
A	B	C	D	E	FX
46,71	14,56	17,23	15,28	3,37	2,84
Lecturers: doc. RNDr. Mária Trnovská, PhD.					
Last change: 17.05.2018					

Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAMŠ/1-EFM-525/00		Course title: Algebra and Geometry Classes (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements: Activity in the class, test Grading: 91-100 A 81-90 B 65-80 C 50-64 D 40-49 E Scale of assessment (preliminary/final): 100/0					
Learning outcomes: Students are able to solve various problems required to pass the Linear algebra and geometry course					
Class syllabus: See the programme of the subject Linear algebra and geomerie (2).					
Recommended literature: Linear algebra and its applications / Gilbert Strang. Belmont : Thomson Brooks/Cole, 2006 Algebra a teoretická aritmetika 1 / Tibor Katriňák ... [et al.]. Bratislava : Univerzita Komenského, 1995					
Languages necessary to complete the course: Slovak, English					
Notes:					
Past grade distribution Total number of evaluated students: 487					
A	B	C	D	E	FX
55,44	18,89	15,2	7,19	1,64	1,64
Lecturers: doc. RNDr. Mária Trnovská, PhD.					
Last change: 17.05.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-911/15		Course title: BSc Thesis Seminar			
Educational activities: Type of activities: seminar Number of hours: per week: 1 per level/semester: 14 Form of the course: on-site learning					
Number of credits: 1					
Recommended semester: 5.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes: : The student is informed about the basic regulations and requirements for content and formal aspects of bachelor thesis, citation technique and ethics. He/she has a thought-out structure of his bachelor thesis and a pre-established list of used literature.					
Class syllabus: Meetings with potential supervisors of bachelor theses and selection of bachelor thesis topic. Basic requirements for content and formal aspects of the bachelor thesis. Thesis objective. Structure of work. Citation technique and ethics. Methods of creating a bibliography.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 298					
A	B	C	D	E	FX
86,91	8,72	1,34	2,68	0,34	0,0
Lecturers: doc. RNDr. Margaréta Halická, CSc.					
Last change: 09.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KAMŠ/1-EFM-991/15	Course title: Bachelor Thesis and its Defense
Number of credits: 9	
Educational level: I.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: doc. RNDr. Margaréta Halická, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAI/1-AIN-407/15		Course title: Brain and Mind			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 70					
A	B	C	D	E	FX
58,57	28,57	11,43	1,43	0,0	0,0
Lecturers: doc. PhDr. Ján Rybár, PhD.					
Last change: 22.09.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-AIN-408/15		Course title: Cognitive Laboratory			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 5.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 10					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. PhDr. Ján Rybár, PhD.					
Last change: 22.09.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-340/13		Course title: Computer Statistics			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 5.					
Educational level: I., II.					
Prerequisites: FMFI.KAMŠ/1-MAT-282/00 - Probability and Statistics (2) or FMFI.KAMŠ/2-INF-175/15 - Probability and Statistics					
Course requirements:					
Learning outcomes:					
Class syllabus: History of R and comparison with other systems. Arithmetic, logical operators. Data import and visualisation, descriptive statistics. Tests of normality. Tests about location parameters, probabilities and correlation coefficients. Linear regression: estimates, tests, confidence regions, submodels, diagnostic. ANOVA. Modern methods of statistics (cluster and discriminant analysis, Monte Carlo).					
Recommended literature: Základy matematické statistiky / Jiří Anděl. Praha : Matfyzpress, 2005 An Introduction to R (available online: cran.r-project.org/doc/manuals/R-intro.pdf)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 518					
A	B	C	D	E	FX
55,6	13,13	11,78	8,49	8,69	2,32
Lecturers: Mgr. Ján Somorčík, PhD.					
Last change: 12.10.2016					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-240/15		Course title: Corporate Finance			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 4.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-MAT-281/00 - Probability and Statistics (1)					
Antirequisites: FMFI.KAMŠ/1-EFM-240/13					
Course requirements:					
Learning outcomes: Upon completion of the course students will understand the principles of investment and financial decision making of a corporation.					
Class syllabus: Introduction to the theory of Corporate Finance. Financial analysis of a company. Time value of money, interest. Pricing of stocks and bonds. Investment criteria, sensitivity analysis, decision trees. Yield and risk. Portfolio Theory, Capital Asset Pricing Model (CAPM). Capital Structure. Tax Shield. Financial hardship and bankruptcy. Dividend policy.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 205					
A	B	C	D	E	FX
28,29	21,95	17,56	14,15	13,17	4,88
Lecturers: RNDr. Zuzana Chladná, Dr., doc. Mgr. Igor Melicherčík, PhD.					
Last change: 09.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-556/15		Course title: DEA Models			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 4.					
Educational level: I.					
Prerequisites: FMFI.KMANM/1-EFM-220/00 - Linear Programming or FMFI.KMANM/1-MMN-255/00 - Linear Programming					
Antirequisites: FMFI.KAMŠ/1-EFM-556/11					
Course requirements:					
Learning outcomes: Upon completion of the course students will understand the fundamentals of DEA models and will be able to use them for evaluating the effectiveness of units within a given group.					
Class syllabus: Introduction to DEA modelling, different approaches to DEA modeling, efficiency and effectiveness, CCR model, BCC model, range efficiency, additive model, basic model properties, model invariance, monotonous efficiency, input / output additions, returns to scale, superefektivty, rules for correct application of DEA models, SBM model, AR model.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 74					
A	B	C	D	E	FX
32,43	41,89	14,86	6,76	0,0	4,05
Lecturers: doc. RNDr. Margaréta Halická, CSc.					
Last change: 09.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAMŠ/1-EFM-310/00	Course title: Difference and Differential Equations
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning	
Number of credits: 5	
Recommended semester: 6.	
Educational level: I.	
Prerequisites: FMFI.KAMŠ/1-EFM-210/00 - Mathematical Analysis (3) and (FMFI.KAGDM/1-MAT-160/15 - Linear Algebra and Geometry (2) or FMFI.KAGDM/1-EFM-160/12 - Linear Algebra and Geometry (2))	
Course requirements: Continuous assessment: Written exam and homework Exam: Written and oral exam Approximate rating: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 20/80	
Learning outcomes: Students master basic methods of modelling the dynamical processes with discrete and continuous time variable using differential and differential equations, with special regard to their application in economics and finance.	
Class syllabus: Difference equations: One- and higher dimensional linear equation, affine and nonlinear equation, solving and stability. Differential equations: One-dimensional linear, affine and nonlinear equations. Higher dimensional linear equations. General theory of differential equations. Autonomous equations, two-dimensional autonomous equations. Integrals of differential equations, conservative system with one degree of freedom.	
Recommended literature: P. Brunovský: Dynamické systémy a diferenciálne rovnice, text MFFUK www.iam.fmph.uniba.sk/skripta/brunovsky M. Greguš, V. Šeda, M. Švec: Obyčajné diferenciálne rovnice, Alfa 1985 J. T. Sandefur: Discrete dynamical systems. Clarendon 1990 G. Gandolfo: Economic Dynamics, Springer	
Languages necessary to complete the course: English	
Notes:	

Past grade distribution					
Total number of evaluated students: 470					
A	B	C	D	E	FX
29,36	25,32	16,6	16,81	10,43	1,49
Lecturers: doc. RNDr. Peter Guba, PhD., doc. Mgr. Pavol Bokes, PhD.					
Last change: 01.05.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-380/00		Course title: Econometrics			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 6.					
Educational level: I., II.					
Prerequisites: FMFI.KAMŠ/1-EFM-330/00 - Statistical Methods or FMFI.KAMŠ/2-MMN-106/15 - Computer Statistics or FMFI.KAMŠ/2-PMS-107/15 - Regression Models (1) or FMFI.KAMŠ/2-MMN-106/15 - Computer Statistics					
Course requirements: Scale of assessment (preliminary/final): 30/70					
Learning outcomes:					
Class syllabus: General framework of model building in the applications. Classical linear regression model. Methods of parameter estimation and their properties. Ordinary Least Squares method and theory. Regression diagnostics. Stochastic specification and classical assumptions of the linear regression model. Inference in the linear regression model. Violating assumptions in the classical linear regression model, detection and correction: heteroskedasticity and autocorrelation. Generalized least squares method. Multikollinearity. Stochastic regressors, autoregression. Instrumental variables method. Introduction to simultaneous equations. Qualitative variables, logistic regression. Overview of other methods.					
Recommended literature: Faraway, J. J., Linear models with R, Chapman&Hall/CRC, 2005. Johnston, J. and DiNardo, J., Econometric methods, McGraw&Hill, 4-th. ed, 1997.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 856					
A	B	C	D	E	FX
25,0	16,36	19,39	16,82	19,28	3,15
Lecturers: Mgr. Ján Somorčík, PhD., Mgr. Katarína Sternmüllerová, Mgr. Michaela Koščová					
Last change: 12.10.2016					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-120/17		Course title: Economics (1)			
Educational activities: Type of activities: lecture Number of hours: per week: 3 per level/semester: 42 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1384					
A	B	C	D	E	FX
8,67	15,03	22,33	22,11	22,98	8,89
Lecturers: doc. RNDr. Ján Bod'a, CSc.					
Last change:					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-140/17		Course title: Economics (2)			
Educational activities: Type of activities: lecture Number of hours: per week: 3 per level/semester: 42 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1190					
A	B	C	D	E	FX
9,24	16,05	25,55	24,71	19,83	4,62
Lecturers: doc. RNDr. Ján Bod'a, CSc.					
Last change:					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-233/13		Course title: English Conversation Course (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3., 5.					
Educational level: I., II.					
Prerequisites:					
Course requirements: Scale of assessment (preliminary/final): 100/0					
Learning outcomes:					
Class syllabus: The content of the course is general English. The language level is B2/C1 (Upper-Intermediate/Lower Advanced).					
Recommended literature: 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)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 135					
A	B	C	D	E	FX
58,52	18,52	9,63	2,22	1,48	9,63
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-234/13		Course title: English Conversation Course (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4., 6.					
Educational level: I., II.					
Prerequisites:					
Course requirements: Scale of assessment (preliminary/final): 100/0					
Learning outcomes:					
Class syllabus: 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).					
Recommended literature: 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)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 62					
A	B	C	D	E	FX
67,74	19,35	4,84	0,0	0,0	8,06
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-131/00		Course title: English Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: On entering the first semester, students' knowledge of English is tested and they are divided into groups according to the results of the placement test. In the groups of pre-intermediate and intermediate students, fundamentals of technical English are taught. Advanced students take classes of technical English for their field of study: English for mathematics, for physics, for computer science, English for management and economic and financial mathematics.					
Recommended literature: Zemanová, A.: Anglický jazyk pre študentov FMFI UK. Kurz pre mierne pokročilých. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-2829-6 Erdélyi L., Gombárik P.: Anglický jazyk pre študentov FMFI UK. Aplikovaná matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3216-3 Gombárik P.: Anglický jazyk pre študentov FMFI UK. Matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3207-1 Klátiková E.: Anglický jazyk pre študentov FMFI UK. Informatika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3196-8 Alena Zemanová: Anglický jazyk pre študentov FMFI UK. Fyzika. Univerzita Komenského v Bratislave, Bratislava 2014, 92 strán, ISBN: 978-80-223-3477-8.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 4568					
A	B	C	D	E	FX
30,12	23,82	18,83	13,05	8,08	6,11
Lecturers: PhDr. Elena Klátiková, PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Ing. Eva Vartíková, Mgr. Alexandra Maďarová, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová					

Last change: 02.06.2015
Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-132/00		Course title: English Language (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: This is a continuation of the course English (1) designed for pre-intermediate students. Fundamental vocabulary is presented through selected topics in mathematics, physics and informatics. The lessons also contain revision of elementary grammar. Generally, it is a necessary preliminary to advanced programs.					
Recommended literature: Zemanová, A.: Anglický jazyk pre študentov FMFI UK. Kurz pre mierne pokročilých. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-2829-6					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1350					
A	B	C	D	E	FX
18,74	21,19	25,93	17,11	11,26	5,78
Lecturers: PhDr. Elena Klátiková, PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Ing. Eva Vartíková, Mgr. Alexandra Maďarová, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-231/00		Course title: English Language (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of English (2). Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathematics. The subject requires advanced knowledge of general English.					
Recommended literature: Erdélyi L., Gombárik P.: Anglický jazyk pre študentov FMFI UK. Aplikovaná matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3216-3 Gombárik P.: Anglický jazyk pre študentov FMFI UK. Matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3207-1 Klátiková E.: Anglický jazyk pre študentov FMFI UK. Informatika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3196-8 Alena Zemanová: Anglický jazyk pre študentov FMFI UK. Fyzika. Univerzita Komenského v Bratislave, Bratislava 2014, 92 strán, ISBN: 978-80-223-3477-8.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1134					
A	B	C	D	E	FX
16,67	19,4	22,75	17,55	18,52	5,11
Lecturers: PhDr. Elena Klátiková, PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Ing. Eva Vartíková, Mgr. Alexandra Maďarová, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-232/10		Course title: English Language (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Students take classes of special English for their field of study: English for mathematics, English for physics, English for computer science, English for management and economic and financial mathematics.					
Recommended literature: Erdélyi L., Gombárik P.: Anglický jazyk pre študentov FMFI UK. Aplikovaná matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3216-3 Gombárik P.: Anglický jazyk pre študentov FMFI UK. Matematika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3207-1 Klátiková E.: Anglický jazyk pre študentov FMFI UK. Informatika. Univerzita Komenského v Bratislave, Bratislava 2012, ISBN 978-80-223-3196-8 Alena Zemanová: Anglický jazyk pre študentov FMFI UK. Fyzika. Univerzita Komenského v Bratislave, Bratislava 2014, 92 strán, ISBN: 978-80-223-3477-8.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 2248					
A	B	C	D	E	FX
28,43	28,51	20,95	10,9	5,83	5,38
Lecturers: Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Ing. Eva Vartíková, PhDr. Alena Zemanová, PhDr. Elena Klátiková, Mgr. Renáta Čárska, Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-570/00		Course title: Experimental Economics			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 6.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: 1. Competitive Markets (Supply and Demand. Shifting Supply.) 2. Market Intervention and Public Policy (A Sales Tax. Prohibition. A Minimum Wage.) 3. Imperfect Markets (Externalities. Monopolies and Cartels.) 4. Firms a technology (Entry and Exit. Network Externalities. Measuring Productivity. Comparative Advantage.) 5. Information, Auctions, Bargaining (Adverse Selection. Auctions. Bargaining.)					
Recommended literature: Theodore Bergstrom - John H. Miller: Experiments with Economic Principles: Microeconomics, McGraw-Hill, 2000.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 96					
A	B	C	D	E	FX
97,92	0,0	2,08	0,0	0,0	0,0
Lecturers: doc. RNDr. Ján Pekár, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-370/00		Course title: Financial Mathematics			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 5.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-250/00 - Mathematical Analysis (4)					
Course requirements:					
Learning outcomes:					
Class syllabus: 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.					
Recommended literature: Baxter M., Rennie A.: Financial Calculus Hull J.: Options, Futures and Other Derivatives Luenberger D.: Investment Science					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 503					
A	B	C	D	E	FX
58,05	22,47	9,54	6,36	3,18	0,4
Lecturers: doc. Mgr. Igor Melicherčík, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-552/17		Course title: Financial System and Financial Stability			
Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 5.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-280/00 - Money and Banking					
Recommended prerequisites: 1-EFM-280/00 Money and Banking					
Course requirements: Interim evaluation: Active participation / presentation Concluding evaluation: Written exam Approximate rating scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 60/40					
Learning outcomes: Student controls the main principles of the international financial system, imbalances affecting financial stability and tools to mitigate systemic risk					
Class syllabus: Money, the ECB's monetary system and policy, Balance of payments, Risks - Slovak and global context, Financial cycle, Financial crisis, Financial stability, Macro-prudential policy.					
Recommended literature: Jílek, J. [2013] Finance v globální ekonomice. Grada, 2013					
Languages necessary to complete the course: Slovak					
Notes:					
Past grade distribution Total number of evaluated students: 7					
A	B	C	D	E	FX
28,57	42,86	28,57	0,0	0,0	0,0
Lecturers: PhDr. Štefan Rychtárik, PhD.					
Last change: 15.05.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-561/14		Course title: Free optimisation methods			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 1 per level/semester: 28 / 14 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 4.					
Educational level: I.					
Prerequisites: FMFI.KAGDM/1-EFM-160/12 - Linear Algebra and Geometry (2) and FMFI.KAMŠ/1-EFM-130/00 - Mathematical Analysis (2)					
Course requirements: Project, exam test Grading:: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 40/60					
Learning outcomes: Students have mastered classical and modern methods of free optimization for functions of one and several variables, theoretical and practical aspects of these methods and their significance for solving nonlinear programming problems with boundaries.					
Class syllabus: Introduction to the subject, Classification of optimization problems, Lagrange function and its generalization, transformation of optimization problems, Methods of minimizing the function of one variable (Minimum interval approximation methods, Minimum point approximation methods), Classical methods for minimizing n-variable function (Classification of methods and basic algorithmic schemes, Cauchy's method of the highest gradient and relaxation method, Newton's method and modified Newton's method), Modern methods for minimizing the function of n variables (Conjugate gradient method, Quasi Newton method, Broyden class and other parametric classes of Quasi Newton formulas)					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 131					
A	B	C	D	E	FX
20,61	16,03	20,61	19,85	16,03	6,87
Lecturers: doc. RNDr. Mária Trnovská, PhD.					
Last change: 18.05.2018					

Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-141/00		Course title: French Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: French language is taught at two levels: beginner and intermediate. Students opt for one of them depending on whether they wish to obtain the fundamentals of the language or wish to maintain and/or improve previous knowledge of French.					
Recommended literature: Pravda, Pravdová: Učebnica francúzštiny pre samoukov a kurzy, SPN Bratislava 1999, ISBN 80-08-00431-2					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 374					
A	B	C	D	E	FX
39,84	22,19	21,66	10,16	2,14	4,01
Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-142/00		Course title: French Language (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of French language (1) and provides courses of essential and intermediate French language.					
Recommended literature: 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					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 237					
A	B	C	D	E	FX
34,18	27,85	21,52	11,39	2,53	2,53
Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-241/00		Course title: French Language (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject provides a course of intermediate French language, covering not only general, but also technical language.					
Recommended literature: 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					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 93					
A	B	C	D	E	FX
33,33	30,11	23,66	7,53	1,08	4,3
Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-242/00		Course title: French Language (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject provides a course of intermediate French covering not only general, but also technical French language.					
Recommended literature: 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					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 63					
A	B	C	D	E	FX
31,75	38,1	20,63	3,17	1,59	4,76
Lecturers: Mgr. Pavel Vilášek, Mgr. Ľubomíra Kožehubová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-151/00		Course title: German Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: German language is taught at three levels: beginner, intermediate and advanced. Students opt for one of them depending on whether they need to learn the fundamentals or maintain and/or improve their previous knowledge.					
Recommended literature: Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 648					
A	B	C	D	E	FX
31,94	29,17	21,3	10,03	2,93	4,63
Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-152/00		Course title: German Language (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The course continues the program of German language (1). German language is taught at three levels: beginner, intermediate, advanced.					
Recommended literature: Vilášek, P.: Nemčina pre študentov FMFI, Na webovej stránke autora v elektronickej podobe.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 408					
A	B	C	D	E	FX
29,17	22,06	23,77	14,95	3,68	6,37
Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-251/00		Course title: German Language (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of German language (2). It provides a course of intermediate and advanced German language.					
Recommended literature: 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					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 148					
A	B	C	D	E	FX
38,51	27,03	22,3	6,76	2,7	2,7
Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-252/00		Course title: German Language (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of German language (3). It provides a course of intermediate and advanced German language.					
Recommended literature: 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					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 78					
A	B	C	D	E	FX
35,9	28,21	14,1	12,82	3,85	5,13
Lecturers: Mgr. Pavel Vilášek, Mgr. Alexandra Maďarová					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-491/15		Course title: Integrated Education of People with Disabilities			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 24					
A	B	C	D	E	FX
95,83	4,17	0,0	0,0	0,0	0,0
Lecturers: PaedDr. Elena Mendelová, CSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-270/15		Course title: Introduction to Game Theory			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAMŠ/1-EFM-270/00					
Course requirements: Homework, midterm test, final test, experiments. Grade policy A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0					
Learning outcomes: Students will be able to analyze correctly strategic situations, being able to make the right decisions					
Class syllabus: Strategic games with complete information. Dominance. Nash equilibrium. Applications (Cournot oligopoly, Bertrand oligopoly, voting games, deterrence wars, auctions). Nash equilibrium in mixed actions. Extensive games with complete information. Associated game. Nash equilibrium, subgame perfect equilibrium.					
Recommended literature: A Course in Game Theory / Martin J. Osborne, Ariel Rubinstein. Cambridge, Mass. : MIT Press, 1994					
Languages necessary to complete the course: Slovak, English					
Notes:					
Past grade distribution Total number of evaluated students: 546					
A	B	C	D	E	FX
34,8	26,01	22,34	8,06	7,33	1,47
Lecturers: doc. RNDr. Ján Pekár, PhD.					
Last change: 15.05.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-427/00		Course title: Introduction to Philosophy of Language			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Frege's "semantic triangle"; Russell's theory of descriptions; relation between language and "world" (Wittgenstein's "Tractatus logico-philosophicus"); critics of traditional philosophy and its "pseudo-problems"; natural (ordinary) language and artificial languages; two approaches to ordinary language; Quine's critics of dogmas of empiricism; expression meaning as an object (entity) and expression meaning as its use; language games (Wittgenstein's "Philosophical Investigations"), rules and rule following; understanding - role of community and role of form of life; Oxonian school of linguistic analysis (P. F. Strawson, J. L. Austin, H. P. Grice)					
Recommended literature: Frege, G.: "O zmysle a denotáte.", In: Filozofia, roč. 47, 1992, č. 6. Russell, B.: "Opisy.", In: Organon F, 1995, č. 2 Peregrin, J.: Kapitoly z analytické filosofie, Filozofia, Praha 2005. Filozofia prirodzeného jazyka, Archa, Bratislava 1992					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 19					
A	B	C	D	E	FX
84,21	10,53	5,26	0,0	0,0	0,0
Lecturers: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-403/00		Course title: Introduction to Psychology of Jean Piaget (1)			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Piaget's theory of cognitive development - the sensorimotor stage - the preoperational stage - the concrete operational stage - the formal operational stage					
Recommended literature: J. Piaget, B. Inhelderová: Psychológia dieťaťa. Bratislava: Sofa 1997. H. E. Gruber, J. J. Voneche, Eds.: Essential Piaget. London: 1995. CD ROM Piaget, Piaget's videos (Geneva University)					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 0					
A	B	C	D	E	FX
0,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. PhDr. Ján Rybár, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KAI/1-MXX-404/00		Course title: Introduction to Psychology of Jean Piaget (2)			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: 1. Constructivist models (Piaget). 2. Associationist models (Behaviorism). 3. Sociocognitive models (Vygotsky). 4. Nativist models (Chomsky and Fodor).					
Recommended literature: K. Richardson: Models of Cognitive Development. London: Psychology Press 2003.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. PhDr. Ján Rybár, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-511/15		Course title: Introduction to University-level Mathematics (1)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAMŠ/1-EFM-511/14					
Course requirements: Scale of assessment (preliminary/final): 100/0					
Learning outcomes:					
Class syllabus: mathematical statements and proofs, divisibility, greatest common divisor, the Euclidean algorithm, linear diophantine equations, congruences, linear congruences, system of linear congruences, the Chinese remainder theorem, Wilsons theorem, Fermats little theorem, Eulers phi function and theorem, cryptology and RSA cryptosystem, congruence classes, madular arithmetic, equivalence relations, complex numbers and their properties, complex plane, polar form of complex numbers, powers and roots of complex numbers, sets of points in the complex plane					
Recommended literature: T. Koshy Elementary number theory with applications 2nd ed, Elsevier, 2007, P.J. Eccles An introduction to mathematical reasoning, Cambridge University Pres, 2007, D.G. Zill, P.D. Shanahan Comlex analysis, Jones and Bartlett Publishers, 2003					
Languages necessary to complete the course: Slovak					
Notes:					
Past grade distribution Total number of evaluated students: 133					
A	B	C	D	E	FX
30,83	21,05	21,8	25,56	0,75	0,0
Lecturers: RNDr. Dušan Krajčovič, CSc.					
Last change: 16.05.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-512/15		Course title: Introduction to University-level Mathematics (2)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAMŠ/1-EFM-512/14					
Course requirements: Scale of assessment (preliminary/final): 100/0					
Learning outcomes:					
Class syllabus: permutations, permutation group, abstract groups, subgroups, left and right cosets, Lagranges theorem, cyclic groups, normal subgroups, quotient groups, homomorphism and izomorphism, the fundamental homomorphism theorem, rings, ideals, quotient rings, fields, polynomials, Horner's scheme, roots of polynomials with real and rational coefficients, symmetric polynomials, resultant and discriminant, cubic equations, Cardanos formula, canonical equation of ellipse, hyperbola and parabola, transformation of a coordinate system, curves of the second order, classification of the curves of the second order, surfaces of the second order, classification of the surfaces of the second order					
Recommended literature: . Hill, Ch. Thorn Elementary abstract algebra Examples and applications, Portions, 2016, E. B. Vinberg A course in algebra, AMS 2003, R. A. Sharipov Course in analytical geometry text book UFA 2011,					
Languages necessary to complete the course: slovak					
Notes:					
Past grade distribution Total number of evaluated students: 69					
A	B	C	D	E	FX
42,03	27,54	20,29	8,7	1,45	0,0
Lecturers: RNDr. Dušan Krajčovič, CSc.					
Last change: 16.05.2018					

Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-AIN-406/15		Course title: Language and Cognition			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 4.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 30					
A	B	C	D	E	FX
30,0	46,67	20,0	3,33	0,0	0,0
Lecturers: doc. PhDr. Ján Rybár, PhD.					
Last change: 22.09.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-PMA-710/15		Course title: Legislation and Accountancy of Insurance Companies			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAMŠ/1-PMA-710/00					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 303					
A	B	C	D	E	FX
15,84	14,85	21,12	22,44	20,46	5,28
Lecturers: Mgr. Gábor Szűcs, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAGDM/1- EFM-121/15		Course title: Linear Algebra and Geometry (1)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAGDM/1-EFM-121/12					
Course requirements:					
Learning outcomes: Upon completion of this course, students will master basic computational skills of linear algebra: solving linear systems, determining linear dependence / independence, determining spatial dimension, finding orthogonal complement, projection and projection matrix, finding a matrix of a linear mapping, calculating matrix determinants, determining whether a mapping is linear, finding the kernel and the image of a mapping. Students will improve their skills in proving propositions and deducing the properties of mathematical objects and advance their argumentation in the language and the style of university mathematics.					
Class syllabus: Systems of linear equations and their geometry, Gaussian elimination, matrix representation, vectors, matrix operations, inverse matrix, vector spaces, linear dependence / independence, base, dimension, matrix rank, linear transformation, kernel, image, scalar product, orthogonality, projection, orthogonal complement, Gram-Schmidt orthogonalization, matrix determinant, Laplace's expansion, Cramer's rule, determinant as volume, permutations.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 279					
A	B	C	D	E	FX
5,73	11,83	16,85	27,96	26,16	11,47
Lecturers: Mgr. Martin Niepel, PhD., doc. RNDr. Mária Trnovská, PhD.					

Last change: 27.02.2018
Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFL.KAGDM/1- EFM-160/12	Course title: Linear Algebra and Geometry (2)
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 3 / 2 per level/semester: 42 / 28 Form of the course: on-site learning	
Number of credits: 7	
Recommended semester: 2.	
Educational level: I.	
Prerequisites:	
Recommended prerequisites: Linear Algebra and Geometry I. (1-EFM-121) or equivalent course.	
Course requirements: Scale of assessment (preliminary/final): 50/50	
Learning outcomes: Upon completion of this course students will master the more advanced computational skills of linear algebra: finding eigenvalues and eigenvectors of a matrix, diagonalization of a matrix and finding its exponential, finding the minimum polynomial of a matrix, the generalized eigenvectors, deciding whether two matrices are similar, finding the Jordan canonical form, quadratic forms, describing a conic corresponding to a quadratic form. Students will improve their skills in proving propositions and deducing the properties of mathematical objects and advance their argumentation in the language and the style of university mathematics.	
Class syllabus: Eigenvectors, eigenvalues, characteristic polynomial, applications of matrix diagonalization to difference and differential equations, Schur's lemma, minimal polynomial, Jordan Form, quadratic forms, Sylvester's criterion, Sylvester's law of inertia, conics.	
Recommended literature: G. Strang: Linear Algebra and its Applications, Brooks/Cole, 1988 S. Axler: Linear Algebra Done Right, UTM, Springer, 1997 P. Zlatoš: Lineárna algebra a geometria, Marenčin PT, Bratislava, 2011 L. Motl, M. Záhradník: Pěstujeme lineární algebru, Karolinum, Praha, 1997	
Languages necessary to complete the course:	
Notes:	

Past grade distribution					
Total number of evaluated students: 744					
A	B	C	D	E	FX
14,92	16,8	19,89	20,97	24,87	2,55
Lecturers: Mgr. Martin Niepel, PhD., doc. RNDr. Mária Trnovská, PhD.					
Last change: 15.01.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KMANM/1- EFM-220/00		Course title: Linear Programming			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 3.					
Educational level: I.					
Prerequisites: (FMFI.KAGDM/1-MAT-160/15 - Linear Algebra and Geometry (2) or FMFI.KAGDM/1-EFM-160/12 - Linear Algebra and Geometry (2)) and FMFI.KAMŠ/1-EFM-130/00 - Mathematical Analysis (2)					
Course requirements: Scale of assessment (preliminary/final): 40/60					
Learning outcomes:					
Class syllabus: LP formulations of some real-life problems. The geometry of LP problems (graphic solutions, polyhedra, faces and their representations). The simplex method (primal, dual and revised versions). Duality theory (basic theorems), its applications and economic interpretation. Parametric programming and its applications (multiple criteria optimization, fractional programming). Postoptimization and sensitivity analysis. Transportation problem. About non-simplex methods for LP.					
Recommended literature: J. Plesník, J. Dupačová, M. Vlach: Lineárne programovanie, Alfa, Bratislava 1990.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 528					
A	B	C	D	E	FX
16,1	19,89	24,24	20,83	18,75	0,19
Lecturers: prof. RNDr. Ján Plesník, DrSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-390/00		Course title: Macroeconomics			
Educational activities: Type of activities: lecture Number of hours: per week: 4 per level/semester: 56 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 6.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-140/17 - Economics (2)					
Course requirements:					
Learning outcomes:					
Class syllabus: Economic growth in the long run. Solow growth model. Ramsey growth model. Overlapping generations model. Rational expectations. Models with rational expectations. Model of imperfect information. Seigniorage and inflation.					
Recommended literature: O. Blanchard. S. Fischer: Lectures on Macroeconomics D. Romer: Advanced Macroeconomics					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 487					
A	B	C	D	E	FX
24,44	23,82	27,93	16,63	6,98	0,21
Lecturers: doc. RNDr. Ján Boďa, CSc.					
Last change: 17.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-110/00		Course title: Mathematical Analysis (1)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: I. Introduction II. The Real and Complex Number Systems Ordered Sets, Fields, The Real Field, The Extended Real Number System, The Complex Field. III. Basic Topology Finite, Countable, and Uncountable Sets, Compact Sets. IV. Numerical Sequences and Series Convergent Sequences, Subsequences, Cauchy Sequences, Upper and Lower Limits, Some Special Sequences, Series, Series of Nonnegative Terms, The Number e, The Root and Ratio Test, Power Series, Absolute Convergence, Addition and Multiplication of Series, Elementary Functions. V. Continuity Limits of Functions, Continuous Functions, Continuity and Compactness, Discontinuities, Monotonic Functions, Infinite Limits and Limits at Infinity.					
Recommended literature: Rudin, Walter: Principles of mathematical analysis, ISBN 0-07-054235-X Hildebrandt, Stefan: Analysis I, ISBN 3-540-42838-0 Forstter, Otto: Analysis I, ISBN 3-528-57224-8 Neubrunn, Tibor a Vencko, Jozef: Mathematical Analysis I, textbook of FMFI UK Kubáček, Valášek: Cvičenia z Matematickej analýzy 1,2					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 408					
A	B	C	D	E	FX
21,57	23,77	26,47	16,18	5,15	6,86

Lecturers: Mgr. Martin Kollár, PhD., RNDr. Ľubica Kossaczká, CSc.
Last change: 02.06.2015
Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-130/00		Course title: Mathematical Analysis (2)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning					
Number of credits: 8					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: VI. Differentiation The Derivative of a Real Function, Mean Value Theorems, The Continuity of Derivatives, L'Hospital's Rule, Derivatives of Higher Order, Taylor's Theorem, VII. The Riemann Integral Definition and Existence of the Integral, Properties of the Integral, Integration and Differentiation, Rectifiable Curves. VIII. Sequences and Series of Functions Discussion of Main Problem, Uniform Convergence, Uniform Convergence and Continuity, Uniform Convergence and Integration, Uniform Convergence and Differentiation, Power Series.					
Recommended literature: Rudin, Walter: Principles of mathematical analysis, ISBN 0-07-054235-X Hildebrandt, Stefan: Analysis I, ISBN 3-540-42838-0 Forstter, Otto: Analysis I, ISBN 3-528-57224-8 Neubrunn, Tibor a Vencko, Jozef: Mathematical Analysis I, textbook of FMFI UK Kubáček, Valášek: Cvičenia z Matematickej analýzy 1,2					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 353					
A	B	C	D	E	FX
26,91	26,63	19,26	17,0	5,38	4,82
Lecturers: Mgr. Martin Kollár, PhD., RNDr. Ľubica Kossaczká, CSc.					
Last change: 02.06.2015					

Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAMŠ/1-EFM-210/00	Course title: Mathematical Analysis (3)
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning	
Number of credits: 8	
Recommended semester: 3.	
Educational level: I.	
Prerequisites: ((FMFI.KAMŠ/1-EFM-110/00 - Mathematical Analysis (1) and FMFI.KAMŠ/1-EFM-130/00 - Mathematical Analysis (2)) or (FMFI.KMANM/1-MAT-110/00 - Mathematical Analysis (1) and FMFI.KMANM/1-MAT-150/00 - Mathematical Analysis (2))) and (FMFI.KAGDM/1-EFM-160/12 - Linear Algebra and Geometry (2) or FMFI.KAGDM/1-MAT-160/15 - Linear Algebra and Geometry (2))	
Course requirements: Scale of assessment (preliminary/final): 40/60	
Learning outcomes: To master the basics of the differential calculus of functions of several variables with emphasis on the methods used in the economic sciences. Upon completion of the course, students will acquire key competences in the field of vector mathematical analysis and finite-optimization methods.	
Class syllabus: Class syllabus: Topic 1: Normed vector spaces (NVS). <ul style="list-style-type: none"> • Norm and its properties. • Equivalent norms. • Examples of norms in general NVS. • Euclidean space. Scalar product. • Cauchy-Schwartz inequality, Young's and Minkowski inequality. • Linear mappings and functionalities. Topic 2: Topological properties of NVS. <ul style="list-style-type: none"> • Open and closed sets in a NVS. • Boundary of a set. • Convergence of sequences in NVS. • Compact sets, criteria for compactness, Heine-Borel theorem. • Complete normed spaces, Banach and Hilbert space. • Completions of a normed space. • Lebesgue space. • Contiguous set. • Convex set in the NVS. Topic 3: Continuity in NVS.	

- Limits of functions. The definition of continuity of a function in NVS.
- Extremal properties of continuous functions on compact and contiguous subsets.
- Contractive mapping and Banach theorem on the existence of a fixed point and its applications

Topic 4: Multivariate functions.

- Relationship between multiple limit and limits of functions of more variables.
- Graph over a function of several variables.
- Convex and concave function.
- Level sets of convex functions.

Topic 5: Differentiability of functions of several variables.

- Partial derivatives of functions of several variables and their geometric interpretation.
- Partial derivatives of higher order, interchangeability of the order of differentiation.
- The derivative of a multivariate function and its geometrical interpretation.
- Relationship between derivative of a function and its partial derivatives, Jacobi matrix.
- Derivative of a composite function. Derivatives of higher order.

Topic 6: Properties of differentiable functions.

- Taylor series for multivariate function.
- Differential of a function and its use to determine the approximate value of a function.
- Gradient of a function and directional derivatives.
- Relationship between gradient and level set of a differentiable function.
- Convexity criterion for functions of several variables.

Topic 7: Extremal properties of multivariate functions.

- Tangent plane to a graph of a functions.
- Maximum and minimum of a multivariate function, local extremes. Saddle points.
- Necessary conditions for local extremes of functions of several variables.
- Sufficient conditions for local extremes and Hessian matrix of second derivatives.
- Global extremes and methods for their determination.
- Applications that lead to finding extremes of unconstrained functions.

Topic 8: Functions given implicitly.

- Examples of importance of implicit functions.
- The existence of an implicit function.
- Derivative of implicit function.
- Existence of an inverse function.

Topic 9: Extremes of a constrained multivariate function.

- Importance and application of extremes of a constrained multivariate function.
- Geometric interpretation of the extreme of a constrained multivariate function and Lagrange multipliers.
- Lagrangian.
- Necessary conditions for the existence of an extreme of a constrained function.
- Methods for determining the extreme type, some simple sufficient conditions for finding constrained minimum/maximum.
- General sufficient condition for an extreme of a constrained function and bounded Hessian.

Recommended literature:

Online zbierka príkladov a úloh a základov teórie:

Martin Kollár, Ľubica Kossacká, Daniel Ševčovič: Diferenciálny a integrálny počet funkcií viac premenných v príkladoch

Knižničné a edičné centrum FMFI UK, 192 pp. (in Slovak). ISBN: 978-80-89186-54-9

<http://www.iam.fmph.uniba.sk/institute/sevcovic/knihy/>

BARNOVSKÁ M., SMÍTALOVÁ K.: (1991) Matematická analýza III, Skriptá UK, Bratislava.

BARNOVSKÁ M., SMÍTALOVÁ K.: (1984) Matematická analýza IV, Skriptá UK, Bratislava.

KLUVÁNEK, I., MIŠÍK, L., ŠVEC M.: (1961) Matematika I, II, SVTL Bratislava. DEMIDOVICH, B.P.: (1977) Sbornik zadač i upražnenij po matematičeskomu analizu, Moskva Nauka (v ruštine).					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 588					
A	B	C	D	E	FX
30,1	28,74	26,87	8,84	4,76	0,68
Lecturers: prof. RNDr. Daniel Ševčovič, DrSc., RNDr. Ľubica Kossaczká, CSc., Mgr. Martin Kollár, PhD.					
Last change: 09.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAMŠ/1-EFM-250/00	Course title: Mathematical Analysis (4)
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 4 / 2 per level/semester: 56 / 28 Form of the course: on-site learning	
Number of credits: 8	
Recommended semester: 4.	
Educational level: I.	
Prerequisites: (FMFI.KAMŠ/1-EFM-130/00 - Mathematical Analysis (2) or FMFI.KMANM/1-MAT-150/00 - Mathematical Analysis (2)) and FMFI.KAMŠ/1-EFM-210/00 - Mathematical Analysis (3)	
Course requirements: Scale of assessment (preliminary/final): 40/60	
Learning outcomes: To master the basics of the integral calculus of functions of multiple variables, with emphasis on the methods used in financial mathematics. Upon completion of the course students will acquire key competences in the field of vector mathematical analysis.	
Class syllabus: Class syllabus: Topic 1: Fourier series. <ul style="list-style-type: none"> • Decomposition of a function into Fourier series. • Formulas for the Fourier coefficients • Complex form of trigonometric series. • Periodic extension of a functions. • Pointwise convergence of Fourier series. Fejer kernel. • Bessel inequality and Parseval equality. • Odd and even extentions of functions and their decomposition into Fourier series. • Applications of the Fourier series. • Solution to the boundary value problem for ordinary differential equations using Fourier series. Topic 2: Parametric integrals. <ul style="list-style-type: none"> • Definition of a parametric integral. • Examples of parametric integrals. • Continuity and differentiability of parametric integrals. • Parametric integrals of unbounded functions. • Parametric integrals on unbounded intervals. • Method of calculation for parametric integrals. • Gamma, Beta functions and their properties. Topic 3: Riemann integral of multivariate function. <ul style="list-style-type: none"> • Riemann integral on a bounded area. 	

- Properties of the integral of a multivariate function.
- Fubini theorem.

Topic 4: Substitution method for integrating functions of several variables.

- Linear and non-linear coordinate transformation.
- Jacobi matrix of a transformation and the geometric interpretation of its determinant.
- Substitution theorem for integrals of multivariate functions.
- Polar and spherical coordinates.
- Method of calculation of multidimensional integrals by transformation of variables.

Topic 5: Curve and surface integrals.

- Integrating functions defined on curves.
- Curve integral: kind I. and II..
- Integrating functions defined on surfaces.
- Surface integrals.
- Relationship between, curve, surface and volume integrals.
- Green's formula of integration by parts.
- Ostrogradskij-Gauss theorem and Stokes formula.

Recommended literature:

M. Barnovská, K. Smítalová, Matematická analýza IV, Skriptum UK v Bratislave, 1984.

V. Ďurikovič, Mat. Analýza 4, Integrálny počet v \mathbb{R}^n , UK, 1997.

Online zbierka príkladov a úloh a základov teórie:

Martin Kollár, Ľubica Kossaczká, Daniel Ševčovič: Diferenciálny a integrálny počet funkcií viac premenných v príkladoch

Knižničné a edičné centrum FMFI UK, 192 pp. (in Slovak). ISBN: 978-80-89186-54-9

<http://www.iam.fmph.uniba.sk/institute/sevcovic/knihy/>

BARNOVSKÁ M., SMÍTALOVÁ K.: (1991) Matematická analýza III, Skriptá UK, Bratislava.

BARNOVSKÁ M., SMÍTALOVÁ K.: (1984) Matematická analýza IV, Skriptá UK, Bratislava.

KLUVÁNEK, I., MIŠÍK, L., ŠVEC M.: (1961) Matematika I, II, SVTL Bratislava.

DEMIDOVICH, B.P.: (1977) Sbornik zadač i upražnenij po matematičeskomu analizu, Moskva Nauka (v ruštine).

Languages necessary to complete the course:

Notes:

Past grade distribution

Total number of evaluated students: 545

A	B	C	D	E	FX
37,61	30,28	16,51	10,28	4,4	0,92

Lecturers: prof. RNDr. Daniel Ševčovič, DrSc., Mgr. Martin Kollár, PhD., RNDr. Ľubica Kossaczká, CSc.

Last change: 09.10.2017

Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-510/00		Course title: Mathematical Analysis Classes (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: I. Introduction: 1. Basic concept of sets and logic, function, relations. 2. Definition of real numbers, supremum of a bounded set. II. Sequences: 1. Limit of a sequence, limes superior a inferior, limit point. 2. Relationship between convergence and boudedness, Cantor set, Bolzano-Cauchy criterion. III. One variable functions: 1. Limit of a function, continuous functions, basic theorems of limits, Heine definition of limit, uniform continuity. 2. Differential calculus, mean value theorems, monotonic functions, local maxima and minima, convex functions, asymptotic behaviour, Taylor polynomial.					
Recommended literature: Kubáček, Valášek: Cvičenia z matematickej analýzy I					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 601					
A	B	C	D	E	FX
52,25	20,8	11,65	6,99	6,82	1,5
Lecturers: RNDr. Ľubica Kossaczká, CSc., Mgr. Martin Kollár, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-520/00		Course title: Mathematical Analysis Classes (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: I. Functional sequences and series: 1. Sequences of functions, point and uniform convergence. 2. Numbers and functions series, convergence criterions, power expansions. 3. Taylor series of the functions. II. Integral calculus: 1. Primitive function, Newton integral, integration by parts and substitution methods, reduction to the parial fractions. 2. Riemann integral, integrability of monotonic and continuous functions, mean value theorems, Newton-Leibniz formula, applications of integral (area of planar regions, lehght of a curve, volume and surface area of solids). 3. Functions with bounded variation, Riemann-Stieltjes integral.					
Recommended literature: Kubáček, Valášek: Cvičenia z matematickej analýzy II					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 561					
A	B	C	D	E	FX
58,11	15,33	11,94	8,02	6,24	0,36
Lecturers: Mgr. Martin Kollár, PhD., RNDr. Ľubica Kossaczká, CSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-530/00		Course title: Mathematical Analysis Classes (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Metric spaces. Limit and continuity of a multivariable function. Differentiation of $_$ mappings, total differential and total derivative. Partial derivative, Taylor formula. Local and global extrema of multivariable function. Implicit functions.					
Recommended literature: M. Barnovská, K. Smítalová, Matematická analýza III, Skriptum UK v Bratislave, 1983					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 584					
A	B	C	D	E	FX
44,52	22,77	18,15	7,71	6,68	0,17
Lecturers: Mgr. Martin Kollár, PhD., RNDr. Ľubica Kossaczká, CSc., Mgr. Michal Hojčka					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-540/00		Course title: Mathematical Analysis Classes (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Multiple integrals. Line and surface integrals, Green's formula, Ostrogradskij and Stokes theorem. Parametric integrals. Fourier series.					
Recommended literature: M. Barnovská, K. Smítalová, Matematická analýza IV, Skriptum UK v Bratislave, 1984. Eliaš J., Horváth J., Kajan J., Zbierka úloh z vyššej matematiky, 4. časť, Bratislava, Alfa, 1972.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 576					
A	B	C	D	E	FX
52,6	20,49	13,37	8,85	4,51	0,17
Lecturers: Mgr. Martin Kollár, PhD., RNDr. Ľubica Kossaczká, CSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAMŠ/1-EFM-961/15	Course title: Mathematical Methods
Number of credits: 2	
Educational level: I.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: doc. RNDr. Margaréta Halická, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-565/15		Course title: Mathematical Software			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAMŠ/1-EFM-565/00					
Course requirements:					
Learning outcomes: Students gain fundamental skills of programming in Matlab and writing scientific texts in LaTeX.					
Class syllabus: MATLAB: Introduction to the Matlab environment and programming language. Vectors, matrices and basic operations. Graphics in Matlab: 2-D graphics, 3-D graphics. Looping: for, while, if-else-end, switch-case. Scripts and functions. Local and global variables. Optimization in Matlab. LaTeX: Visualization of Tex Files, Error Messages. Basic Structure of the Textual File, Commands and Environment, Organization of Different Types of Documents. Styles and font sizes, writing tables, footnotes. Mathematical formulas, creating simple images and inserting external images.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 514					
A	B	C	D	E	FX
50,78	21,98	13,62	7,39	4,86	1,36
Lecturers: Mgr. Soňa Kilianová, PhD.					
Last change: 09.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

STATE EXAM DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAMŠ/1-EFM-951/15	Course title: Mathematics Fundamentals
Number of credits: 2	
Educational level: I.	
State exam syllabus:	
Last change: 02.06.2015	
Approved by: doc. RNDr. Margaréta Halická, CSc.	

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-230/15		Course title: Matrix Calculus			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I.					
Prerequisites:					
Course requirements: Homework, final test Scale of assessment (preliminary/final): 50/50					
Learning outcomes:					
Class syllabus: vector p-norms, equivalent norms, norms in inner product spaces, parallelogram identity, matrix norms, Frobenius matrix norm, induced matrix norms and their properties, conditioning of a problem, matrix condition number, perturbation analysis for solving linear system, singular value decomposition, geometric interpretation, reduced SVD, least squares problem, normal system of linear equations, optimal pseudosolution, pseudoinverse matrices and their properties, computation of pseudoinverse matrix via normal equations, via SVD, via skeleton decomposition of a matrix					
Recommended literature: C.D. Meyer Matrix analysis and applied linear algebra, SIAM, 2001, David C. Lay Linear algebra and its applications, Pearson Education, 2016, S.L. Campbell, Carl D. Meyer Generalised inverses of linear transformation, SIAM, 2009, W. Ford Numerical linear algebra with applications using MATLAB, Elsevier 2014					
Languages necessary to complete the course: slovak, english					
Notes:					
Past grade distribution Total number of evaluated students: 106					
A	B	C	D	E	FX
50,94	33,02	15,09	0,94	0,0	0,0
Lecturers: RNDr. Dušan Krajčovič, CSc.					
Last change: 17.05.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-350/00		Course title: Microeconomics			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 5.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-140/17 - Economics (2) and FMFI.KAMŠ/1-EFM-250/00 - Mathematical Analysis (4) and FMFI.KMANM/1-EFM-220/00 - Linear Programming					
Course requirements:					
Learning outcomes:					
Class syllabus: Theory of firm. Theory of customer. Perfect competition. Imperfect competition. General equilibrium. Uncertainty and risk. Asymetric information.					
Recommended literature: F. Turnovec: Úvod do mikroekonomickej teórie. Skriptá EU 1992 H. Varian: Intermediate miroeconomics. Norton 1993 (český preklad Mikroekonomie, Victoria 1995 H. Varian: Microeconomic Analysis. Norton 1992 A. Mas-Collel, M. D. Whinston, J. R. Green: Microeconomic Theory. Oxford 1995					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 500					
A	B	C	D	E	FX
14,0	18,4	22,0	19,0	22,8	3,8
Lecturers: prof. RNDr. Pavel Brunovský, DrSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-PMA-540/00		Course title: Models in Health Insurance			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 1 per level/semester: 28 / 14 Form of the course: on-site learning					
Number of credits: 4					
Recommended semester: 5.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-MAT-281/00 - Probability and Statistics (1)					
Course requirements: Preliminary semester evaluation: homeworks and a test Examination: written examination Approximate grade thresholds: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 40/60					
Learning outcomes: Upon the succesful completion of the course the student will be able to use the multiple state Markov model to calculate probabilities and actuarial values used in health insurance or critical illness insurance. A similar approach may be used in other models (unemployment, etc.)					
Class syllabus: Discrete time Markov chain, transition probabilities, forces of transition. Chapman-Kolmogorov equation, differential equations for occupation probabilities and transition probabilities in multidecrement models and in the three state model active-ill-dead. Maximal likelihood estimates of forces o transition and their properties. Multiple decrement tables, central rates of decrement. Single decrement tables, independent and dependent rates of decrement. Semimarkov approach to the three state model, splitting of states. Application of models to health insurance: benefits, premiums, and reserves. Critical illness and dread disease insurance models.					
Recommended literature: Habermann, Pitacco: Actuarial models in disability insurance, Chapman and Hall 1999 Health insurance, modul F , materials of Institute of Actuaries,Oxford,1995					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 192					
A	B	C	D	E	FX
18,75	10,42	17,71	22,92	24,48	5,73

Lecturers: doc. RNDr. Katarína Janková, CSc.
Last change: 28.04.2017
Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-280/00		Course title: Money and Banking			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 3.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-140/17 - Economics (2)					
Course requirements:					
Learning outcomes:					
Class syllabus: Money, interest rate, money demand, money supply, monetary policy, IS-LM model, AS-AD model and inflation, monetary policy in an open economy, commercial banking.					
Recommended literature: Hubbard, R.G.: Money, the Financial System and the Economy, Addison-Wesley, 1999					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 576					
A	B	C	D	E	FX
33,16	28,47	22,05	10,07	5,9	0,35
Lecturers: Mgr. Ing. Pavol Jurča, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-320/15		Course title: Non-Linear Programming			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 5.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-561/14 - Free optimisation methods					
Antirequisites: FMFI.KAMŠ/1-EFM-320/00					
Course requirements:					
Learning outcomes: Student has mastered the basics of nonlinear programming theory and methods.					
Class syllabus: Mathematical apparatus for bounded optimization problems (Saddle points and minimax theorem, General principle of duality in optimization problems, Convex functions, quasi-convex, pseudoconvex and heavy-convex functions), Necessary and sufficient conditions for optimality (Classical bounded optimization problem, Nonlinear programming prolem, Theory of duality of convex programming, Geometric programming as a consequence of convex programming duality theory, Quadratic programming, Introduction to internal point methods)					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 502					
A	B	C	D	E	FX
13,75	19,52	21,31	25,5	14,94	4,98
Lecturers: doc. RNDr. Mária Trnovská, PhD.					
Last change: 09.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-321/00		Course title: Non-Linear Programming Classes			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 5.					
Educational level: I.					
Prerequisites:					
Course requirements: Passing the tests Grading A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0					
Learning outcomes: Students improve the knowledge required to pass the Nonlinear programming course.					
Class syllabus: See the syllabus for the Nonlinear programming course.					
Recommended literature: Nelineárne programovanie, teória a algoritmy / Milan Hamala, Mária Trnovská. Bratislava : EPOS, 2013					
Languages necessary to complete the course: Slovak, English					
Notes:					
Past grade distribution Total number of evaluated students: 389					
A	B	C	D	E	FX
60,41	17,48	10,54	5,14	5,4	1,03
Lecturers: doc. RNDr. Mária Trnovská, PhD., Mgr. Martin Hurban					
Last change: 17.05.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-360/14		Course title: Numerical Methods			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 6.					
Educational level: I.					
Prerequisites:					
Course requirements: Continuous assessment: Written exam Exam: Exam Approximate Rating Rating: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 40/60					
Learning outcomes: The student has basic numerical mathematical methods that are necessary for solving problems using current computers and available software.					
Class syllabus: Representation of real numbers and computer arithmetic. Stability. Examples of instability: Recurrent relations and their use. Gronwall lemma. Evaluation of functions. Numerical methods for solving algebraic and transcendental equations. Numerical solution of systems of linear equations: Jacobi method, Gauss--Seidel method, Conjugate gradient method. Numerical solution of systems of nonlinear equations: Bisection method, Newton's method. Interpolation, optimal selection of interpolation nodes. Linear and cubic splines. The least squares method. Numerical differentiation and quadrature.					
Recommended literature: Numerické metódy / J. Babušíková, M. Slodička, J. Weisz. Bratislava: Univerzita Komenského, 2000 Numerical Methods Using Matlab / J. H. Mathews, K. K. Fink. Pearson, 2004					
Languages necessary to complete the course: English					
Notes:					
Past grade distribution Total number of evaluated students: 456					
A	B	C	D	E	FX
35,75	20,83	21,27	14,69	6,8	0,66

Lecturers: doc. RNDr. Peter Guba, PhD.
Last change: 01.05.2017
Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-425/00		Course title: Philosophical Conceptions of Meaning (1)			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: G. Frege on sense reference (denotation) of language expressions; Russell's theory of descriptions; solving of problems - identity sentences, existential sentences and semantic function of expression without reference; critics of theory of descriptions - P. F. Strawson and K. Donnellan. semantics of Tractatus logico-philosophicus - names and objects, sentences as pictures of facts; Alfred Tarski - semantic conception and definition of truth; R. Carnap - method of extension and intension, internal and external questions					
Recommended literature: Frege, G.: "O zmysle a denotáte.", In: Filozofia, roč. 47, 1992, č. 6. Russell, B.: "Opisy.", In: Organon F, 1995, č. 2. Carnap, R.: Meaning and Necessity, Chicago, IL: University of Chicago Press, 1947. Peregrin, J.: Význam a struktura. Oikúmené, Praha 1999. Organon F: preklady článkov Russella, Tarskeho, Donnellana a i. Denotácia, referencia a význam. Organon F, Príloha, Bratislava 2000.					
Languages necessary to complete the course:					
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: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-426/00		Course title: Philosophical Conceptions of Meaning (2)			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: names as rigid designators in "possible worlds"; causal-historical theory of reference; semantic reductionism versus semantic holism; W. v. O. Quine - indeterminateness of translation; inscrutability of reference and ontological relativity; Quine's pragmatism; D. Davidson - radical interpretation and principle of charity; H. Putnam - meaning of "meaning", internal and external realism.					
Recommended literature: Kripke, Saul A.: Pomenovanie a nevyhnutnosť. Kalligram, Bratislava 2002 Davidson, D.: Čin, myseľ, jazyk. Archa, Bratislava 1997. Quine, W. V. O.: Od stimulu k vědě, Academia, Filosofia, Praha 2002 Quine, W. v. O.: Hledání pravdy. Herrmann a synové, Praha 1994. Peregrin, J. (edit): Obrat k jazyku: Druhé kolo. Filosofia, Praha 1998.					
Languages necessary to complete the course:					
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: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-423/00		Course title: Philosophy of L. Wittgenstein (1)			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: analysis selected sections of Wittgenstein's main writings; influence of Frege's and of Russell's works; interpretation of Wittgenstein's Tractatus; "picture theory" of meaning - fact and Picture of fact; name and meaning of name; sentence and sentence meaning; criterium of sentence meaningfulness - tautology and contradiction, empirical sentences; boundaries of language from the standpoint of theory of meaning; "what we cannot speak about"					
Recommended literature: Wittgenstein, L.: Tractatus logico - philosophicus, Kalligram, Bratislava 2003. Wittgenstein, L.: Modrá a Hnedá kniha, Kalligram, Bratislava 2002. Wittgenstein, L.: Filosofická zkoumání, Filosofia, Praha 1998. Malcolm, N.: Ludwig Wittgenstein v spomienkach. Archa, Bratislava 1993.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 36					
A	B	C	D	E	FX
88,89	2,78	5,56	0,0	2,78	0,0
Lecturers: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-424/00		Course title: Philosophy of L. Wittgenstein (2)			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: philosophical problem solving by arranging what we have always known (by looking into the workings of our language) - its possibility meanings of "meaning" in ordinary language; expression meaning as its use (usage, way of use); reading and interpretation of The Blue and Brown Books and of Philosophical Investigations					
Recommended literature: Wittgenstein, L.: Tractatus logico - philosophicus, Praha 1993. Wittgenstein, L.: Modrá a Hnedá kniha, Kalligram, Bratislava 2002. Wittgenstein, L.: Filosofická zkoumání, Filosofía, Praha 1998. Malcolm, N.: Ludwig Wittgenstein v spomienkach. Archa, Bratislava 1993.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 25					
A	B	C	D	E	FX
96,0	4,0	0,0	0,0	0,0	0,0
Lecturers: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KTV/1-MXX-110/00		Course title: Physical Education and Sport (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 0					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: According to the particular sport: practicing of individual game skills in sports like basketball, volleyball, soccer, floorball. Training in the individual sports like swimming, trampoline jumping, rowing and canoeing, aerobic, bodybuiding, command of fundamental technique of sports discipline. To arrange development of coordination abilities, articular mobility and cardiovascular system.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 4433					
A	B	C	D	E	FX
97,23	1,78	0,05	0,0	0,02	0,92
Lecturers: Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, PaedDr. Dana Mašlejová, doc. PhDr. Vojtech Potočný, CSc., Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 25.05.2016					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KTV/1-MXX-120/00		Course title: Physical Education and Sport (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 0					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Practising offensive and defensive combinations and game at modified rules in collective games such as basketball, volleyball, soccer, floorball. Command of elements of higher difficulty in terms of the level of the activity abilities (crawl stroke, breast stroke, butterfly stroke, trampoline jump, aerobic compositions with steps, fitball, elastic gums, paddling on the running water.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 3794					
A	B	C	D	E	FX
97,65	1,95	0,03	0,0	0,0	0,37
Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ondrej Podkonický, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, doc. PhDr. Vojtech Potočný, CSc., PaedDr. Mikuláš Ortutay, Mgr. Viktor Sládok, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KTV/1-MXX-210/00		Course title: Physical Education and Sport (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: To practise game combinations, tactical - mechanical elements in basketball, volleyball, soccer, floorball, ice hockey, badminton, competition rules in the sports specialization.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 2338					
A	B	C	D	E	FX
99,19	0,43	0,0	0,0	0,0	0,38
Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Ondrej Podkonický, doc. PhDr. Vojtech Potočný, CSc., Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/1-MXX-220/00		Course title: Physical Education and Sport (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Preparation for sport championships of the Faculty in the chosen sport at modified rules. The selection of talented students into the teams of the University and Faculty leagues and other faculty sport events.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 2080					
A	B	C	D	E	FX
99,66	0,19	0,0	0,0	0,0	0,14
Lecturers: Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ondrej Podkonický, doc. PhDr. Vojtech Potočný, CSc., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KTV/1-MXX-310/00		Course title: Physical Education and Sport (5)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 5.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Preparation and participation of individuals and teams in the system of university sport competitions and sport events.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1535					
A	B	C	D	E	FX
99,35	0,39	0,0	0,0	0,0	0,26
Lecturers: Mgr. Tomáš Kuchár, PhD., doc. PhDr. Vojtech Potočný, CSc., Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/1-MXX-320/00		Course title: Physical Education and Sport (6)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 6.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Using the communication in the physical education and sport and organizing the sport championships to achieve expressive motion of the sport and health in a valuable orientation the students.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1335					
A	B	C	D	E	FX
99,55	0,22	0,07	0,0	0,0	0,15
Lecturers: PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický, doc. PhDr. Vojtech Potočný, CSc., Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.VC/1-EFM-535/00		Course title: Principles of Accounting			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Accounting as the language of business, introduction to financial statements, accounting process, accounting principles, detailed characterization of the main balance sheet accounts, cash flow statement, financial statement analysis. The course is based on the approach adopted in the international accounting standards IAS/IFRS					
Recommended literature: Hervé Stolowy and Michel J. Lebas: Financial Accounting and Reporting. A global perspective Anna Šlosárová a kolektív: Analýza účtovnej závierky IASB Framework for the Preparation and Presentation of Financial Statements Zákon o účtovníctve č. 431/2002 Z.z. v znení neskorších predpisov					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 348					
A	B	C	D	E	FX
80,46	11,78	4,89	1,72	0,86	0,29
Lecturers: doc. RNDr. Peter Mederly, CSc.					
Last change: 09.07.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAMŠ/1-MAT-281/00	Course title: Probability and Statistics (1)
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 1 per level/semester: 28 / 14 Form of the course: on-site learning	
Number of credits: 4	
Recommended semester: 3.	
Educational level: I.	
Prerequisites: (FMFI.KMANM/1-MAT-150/00 - Mathematical Analysis (2) or FMFI.KMANM/1-MMN-150/15 - Mathematical Analysis (2) or FMFI.KAMŠ/1-EFM-130/00 - Mathematical Analysis (2)) and (FMFI.KAGDM/1-MAT-120/15 - Linear Algebra and Geometry (1) or FMFI.KAGDM/1-MMN-120/00 - Linear Algebra and Geometry (1) or FMFI.KAGDM/1-EFM-121/15 - Linear Algebra and Geometry (1))	
Course requirements: Preliminary semester evaluation: a test Examination: written examination Approximate grade thresholds: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 70/30	
Learning outcomes: After completing the course the student will be able to use classical probability models, axiomatic approach to the definition of probability. He will master one dimensional discrete and continuous random variables. He will be given an introduction to selected statistical procedures: point and interval estimates of parameters sampling normal distribution.	
Class syllabus: Probability space. Classical probability models. Random variable and distribution function. Elementary discrete and continuous distributions, expectation and variance. Independence and correlation. Normal distribution and the central limit theorem. Random sample, sample mean, sample variance. Sampling normal distribution. Estimation of parameters, maximal likelihood, confidence intervals for the mean of a normal distribution.	
Recommended literature: Janková, K., Pázman, A.: Pravdepodobnosť a štatistika, Vydavateľstvo UK 2011 Harman, R., Honschová, E., Somorčík, J.: Zbierka úloh zo základov teórie pravdepodobnosti, Paci Bratislava 2009 G.R.Grimmett, D. Stirzaker: Probability and Random Processes. Oxford University Press 2001	
Languages necessary to complete the course:	
Notes:	

Past grade distribution					
Total number of evaluated students: 1069					
A	B	C	D	E	FX
16,93	12,44	17,59	21,8	26,1	5,14
Lecturers: doc. RNDr. Katarína Janková, CSc., Mgr. Lívia Leššová, Mgr. Jozef Kováč					
Last change: 28.04.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KAMŠ/1-MAT-282/00	Course title: Probability and Statistics (2)
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 1 per level/semester: 28 / 14 Form of the course: on-site learning	
Number of credits: 4	
Recommended semester: 4.	
Educational level: I.	
Prerequisites: FMFI.KAMŠ/1-MAT-281/00 - Probability and Statistics (1)	
Course requirements: Preliminary assessment: test Examination: written examination Approximate final assessment: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 30/70	
Learning outcomes: After completing the course the student will master multivariate discrete and continuous distributions. He will be able to calculate distributions of sums, products and ratios of independent random variables. He will know the technique of characteristic functions and will be able to apply it to the multidimensional normal distribution. The knowledge of probability methods will be applied to selected statistical problems of parameter estimation and hypotheses testing.	
Class syllabus: Multiple random variables, their distribution and characteristics. Elementary introduction to Lebesgue integral. Marginal and conditional distributions and densities. Independence, sums of independent random variables. Characteristic functions and their applications. Convergence of sequences of random variables, central limit theorems and weak law of large numbers. Statistical inference: estimation of parameters, maximal likelihood estimates, hypothesis testing. Neyman Pearson lemma. Regression models: least squares and maximal likelihood estimation of parameters. Goodness of fit tests.	
Recommended literature: Janková, K., Pázman, A.: Pravdepodobnosť a štatistika, Vydavateľstvo UK 2011 K. Zvára, J. Štěpán: Pravděpodobnost a matematická statistika, Matfyzpress 1997 Harman, R., Honschová, E., Somorčík, J.: Zbierka úloh zo základov teórie pravdepodobnosti, Paci Bratislava 2009 G.R.Grimmett, D. Stirzaker: Probability and Random Processes. Oxford University Press 2001	
Languages necessary to complete the course:	
Notes:	

Past grade distribution					
Total number of evaluated students: 970					
A	B	C	D	E	FX
19,07	11,13	14,95	19,18	28,87	6,8
Lecturers: doc. RNDr. Katarína Janková, CSc., Mgr. Lívia Leššová, Mgr. Jozef Kováč, Mgr. Samuel Rosa					
Last change: 28.04.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-PMA-754/16		Course title: Probability and Statistics Classes (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 1 per level/semester: 14 Form of the course: on-site learning					
Number of credits: 1					
Recommended semester: 3.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 48					
A	B	C	D	E	FX
60,42	8,33	18,75	8,33	0,0	4,17
Lecturers: Mgr. Jozef Kováč					
Last change: 25.04.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-421/00		Course title: Problems of Analytical Philosophy (1)			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: beginnings - G. Frege, B. Russell and G. E. Moore; goals and methods of the philosophical analysis; relation between language and "world" (Tractatus logico-philosophicus); search for criteria of meaningfulness of sentences; critics of traditional philosophy and of its "pseudoproblems"; Vienna circle - the principle of verifiability and its variants; logical positivism and its limits					
Recommended literature: Frege, G.: "O zmysle a denotáte.", In: Filozofia, roč. 47, 1992, č. 6. Russell, B.: "Opisy.", In: Organon F, 1995, č. 2 Kamhal, D.(ed.): Z analytickej filozofie I., UK Bratislava 1993, textbook Peregrin, J.: Kapitoly z analytickej filozofie, Filozofia, Praha 2005. Valenta, L.: Problémy analytickej filozofie. Nakladatelství Olomouc 2003.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 35					
A	B	C	D	E	FX
91,43	5,71	2,86	0,0	0,0	0,0
Lecturers: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-422/00		Course title: Problems of Analytical Philosophy (2)			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: Natural (ordinary) language and artificial language; two approaches to the analysis of ordinary language; late Wittgenstein - meaning of expression and use of expression, language games; Oxonian "linguistic philosophy" (P. F. Strawson, J. L. Austin, H. P. Grice); J. Searle and elaboration of theory of speech acts; Quine's pragmatism and his critics of dogmas of empiricism; inscrutability of reference and ontological relativity; D. Davidson and his pragmatism					
Recommended literature: Filozofia prirodzeného jazyka, (ed. M. Oravcová) Bratislava, Archa 1992. Strawson, P. F.: Analýza a metafyzika. Kalligram, Bratislava 2001. Quine, W. V. O.: Od stimulu k vědě, Academia, Filosofia, Praha 2002 Davidson, D.: Subjektivita, intersubjektivita, objektivita, Praha 2004					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 9					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KZVI/1-MAT-130/14		Course title: Programming (1)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 1.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes: Students are able to solve problems algorithmically, to process large number of data and to communicate with the user using basic constructions and data types of programming language C #.					
Class syllabus: Graphic commands, Expressions and variables, Loops, Program branching, Solving mathematical problems, Subroutines, Array, Mouse input, Two-dimensional array, Functions					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1730					
A	B	C	D	E	FX
32,89	10,69	10,58	13,99	23,93	7,92
Lecturers: doc. RNDr. Ľubomír Salanci, PhD.					
Last change: 25.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KZVI/1-MAT-170/00		Course title: Programming (2)			
Educational activities: Type of activities: lecture / practicals Number of hours: per week: 2 / 2 per level/semester: 28 / 28 Form of the course: on-site learning					
Number of credits: 5					
Recommended semester: 2.					
Educational level: I.					
Prerequisites: FMFI.KZVI/1-MAT-130/14 - Programming (1)					
Course requirements:					
Learning outcomes: Using object-oriented programming in the C # programming language, students are able to solve problems algorithmically, process structured data and interact with the user.					
Class syllabus: Strings, Objects, Timer, Many objects, Turtle graphics, Recursion, Bitmaps, Text files, Keyboard input					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 1500					
A	B	C	D	E	FX
31,4	16,53	12,2	14,07	20,47	5,33
Lecturers: doc. RNDr. Ľubomír Salanci, PhD.					
Last change: 25.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/1-UXX-340/00		Course title: Recreation Sports in Dially Routine of Pupils and Students			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 5.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: To optimize the daily working programme of the students, the programmes of the sport recreational activities and time-off the students. The sport and health in a value orientation of the students. Using developed elemens in an education physical activity and sport preparation. The programmes of the sport recreational activities as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors as a basic precondition of health strengthening, acquirement of physical capability, fitness, regaining of working energy and readiness of body to confront stress situations and dangerous factors.					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 44					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: doc. PhDr. Vojtech Potočný, CSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-161/00		Course title: Russian Language (1)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject provides a course in Russian language for beginners.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 642					
A	B	C	D	E	FX
60,9	16,2	9,66	4,83	1,71	6,7
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-162/00		Course title: Russian Language (2)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The subject continues the program of Russian language (1) and provides a course of Russian for beginners.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 389					
A	B	C	D	E	FX
65,81	16,2	9,0	3,34	1,03	4,63
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KJP/1-MXX-261/00		Course title: Russian Language (3)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 191					
A	B	C	D	E	FX
70,68	17,28	8,38	2,62	0,0	1,05
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KJP/1-MXX-262/00		Course title: Russian Language (4)			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.					
Recommended literature: The textbook has not been published. It is at students' disposal in an electronic format.					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 130					
A	B	C	D	E	FX
73,85	13,85	7,69	3,08	0,77	0,77
Lecturers: PhDr. Elena Klátiková					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-550/15		Course title: Selected Topics of Mathematical Analysis			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 5.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-250/00 - Mathematical Analysis (4)					
Antirequisites: FMFI.KAMŠ/1-EFM-550/00					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 240					
A	B	C	D	E	FX
31,67	15,42	19,17	13,75	17,92	2,08
Lecturers: prof. RNDr. Pavol Quittner, DrSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-551/15		Course title: Selected Topics of Mathematical Analysis (2)			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 6.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-EFM-550/15 - Selected Topics of Mathematical Analysis					
Antirequisites: FMFI.KAMŠ/1-EFM-551/00					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 54					
A	B	C	D	E	FX
46,3	16,67	11,11	12,96	9,26	3,7
Lecturers: prof. RNDr. Pavol Quittner, DrSc.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-235/15		Course title: Seminar in Matrix Calculus			
Educational activities: Type of activities: seminar Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAMŠ/1-EFM-235/00					
Course requirements: homework, test Scale of assessment (preliminary/final): 50/50					
Learning outcomes:					
Class syllabus: practical applicationa and problems solving for vector p-norms, equivalent norms, norms in inner product spaces, parallelogram identity, matrix norms, Frobenius matrix norm, induced matrix norms and their properties, conditioning of a problem, matrix condition number, perturbation analysis for solving linear system, singular value decomposition, geometric interpretation, reduced SVD, least squares problem, normal system of linear equations, optimal pseudosolution, pseudoinverse matrices and their properties, computation of pseudoinverse matrixvia normal equations, via SVD, via skeleton decomposition of a matrix					
Recommended literature: C.D. Meyer Matrix analysis and applied linear algebra, SIAM, 2001, David C. Lay Linear algebra and its applications, Pearson Education, 2016, S.L. Campbell, Carl D. Meyer Generalised inverses of linear transformation, SIAM, 2009, W. Ford Numerical linear algebra with applications using MATLAB, Elsevier 2014					
Languages necessary to complete the course: Slovak					
Notes:					
Past grade distribution Total number of evaluated students: 507					
A	B	C	D	E	FX
64,89	17,75	12,82	4,34	0,2	0,0
Lecturers: RNDr. Dušan Krajčovič, CSc.					

Last change: 17.05.2018
Approved by: doc. RNDr. Margaréta Halická, CSc.

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-PMA-752/14		Course title: Solution methods in probability and statistics			
Educational activities: Type of activities: practicals Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-MAT-281/00 - Probability and Statistics (1)					
Course requirements: Assessment during the term: homework, test Scale of assessment (preliminary/final): 100/0					
Learning outcomes: Student gains skills in applying the knowledge from probability and statistics to solve problems, including real life applications.					
Class syllabus: Combinatorial probability, conditional probabilities and Bayes theorem, discrete and continuous random vectors and their applications.					
Recommended literature:					
Languages necessary to complete the course: Slovak, English					
Notes:					
Past grade distribution Total number of evaluated students: 31					
A	B	C	D	E	FX
80,65	12,9	3,23	0,0	3,23	0,0
Lecturers: doc. RNDr. Mgr. Beáta Stehlíková, PhD.					
Last change: 17.05.2018					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/1-MXX-115/15		Course title: Sports in Nature (1)			
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 171					
A	B	C	D	E	FX
99,42	0,0	0,58	0,0	0,0	0,0
Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický					
Last change: 25.05.2016					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KTV/1-MXX-115/15		Course title: Sports in Nature (1)			
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 1.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 171					
A	B	C	D	E	FX
99,42	0,0	0,58	0,0	0,0	0,0
Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický					
Last change: 25.05.2016					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/1-MXX-215/15		Course title: Sports in Nature (2)			
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 4.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 94					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický					
Last change: 25.05.2016					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFL.KTV/1-MXX-215/15		Course title: Sports in Nature (2)			
Educational activities: Type of activities: Number of hours: per week: per level/semester: Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 3.					
Educational level: I., II.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 94					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
Lecturers: Mgr. Martin Dovičák, Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Ondrej Podkonický					
Last change: 25.05.2016					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-EFM-330/00		Course title: Statistical Methods			
Educational activities: Type of activities: lecture Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 3					
Recommended semester: 5.					
Educational level: I.					
Prerequisites: FMFI.KAMŠ/1-MAT-282/00 - Probability and Statistics (2)					
Course requirements:					
Learning outcomes: Students will be able to use the basic methods of mathematical statistics, and they will also understand their principles. They will also understand some of the more general statistical techniques that they will be able to apply in a specific situation and which will later be used in other statistics related subjects.					
Class syllabus: The properties of the sample mean and sample variance. T-tests and F-tests. Basic confidence intervals and Bonferroni method. How to create a test? How to measure test quality? Neyman-Pearson's lemma and UMP tests for compound hypotheses. How to measure the quality of the estimates? BLUE, BUE, Cramer-Rao inequality. Asymptotic properties of estimates and maximum likelihood method. Wald test and score test. Bootstrap and jackknife					
Recommended literature: Lamoš, Potocký: Pravdepodobnosť a matematická štatistika, Štatistické analýzy, VUK, Bratislava, 1998 Anděl: Matematická štatistika, SNTLI ALFA, Praha 1985					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 502					
A	B	C	D	E	FX
43,63	15,94	14,34	11,35	11,75	2,99
Lecturers: Mgr. Ján Somorčík, PhD.					
Last change: 09.10.2017					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAMŠ/1-MXX-501/15		Course title: Statistics for Non-statisticians			
Educational activities: Type of activities: course Number of hours: per week: 2 per level/semester: 28 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester:					
Educational level: I.					
Prerequisites:					
Antirequisites: FMFI.KAMŠ/1-MXX-501/14					
Course requirements:					
Learning outcomes:					
Class syllabus:					
Recommended literature:					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 15					
A	B	C	D	E	FX
93,33	0,0	0,0	0,0	0,0	6,67
Lecturers: doc. Mgr. Ján Mačutek, PhD.					
Last change:					
Approved by: doc. RNDr. Margaréta Halická, CSc.					

COURSE DESCRIPTION

University: Comenius University in Bratislava					
Faculty: Faculty of Mathematics, Physics and Informatics					
Course ID: FMFI.KAI/1-MXX-428/00		Course title: Theory of Speech Acts			
Educational activities: Type of activities: lecture / seminar Number of hours: per week: 1 / 1 per level/semester: 14 / 14 Form of the course: on-site learning					
Number of credits: 2					
Recommended semester: 2.					
Educational level: I.					
Prerequisites:					
Course requirements:					
Learning outcomes:					
Class syllabus: semantics versus pragmatics; logical analysis and the analysis of language practice; speech act as a basic unit of communication; performative and constative utterances, speech acts - taxonomy and criteria; locutionary, illocutionary and perlocutionary aspects of speech acts; meaning of an expression as a way of its use and as its use (convention versus intention); meaning of expression, sentence meaning and utterer's meaning; referring as a speech act; applications of the theory of speech acts; conversational "implicatures" and maxims of conversation (H. P. Grice)					
Recommended literature: Austin, J. L.: How to do things with words, Oxford UP, 1975 (in Slovak Ako niečo robiť slovami, Kalligram, Bratislava 2004 Jak udělat něco slovy) Grice, H. P.: Studies in the way of words, Harvard UP, 1991 Searle, J. R.: Speech acts, Cambridge University Press, var. editions Wittgenstein, L.: Filozofické skúmania, Pravda, Bratislava 1979					
Languages necessary to complete the course:					
Notes:					
Past grade distribution Total number of evaluated students: 42					
A	B	C	D	E	FX
73,81	11,9	2,38	4,76	7,14	0,0
Lecturers: PhDr. Dezider Kamhal, PhD.					
Last change: 02.06.2015					
Approved by: doc. RNDr. Margaréta Halická, CSc.					