

## Course descriptions

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## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KEF/1-MMN-140/00	<b>Course title:</b> Accounting I
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Continuous assessment for the term (40 percent), exam (60 percent). The condition for completing the course is to complete two control papers during the course (with a success rate of at least 50 percent - the result is the bonus points for the exam). Present the knowledge outlined in the brief syllabus. The evaluation of the course is in accordance with the Study Regulations of Comenius University and the individual levels of the classification scale are awarded on the basis of the applied points system, which reflects the degree of success of completing the course. Scale of assessment (preliminary/final): 40/60	
<b>Learning outcomes:</b> The student is able to give a comprehensive picture of accounting with regard to its subject and understand the role of accounting in the company's information system, describe basic accounting concepts, balance sheet accounting theory, accounting documents, valuation issues, financial statement processes and international accounting harmonization, and taxes from the aspect of decision making process.	
<b>Class syllabus:</b> <ol style="list-style-type: none"> <li>1. The importance of accounting as part of a business information system</li> <li>2. The objectives and functions of accounting</li> <li>3. General accounting principles</li> <li>4. Assets and liabilities</li> <li>5. Balance sheet, its content and role. Impact of economic operations on a balance sheet.</li> <li>6. Double-entry accounting (bookkeeping) system</li> <li>7. Accounting documents, books of account</li> <li>8. Valuation of assets and liabilities in the double entry accounting (bookkeeping). Understanding the cycle of assets by the double entry accounting (bookkeeping)</li> <li>9. The financial statements and its structure</li> <li>10. Conceptual framework of IFRS and principles of IFRS conversion from Slovak financial statements to the financial statements according to the IAS / IFRS</li> </ol>	

11. Accounting and taxes					
12. Taxes and decision making process					
<b>Recommended literature:</b>					
1. Paul D. Kimmel, Jerry J. Weygandt, Donald E. Kieso- Financial Accounting: Tools for Business Decision Making, WileyPLUS, 7th Edition, 2013					
2. Jerry J. Weygandt, Paul D. Kimmel, Donald E. Kieso- Financial and Managerial Accounting, WileyPLUS, 2nd Edition, 2015					
<b>Languages necessary to complete the course:</b>					
english					
<b>Notes:</b>					
<b>Past grade distribution</b>					
Total number of evaluated students: 605					
A	B	C	D	E	FX
37,52	17,52	22,64	12,56	8,1	1,65
<b>Lecturers:</b> doc. Ing. Jana Kajanová, PhD.					
<b>Last change:</b> 06.09.2021					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KEF/1-MMN-170/00	<b>Course title:</b> Accounting II
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Recommended prerequisites:</b> Principles of Financial Accounting I	
<b>Course requirements:</b> Pass the control papers during the lessons (with a success rate of at least 50%). Present the knowledge outlined in the brief syllabus. The evaluation of the subject is in accordance with the study regulations of UK. Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> The student is able to illustrate accounting procedures for double-entry accounting for entrepreneurs, to learn fundamental reciprocity while accounting on synthetic accounts of double-entry bookkeeping of businessmen using general chart of accounts and accounting procedures issued by Ministry of Finance of SR.	
<b>Class syllabus:</b> <ol style="list-style-type: none"> <li>1. The accounting methodology</li> <li>2. Accounting of long-term/non-current assets, evaluation of assets</li> <li>3. Accounting of long-term/non-current assets, depreciation, disposal of an assets</li> <li>4. Accounting of inventories</li> <li>5. Accounting of short-term assets and financial assets</li> <li>6. Accounting of short-term liabilities</li> <li>7. Accrued expenses and revenues</li> <li>8. Accounting of equity and long-term liabilities</li> <li>9. Accounting of costs</li> <li>10. Accounting of revenues</li> <li>11. Financial Statements</li> <li>12. Solving of comprehensive exercise</li> </ol>	
<b>Recommended literature:</b>	

1. Kajanová, J.: Podvojné účtovníctvo pre podnikateľov - z aspektu riadenia a rozhodovania. Wolters Kluwer (v tlači), Bratislava 2021
2. Kajanová, J. - Olvecká, V. - Saxunová, D.: Podvojné účtovníctvo. Zbierka úloh a príkladov. Wolters Kluwer, Bratislava, 2018
3. Zákon č. 431/2002 Z. z. o účtovníctve v znení neskorších predpisov
4. Zákon č. 595/2003 Z. z. o dani z príjmu v znení neskorších predpisov
5. Opatrenie MF SR č. 23054/2002-92 zo 16. 12. 2002, ktorým sa ustanovujú podrobnosti o postupoch účtovania a rámcovej účtovej osnove pre podnikateľov účtujúcich v sústave podvojného účtovníctva v znení neskorších predpisov

**Languages necessary to complete the course:**

Slovak, English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 565

A	B	C	D	E	FX
23,36	19,12	20,18	18,41	15,58	3,36

**Lecturers:** doc. Ing. Jana Kajanová, PhD.

**Last change:** 29.09.2021

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/1-MMN-515/00		<b>Course title:</b> Algebra and Geometry Complementary Classes (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Revision of all basic notions seen in the lecture and going through the most typical situations which the students can meet during the study of the subject. Giving sufficient number of practical exercises for homework and to discuss their solutions when necessary.					
<b>Recommended literature:</b> The current textbooks recommended by the course teacher.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 524					
A	B	C	D	E	FX
45,8	19,66	15,84	7,06	8,21	3,44
<b>Lecturers:</b> Mgr. Dominik Hollý					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/1-MMN-525/00		<b>Course title:</b> Algebra and Geometry Complementary Classes (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Revision of all basic notions seen in the lecture and going through the most typical situations which the students can meet during the study of the subject. Giving sufficient number of practical exercises for homework and to discuss their solutions when necessary.					
<b>Recommended literature:</b> The current textbooks recommended by the course teacher.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 443					
A	B	C	D	E	FX
50,56	18,74	13,09	7,9	4,29	5,42
<b>Lecturers:</b> Mgr. Dominik Hollý					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-910/00		<b>Course title:</b> BSc Project (1)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> per week:   per level/semester: <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> To start searching in literature following the type of problem solved.					
<b>Recommended literature:</b> Related to given problem					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 468					
A	B	C	D	E	FX
86,32	9,62	2,56	0,43	1,07	0,0
<b>Lecturers:</b>					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-920/00		<b>Course title:</b> BSc Project (2)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> To use relevant literature to complete solution of chosen problem.					
<b>Recommended literature:</b> Related to given problem					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 464					
A	B	C	D	E	FX
84,48	10,13	3,02	0,43	1,08	0,86
<b>Lecturers:</b>					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## STATE EXAM DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1- MMN-991/15	<b>Course title:</b> BSc Thesis Defense
<b>Number of credits:</b> 2	
<b>Educational level:</b> I.	
<b>State exam syllabus:</b>	
<b>Last change:</b> 02.06.2015	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MAT-510/00		<b>Course title:</b> Biomathematics (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KMANM/1-MAT-250/14 - Mathematical Analysis (4) or FMFI.KMANM/1-MMN-250/17 - Mathematical Analysis (4) or FMFI.KMANM/1-BMF-261/15 - Basics of Mathematics (4)					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 40/60					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Selection dynamics and population genetics: Hardy-Weinberger law for two and more alleles, the selection equation, the mutation selection equation, the selection recombination equation. Models of population ecology: logistic equation, Lotka-Volterra equations for predator-prey systems with and without intraspecific competition.					
<b>Recommended literature:</b> J. Hofbauer, K. Sigmund: The Theory of Evolution and Dynamical systems, Cambridge University Press, Cambridge 1988.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 141					
A	B	C	D	E	FX
51,77	17,73	18,44	7,8	3,55	0,71
<b>Lecturers:</b> prof. RNDr. Jaroslav Jaroš, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MAT-515/00		<b>Course title:</b> Biomathematics (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KMANM/1-MAT-510/00 - Biomathematics (1)					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Models of population ecology: the equilibria and their stability, Lotka-Volterra equations for more than two populations. Game dynamics: evolutionary stable strategies, evolution of phenotypes, equations for asymmetric games.					
<b>Recommended literature:</b> J. Hofbauer, K. Sigmund: The Theory of Evolution and Dynamical systems, Cambridge University Press, Cambridge 1988.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 63					
A	B	C	D	E	FX
42,86	15,87	23,81	14,29	1,59	1,59
<b>Lecturers:</b> prof. RNDr. Jaroslav Jaroš, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAI/1-AIN-407/15		<b>Course title:</b> Brain and Mind			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1., 3., 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 154					
A	B	C	D	E	FX
48,05	18,83	15,58	8,44	2,6	6,49
<b>Lecturers:</b> RNDr. Barbora Cimrová, PhD., doc. PhDr. Ján Rybár, PhD.					
<b>Last change:</b> 21.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-285/00		<b>Course title:</b> Business Graphics (1)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Vector graphic editors. Applications graphic software CorelDRAW in advertising.					
<b>Recommended literature:</b> Corel DRAW!5 , GRADA Publishing 1995 CorelDRAW Graphics Suite X3, 2008 Corel Corporation Manuals to individual version <a href="http://www.corel.com/">http://www.corel.com/</a>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 58					
A	B	C	D	E	FX
68,97	12,07	6,9	0,0	10,34	1,72
<b>Lecturers:</b> RNDr. Peter Švaňa, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-300/00		<b>Course title:</b> Business Graphics (2)			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Bitmaps editors Applications graphic software PHOTO-PAINT in advertising.					
<b>Recommended literature:</b> Corel DRAW!5 , GRADA Publishing 1995 CorelDRAW Graphics Suite X3, 2008 Corel Corporation Manuals to individual version <a href="http://www.corel.com/">http://www.corel.com/</a>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 38					
A	B	C	D	E	FX
42,11	5,26	18,42	2,63	5,26	26,32
<b>Lecturers:</b> RNDr. Peter Švaňa, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KIS/1- MMN-280/00	<b>Course title:</b> Business Law I
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 52 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> interim evaluation - project (30%), written/online test (70%) The evaluation of the course is in accordance with the Study Regulations of Comenius University and the individual levels of the classification scale are awarded on the basis of the applied points system, which reflects the degree of success of completing the course. Scale of assessment (preliminary/final): interim evaluation - project (30%), written/online test (70%)	
<b>Learning outcomes:</b> The student is able to orientate in the field of commercial law, which is an integral part of the business environment. After completing the course (the first part of Business Law), the student will gain comprehensive knowledge in the field of starting a business and closing a business from a legal point of view. The student will get acquainted with the principles of legal regulation of commercial law, with individual commercial law institutes (business, entrepreneur, business name, enterprise), as well as with individual forms of business in the conditions of the Slovak Republic (establishment, creation, change and termination of companies). the student learns about the practices of unfair competition and an integral part is also an overview of the types of unfair competition proceedings. The aim is to correctly interpret the relevant business regulations and to be able to apply the acquired knowledge in practice.	
<b>Class syllabus:</b> The concept and subject matter of business law; sources of business law and the relationship of business law to other branches of law; business - definition, typology; business of Slovak and foreign persons; entrepreneur - definition, categories, identification marks, enterprise and its composition; legal forms of commercial companies - public trading company, limited partnership, limited liability company, simple company for shares; joint stock company; establishment and formation of companies; liquidation and dissolution of companies; registration in the commercial register; trade business - subjects, conditions of trade operation, types of trades, creation and termination of trade license; unfair competition practices; unfair competition and legal remedies of protection against unfair competition.	

**Recommended literature:**

[1] Peráček, T. - Mucha, B. Obchodné právo pre manažérov : vybrané kapitoly, 2019, 126 s. ISBN 978-80-223-4789-1.

[2] Treľová, S. Obchodné právo : pre medzinárodný manažment. - 1. vyd. - Bratislava : Univerzita Komenského v Bratislave, 2014. - 124 s. ISBN 978-80-223-3689-5.

[3] Act no. 513/1991 Coll. Commercial Code as amended

[4] Act no. 455/1991 Coll. on Trade Licensing, as amended

[5] Act no. 530/2003 Coll. on the Commercial Register and on Amendments to Certain Acts, as amended

**Languages necessary to complete the course:**

Slovak language

**Notes:****Past grade distribution**

Total number of evaluated students: 500

A	B	C	D	E	FX
35,4	28,8	17,4	9,4	8,8	0,2

**Lecturers:** doc. JUDr. PhDr. Tomáš Peráček, PhD., doc. JUDr. PhDr. Silvia Treľová, PhD.

**Last change:** 19.09.2021

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KIS/1-MMN-335/00	<b>Course title:</b> Business Law II
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> interim evaluation - project (30%), written/online test (70%) The evaluation of the course is in accordance with the Study Regulations of Comenius University and the individual levels of the classification scale are awarded on the basis of the applied points system, which reflects the degree of success of completing the course. Scale of assessment (preliminary/final): interim evaluation - project (30%), written/online test (70%)	
<b>Learning outcomes:</b> The student will gain an overview of the full range of business obligations, as well as their content. After completing the course, the student will gain comprehensive knowledge of the contractual relationships that entrepreneurs enter into as part of their business activities. The aim is to teach students to orient correctly in the field of business obligations, to acquaint them with the principles of legal regulation of the law of obligations, the origin, security and termination of obligations as well as with individual contract types and their application in commercial contractual relations.	
<b>Class syllabus:</b> Definition of business-obligation relations; concluding business contracts; institutes for securing trade payables; termination of obligations and termination of business obligations; limitation and prescription in business law; contract types and unnamed contracts; purchase contract and work contract; business sale agreement; mandate agreement; commission contract; mediation agreement; agency contract; transport contracts; banking types of contracts; loan agreement; silent partnership agreement; license agreement	
<b>Recommended literature:</b> Recommended literature: [1] Peráček, T.: Obchodné záväzkové vzťahy. 1. vyd., Bratislava: Univerzita Komenského v Bratislave. 2019, 80 s. ISBN 978-80-223-4709-9.	

[2] Treľová, S. Obchodné právo : pre medzinárodný manažment. - 1. vyd. - Bratislava : Univerzita Komenského v Bratislave, 2014. - 124 s. ISBN 978-80-223-3689-5. [3] Act no. 513/1991 Coll. Commercial Code as amended					
<b>Languages necessary to complete the course:</b> Slovak language					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 333					
A	B	C	D	E	FX
39,64	32,73	15,32	8,41	3,9	0,0
<b>Lecturers:</b> JUDr. Juraj Vališ, doc. JUDr. PhDr. Tomáš Peráček, PhD., doc. JUDr. PhDr. Silvia Treľová, PhD.					
<b>Last change:</b> 19.09.2021					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAI/1-AIN-408/15		<b>Course title:</b> Cognitive Laboratory			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1., 3., 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 54					
A	B	C	D	E	FX
70,37	12,96	7,41	1,85	0,0	7,41
<b>Lecturers:</b> doc. PhDr. Ján Rybár, PhD.					
<b>Last change:</b> 14.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAMŠ/1-EFM-556/15	<b>Course title:</b> DEA Models
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b> FMFI.KAMŠ/1-EFM-220/00 - Linear Programming or FMFI.KMANM/1-MMN-255/00 - Linear Programming	
<b>Course requirements:</b> Continuous assessment: project 30%, small written exams or homeworks 20% , a necessary condition to obtain at least 10% of the 30% evaluation for the project Examination: written 50%, possible oral exam (improvement or deterioration of the achieved evaluation by one degree) Indicative assessment scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> 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.	
<b>Class syllabus:</b> 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, supereffektivity, rules for correct application of DEA models, SBM model, AR model.	
<b>Recommended literature:</b> Data envelopment analysis : A comprehensive Text with Models, applications, references and DEA- Solver software / William W. Cooper [et al.]. Boston : Kluwer , 2004 M. Halická: Učebné texty k predmetu DEA modely dostupné na <a href="http://www.iam.fmph.uniba.sk/institute/halicka/text/TextDEA35.pdf">www.iam.fmph.uniba.sk/institute/halicka/text/TextDEA35.pdf</a>	
<b>Languages necessary to complete the course:</b> Slovak, English	
<b>Notes:</b>	

<b>Past grade distribution</b>					
Total number of evaluated students: 212					
A	B	C	D	E	FX
42,92	27,36	17,92	8,96	0,94	1,89
<b>Lecturers:</b> doc. RNDr. Margaréta Halická, CSc.					
<b>Last change:</b> 17.06.2022					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KIS/1-MMN-571/21	<b>Course title:</b> Data Analysis in Management
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Antirequisites:</b> FM.KIS/372B/20	
<b>Course requirements:</b> Scale of assessment (preliminary/final): 30/70	
<b>Learning outcomes:</b> Business Data Scientist <ul style="list-style-type: none"> <li>• Analyzes data using a variety of tools</li> <li>• Solves problems using modeling techniques</li> <li>• Designs, builds and maintains data and analytical infrastructure</li> <li>• Creates sophisticated analytical models</li> <li>• Derives comprehensive data outputs to inform the client and facilitate his business decision</li> <li>• Skills: data extraction, data transformation, data retrieval, dynamic data analysis, machine learning, Big Data, SQL, R, Python and many more.</li> </ul>	
<b>Class syllabus:</b> Part one - Working with a real NAY database in SQL <ol style="list-style-type: none"> <li>1. What does a real database look like and what does stored real data look like? (Introduction to SQL. Basic structures. Basic commands (Select, Where, Order By, ...). Data types. Keys.)</li> <li>2. How to extract the necessary data from the database for further analysis? (Join, Inner Join, Union, ...)</li> <li>3. How to save hours in demanding databases when downloading and analyzing data in SQL? (Efficient code writing in SQL. Window Function.)</li> <li>4. Summarizing knowledge (Practicing previous tasks Indexing.)</li> </ol> Part Two - Statistics in R <ol style="list-style-type: none"> <li>5. How to use R, one of the most commonly used languages by data analysts (Introduction to R. Library. Variables. Fields. Data Frames. Functions. For cycle. If.)</li> <li>6. How to perform descriptive and exploratory analysis of the data set? (Basic statistical indicators (mean, variance, quantiles). Graphs (histogram, boxplot).) What is the value of the average cart in the NAY? How many products does it contain? Does the NAY have any wholesale buyers?</li> </ol>	

7. How to verify and test hypotheses in R (part 1)? (Statistical induction. Testing of statistical hypotheses. Parametric tests.) Is the average purchase rate in NAY Electrode the same in the West and East?
8. How to verify and test hypotheses in R (part 2)? (Statistical induction. Testing of statistical hypotheses. Nonparametric tests.)
9. How do I find out the basic relationships and connections between the variables of a data set? (Correlation and association analysis. Covariance. Correlation and correlation coefficients. Chi-square test, association measures) When a customer pays points, does he buy for more money? The more points a customer has on the NAY card, the more expensive products they buy?
10. How do I find out the relationship between two / more independent / dependent variables of a data set? (F-test, t-test and ANOVA - parametric / non-parametric.) Do customer baskets with a loyalty card contain more expensive products than customer baskets without a loyalty card? Do customers with a higher level of NAY card buy more than customers with a lower level?
11. How do I reveal more complex relationships in the data and make a prediction? (Regression models - linear / logistic. Simple and multiple linear / logistic model. Least squares method.) What does the customer's purchase amount at NAY Elektrodom depend on?
12. How do I identify a trend in the data? (Time series analysis. Decomposition of time series into components. Trend determination.)
- Part three - Python
13. How to use the acquired knowledge in the increasingly used Python language?
- Part four - Lecture with an attractive guest from practice.

**Recommended literature:**

**Languages necessary to complete the course:**

**Notes:**

**Past grade distribution**

Total number of evaluated students: 2

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

**Lecturers:** doc. Ing. Iveta Stankovičová, PhD., Mgr. Tadeáš Chujac

**Last change:** 14.03.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM+KAMŠ/1-MMN-310/15		<b>Course title:</b> Databases and Information Systems			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 52 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KAMŠ/1-MMN-310/00					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 38					
A	B	C	D	E	FX
28,95	5,26	5,26	18,42	42,11	0,0
<b>Lecturers:</b> doc. RNDr. Vladimír Toma, PhD., RNDr. Igor Odrobina, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KI+KAG/1-MMN-220/15		<b>Course title:</b> Discrete Mathematics			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 26 / 13 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KAGDM/1-MMN-220/00					
<b>Course requirements:</b> Continuous evaluation: homework (20 p.) Final exam: written exam (80 p.) Grades: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 20/80					
<b>Learning outcomes:</b> Overview of specific real world problems as well as different mathematical disciplines, which can be expressed in the language of discrete mathematics, while focus is placed on active use of method leading to the solutions.					
<b>Class syllabus:</b> The concept of graph, connectivity, metrics, searching graph, shortest path problem, trees and spanning trees, optimal tree, matching in graph, finding perfect matching cycles in graph, problem transformation, NP - hard and NP - equivalent problems, basic NP - hard problems.					
<b>Recommended literature:</b> Kapitoly z diskrétní matematiky / Jiří Matoušek, Jaroslav Nešetřil. Praha : Karolinum, 2002 Grafové algoritmy / Ján Plesník. Bratislava : Veda, 1983					
<b>Languages necessary to complete the course:</b> slovak, english					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 29					
A	B	C	D	E	FX
79,31	17,24	3,45	0,0	0,0	0,0

<b>Lecturers:</b> doc. RNDr. Eduard Toman, CSc., RNDr. Jana Tomanová, CSc.
<b>Last change:</b> 19.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/1-EFM-120/17		<b>Course title:</b> Economics (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 3 <b>per level/semester:</b> 39 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Continuous test. Final test- Scale of assessment (preliminary/final): 40/60					
<b>Learning outcomes:</b> Students will understand the basics of neoclassical, textbook economics.					
<b>Class syllabus:</b> Market forces - demand, supply. Costs, cost function. Basic market models. Perfect competition. Monopoly. Monopolistic competition. Oligopoly markets. Pricing. The role of government in a market economy.					
<b>Recommended literature:</b> Michael Baye: Managerial Economics and Bussines Strategy.					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 363					
A	B	C	D	E	FX
14,88	23,42	18,18	23,42	9,92	10,19
<b>Lecturers:</b> doc. RNDr. Ján Bod'a, CSc.					

<b>Last change:</b> 09.03.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/1-EFM-140/17		<b>Course title:</b> Economics (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 3 <b>per level/semester:</b> 39 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Mid-term test, final test. Scale of assessment (preliminary/final): 40/60					
<b>Learning outcomes:</b> Understanding the basics of how the country's economy as a whole works. The role of government and central bank.					
<b>Class syllabus:</b> Gross domestic product. Total demand in the economy. IS-LM model. Government fiscal policy. Central bank monetary policy. Labor market. Total supply in the economy. Inflation. AS-AD model. Open economy.					
<b>Recommended literature:</b> Olivier Blanchard: Macroeconomics					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 266					
A	B	C	D	E	FX
26,69	25,19	21,05	13,53	9,77	3,76
<b>Lecturers:</b> doc. RNDr. Ján Boďa, CSc.					
<b>Last change:</b> 09.03.2022					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/1-EFM-140/17		<b>Course title:</b> Economics (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 3 <b>per level/semester:</b> 39 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Mid-term test, final test. Scale of assessment (preliminary/final): 40/60					
<b>Learning outcomes:</b> Understanding the basics of how the country's economy as a whole works. The role of government and central bank.					
<b>Class syllabus:</b> Gross domestic product. Total demand in the economy. IS-LM model. Government fiscal policy. Central bank monetary policy. Labor market. Total supply in the economy. Inflation. AS-AD model. Open economy.					
<b>Recommended literature:</b> Olivier Blanchard: Macroeconomics					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 266					
A	B	C	D	E	FX
26,69	25,19	21,05	13,53	9,77	3,76
<b>Lecturers:</b> doc. RNDr. Ján Boďa, CSc.					
<b>Last change:</b> 09.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-233/13		<b>Course title:</b> English Conversation Course (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3., 5.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests, presentations, essays Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Continual improvement of all language skills focused on communication/speaking, listening comprehension and writing. The emphasis is on discourse, lexicology and morphology, word-bank broadening of communicational English as well as English for specific purposes appropriate for university students. This course is a follow up of the previously taught ESP course.					
<b>Class syllabus:</b> This course's focus is to broaden spoken/communicational English for students with B2/C1 level of English knowledge.					
<b>Recommended literature:</b> Appropriate study material is supplied based on the participants' level of English by the lecturer. (Sources- The Guardian, The Herald Morning Sun. The Nine News, The West Australian, BBC News and podcasts, CNN podcasts).					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 215					
A	B	C	D	E	FX
67,44	13,02	6,51	1,86	1,4	9,77
<b>Lecturers:</b> Mgr. Aneta Barnes					

<b>Last change:</b> 21.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-234/13		<b>Course title:</b> English Conversation Course (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4., 6.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests, oral presentations, essays Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Continual improvement of all language skills focused on communication/speaking, listening comprehension and writing. The emphasis is on discourse, lexicology and morphology, word-bank broadening of communicational/spoken English as well as English for specific purpose appropriate for university students. This course is a follow up of the Conversational English course 1.					
<b>Class syllabus:</b> This course's focus is to broaden spoken/communicational English for students with B2/C1 level of English knowledge( Upper-Intermediate/Lower Advanced).					
<b>Recommended literature:</b> Appropriate study material is supplied based on the participants'level of English by the lecturer. (Sources- The Guardian, The Herald Morning Sun. The Nine News, The West Australian, BBC News and podcasts, CNN podcasts).					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 146					
A	B	C	D	E	FX
77,4	12,33	3,42	1,37	0,0	5,48
<b>Lecturers:</b> Mgr. Aneta Barnes					

<b>Last change:</b> 21.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KJP/1-MXX-131/00	<b>Course title:</b> English Language (1)
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 1.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0	
<b>Learning outcomes:</b> The objective of the subject is to provide the students with experience and knowledge of technical English and thus make them ready to use English sources of information for later study and professional career.	
<b>Class syllabus:</b> 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.	
<b>Recommended literature:</b> Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková. The textbook has not been published. It is at students' disposal in an electronic format.	

<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 5840					
A	B	C	D	E	FX
30,6	23,8	18,29	12,47	7,45	7,4
<b>Lecturers:</b> Mgr. Eva Foltánová, Mgr. Ing. Jana Kočvarová, Mgr. Ľubomíra Kožehubová, Mgr. Alexandra Maďarová, PhDr. Alena Zemanová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-132/00		<b>Course title:</b> English Language (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> The objective of the subject is to provide the students with experience and knowledge of technical English and thus make them ready to use English sources of information for later study and professional career.					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b> Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format.					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1582					
A	B	C	D	E	FX
22,06	20,54	24,27	15,36	10,81	6,95



<b>Lecturers:</b> PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Mgr. Lubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.
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<b>Last change:</b> 20.06.2022
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<b>Approved by:</b>
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## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KJP/1-MXX-231/00	<b>Course title:</b> English Language (3)
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0	
<b>Learning outcomes:</b> The objective of the classes is to provide the students with knowledge of technical English in their field of study and experience with technical English sources sufficient to make the able to use technical language for their later study and professional purposes.	
<b>Class syllabus:</b> 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.	
<b>Recommended literature:</b> Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková. The textbook has not been published. It is at students' disposal in an electronic format.	
<b>Languages necessary to complete the course:</b>	

Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b>					
Total number of evaluated students: 1326					
A	B	C	D	E	FX
16,06	19,53	23,23	18,1	17,5	5,58
<b>Lecturers:</b> PhDr. Alena Zemanová, Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, Mgr. Lubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KJP/1-MXX-232/10	<b>Course title:</b> English Language (4)
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Examination: an examination consisting of a written and an oral part. Grades: A 93%, B 85%, C 77%, D 70%, E 65% Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/skuska-z-predmetu-anglicky-jazyk-4/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/skuska-z-predmetu-anglicky-jazyk-4/</a> Scale of assessment (preliminary/final): 0/100	
<b>Learning outcomes:</b> After completing the course, students will be able to work independently with professional literature in English	
<b>Class syllabus:</b> 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.	
<b>Recommended literature:</b> Anglický jazyk pre študentov FMFI UK : Kurz pre mierne pokročilých / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Aplikovaná matematika / Alexandra Maďarová, Ľubomíra Kožehubová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Matematika / kolektív autorov KJP. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Fyzika / Alena Zemanová. The textbook has not been published. It is at students' disposal in an electronic format. Anglický jazyk pre študentov FMFI UK : Informatika / Elena Klátiková. The textbook has not been published. It is at students' disposal in an electronic format.	
<b>Languages necessary to complete the course:</b> Slovak, English	

<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 3345					
A	B	C	D	E	FX
27,23	28,4	21,29	11,21	5,77	6,1
<b>Lecturers:</b> Mgr. Ing. Jana Kočvarová, Mgr. Alexandra Maďarová, PhDr. Alena Zemanová, Mgr. Lubomíra Kožehubová, Mgr. Eva Foltánová, Mgr. Aneta Barnes, Mgr. Simona Tomášková, PhD.					
<b>Last change:</b> 17.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAMŠ/1-EFM-570/00	<b>Course title:</b> Experimental Economics
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Continuous assessment: based on the evaluation of written protocols from the performed experiments Indicative assessment scale: A 100-90%, B 89-80%, C 79-70%, D 69-60%, E 59-50% Scale of assessment (preliminary/final): 100/0	
<b>Learning outcomes:</b> Students will be able to verify the principles on which economic theory is built. They can construct an experiment to support / refute new hypotheses in further research.	
<b>Class syllabus:</b> 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.)	
<b>Recommended literature:</b> The Handbook of experimental economics / Editors John H. Kagel, Alvin E. Roth. Princeton : Princeton University Press, 1995 Theodore Bergstrom - John H. Miller: Experiments with Economic Principles: Microeconomics, McGraw-Hill, 2000.	
<b>Languages necessary to complete the course:</b> Slovak, English	
<b>Notes:</b>	

<b>Past grade distribution</b>					
Total number of evaluated students: 100					
A	B	C	D	E	FX
98,0	0,0	2,0	0,0	0,0	0,0
<b>Lecturers:</b> doc. RNDr. Ján Pekár, PhD.					
<b>Last change:</b> 15.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAMŠ/1-MMN-331/10	<b>Course title:</b> Financial Mathematics
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Recommended prerequisites:</b> FMFI.KAMŠ/1-EFM-250/00 - Mathematical Analysis (4) or FMFI.KAMŠ/1-DAV-102/20 - Calculus (1)	
<b>Course requirements:</b> Evaluation during the semester: Project (40%), written test (40%), activity during exercises (20%) Written exam. Voluntary oral examination to improve the final evaluation. Informative evaluation scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> After completing the course, students will understand the basic principles of interest rate theory and bond investment management. They will also get acquainted with the principles of stock portfolio management. In the last part of the lecture, they will learn to price derivatives of the European and American type using binomial trees and will also get acquainted with Black-Scholes formulas for pricing put and call options.	
<b>Class syllabus:</b> Coupon and zero-coupon bonds, term structure of interest rates, bootstrap method, yield to maturity, forward rates, duration. Risk aversion, properties of utility functions, utility functions and mean-variance analysis, the problem of Markowitz, Capital Asset Pricing Model (CAMP). Binomial tree model, risk-neutral probabilities, risk-neutral pricing formula, Black-Scholes formula, pricing of american options.	
<b>Recommended literature:</b> Baxter M., Rennie A.: Financial Calculus Hull J.: Options, Futures and Other Derivatives Luenberger D.: Investment Science.	
<b>Languages necessary to complete the course:</b> Slovak, English	



<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 383					
A	B	C	D	E	FX
30,29	22,98	25,33	10,7	9,66	1,04
<b>Lecturers:</b> doc. Mgr. Igor Melicherčík, PhD., Mgr. Tatiana Jašurková					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1-MMN-216/14	<b>Course title:</b> Financial Planning - Personal and Family Finance
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 4., 6.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Weight of the mid-term / final evaluation: mid-term evaluation 20% / final evaluation 80% (seminar work 40% + oral exam 40%). Continuous assessment of the student is associated with his participation in classes. The final evaluation consists of elaboration of a seminar work on a topic that the student chooses at the beginning of the semester (and during the lessons he / she continuously acquires the knowledge he / she develops in the work) and an oral exam. Submission of the work is a necessary condition for obtaining the final evaluation, and the work must be evaluated min. 20% of the total rating. Grading: A (100-85), B (84-75), C (74-65), D (64-55), E (54-45), Fx (44-0). Scale of assessment (preliminary/final): 20 / 80	
<b>Learning outcomes:</b> The aim of the course is to acquaint students of applied mathematical disciplines with the functioning of financial institutions, the functioning of financial instruments, the behavior of people to financial products, the principles of asset management. It wants to bring closer the market to which students theoretically prepare during their university studies. It would help them to find a link between lexical knowledge and the market in which it will be applied. Students acquire knowledge in the field of financial literacy at the level necessary for future functioning in the professional and personal field.	
<b>Class syllabus:</b> The semester begins with a simulation program in which students go through model families with a period of 30 years of productive life and make standard financial decisions (that people encounter). They monitor the impact of their actions on financial assets. Subsequently, the semester goes through the topics of social security, investment, pension systems, credit segments. They apply the knowledge at the end of the semester again in simulations, where to see the differences in the final result based on the acquired knowledge.	
<b>Recommended literature:</b>	

teaching is based on the practice and professional experience of lecturers					
<b>Languages necessary to complete the course:</b> Slovak					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 69					
A	B	C	D	E	FX
69,57	15,94	4,35	1,45	4,35	4,35
<b>Lecturers:</b> Mgr. Andrea Kasanická Straková, RNDr. Kristína Rostás, PhD.					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-141/00		<b>Course title:</b> French Language (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> French language is taught at two levels: beginner and intermediate. Students opt for one of them depending on whether they wish to obtain the fundamentals of the language or wish to maintain and/or improve previous knowledge of French.					
<b>Recommended literature:</b> Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 435					
A	B	C	D	E	FX
45,75	20,0	18,85	8,74	2,3	4,37
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KJP/1-MXX-142/00		<b>Course title:</b> French Language (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject continues the program of French language (1) and provides courses of essential and intermediate French language.					
<b>Recommended literature:</b> Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 265					
A	B	C	D	E	FX
38,87	25,28	19,62	10,19	2,64	3,4
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-241/00		<b>Course title:</b> French Language (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject provides a course of intermediate French language, covering not only general, but also technical language.					
<b>Recommended literature:</b> Capelle Guy, Menand Robert: Le Nouveau taxi 1, Hachette FLE Paris, France 2009, ISBN 978-2-01-155548 - 9					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 104					
A	B	C	D	E	FX
39,42	27,88	21,15	6,73	0,96	3,85
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-242/00		<b>Course title:</b> French Language (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> The subject provides a course of intermediate French covering not only general, but also technical French language.					
<b>Recommended literature:</b> Menand Robert: Le Nouveau taxi 2, Hachette FLE, Paris, France 2009, ISBN 978-2-01-155551 - 9					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 74					
A	B	C	D	E	FX
41,89	32,43	17,57	2,7	1,35	4,05
<b>Lecturers:</b> Mgr. Ľubomíra Kožehubová					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/1-MMN-375/00		<b>Course title:</b> Game Theory			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2) and FMFI.KAMŠ/1-MAT-282/00 - Probability and Statistics (2)					
<b>Course requirements:</b> Continuous assessment: homework, experiment, continuous and final written test Approximate rating scale: A 100-90%, B 89-80%, C 79-70%, D 69-60%, E 59-50% Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> The student will be able to correctly analyse strategic situations while being able to make the right decisions.					
<b>Class syllabus:</b> Static games with full information. Dominance. Nash equilibrium. Illustration of Nash Equilibrium (Cournot's and Bertrand's Oligopoly Model, Electoral Games, Eradication War, Auctions). Nash equilibrium in mixed actions. Extensive games with perfect information. Associated game, Nash's equilibrium. Extensive games with imperfect information.					
<b>Recommended literature:</b> A Course in Game Theory / Martin J. Osborne, Ariel Rubinstein. Cambridge, Mass. : MIT Press, 1994 Game Theory: An Introduction, Steven Tadelis. Princeton University Press 2013					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 338					
A	B	C	D	E	FX
13,02	26,63	30,18	13,91	13,91	2,37
<b>Lecturers:</b> doc. RNDr. Ján Pekár, PhD.					



<b>Last change:</b> 15.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-151/00		<b>Course title:</b> German Language (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> To master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency )					
<b>Class syllabus:</b> German language is taught at three levels: beginner, intermediate and advanced. Students opt for one of them depending on whether they need to learn the fundamentals or maintain and/or improve their previous knowledge. This course's focus is to master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency )					
<b>Recommended literature:</b> Appropriate study material is supplied by teacher based on the participants'level of German proficiency.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 734					
A	B	C	D	E	FX
36,1	27,25	19,62	8,99	2,72	5,31
<b>Lecturers:</b> Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-152/00		<b>Course title:</b> German Language (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> To master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency )					
<b>Class syllabus:</b> German language is taught at two levels: beginner and intermediate. Students opt for one of them depending on whether they wish to obtain the fundamentals of the language or wish to maintain and/or improve previous knowledge of German. This course's focus is to to master the fundamentals of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency )					
<b>Recommended literature:</b> Appropriate study material is supplied by teacher based on the participants'level of German proficiency					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 480					
A	B	C	D	E	FX
36,04	20,21	20,83	13,13	3,33	6,46
<b>Lecturers:</b> Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-251/00		<b>Course title:</b> German Language (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Master the basics of general language and basic professional terminology of individual fields of study (depending on the advanced level of students)					
<b>Class syllabus:</b> The course is a follow-up to the German language (1,2). The subject provides a course of intermediate or advanced German language. This course's focus is to deepen the knowledge of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency).					
<b>Recommended literature:</b> Appropriate study material is supplied by teacher based on the participants' level of German proficiency.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 165					
A	B	C	D	E	FX
41,21	25,45	20,61	6,67	2,42	3,64
<b>Lecturers:</b> Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-252/00		<b>Course title:</b> German Language (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Master the basics of general language and basic professional terminology of individual fields of study (depending on the advanced level of students)					
<b>Class syllabus:</b> The course is a follow-up to the German language (1-3). It provides a course of intermediate and advanced German language. This course's focus is to deepen the knowledge of the common language and basic technical terms of particular fields of study (depending on the student's level of German proficiency).					
<b>Recommended literature:</b> Appropriate study material is supplied by teacher based on the participants' level of German proficiency.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 90					
A	B	C	D	E	FX
42,22	24,44	12,22	12,22	3,33	5,56
<b>Lecturers:</b> Mgr. Alexandra Maďarová, Mgr. Simona Tomášková, PhD.					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/2-MMN-139/19		<b>Course title:</b> Guide on Investments in Financial Markets in Practice			
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 36					
A	B	C	D	E	FX
33,33	38,89	22,22	5,56	0,0	0,0
<b>Lecturers:</b> RNDr. Miron Zelina, CSc.					
<b>Last change:</b> 03.05.2020					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAMŠ/1-MMN-370/00	<b>Course title:</b> Insurance Mathematics
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b> FMFI.KAMŠ/1-MAT-282/00 - Probability and Statistics (2)	
<b>Course requirements:</b> The course assessment consists of two tests, which are usually written during the semester, with the same evaluation weight (50% and 50%, respectively). To successfully complete the course, it is necessary to obtain at least half of the points on the first test, and at least half of the points on the second test. Grade thresholds: A: 100.00% – 90.00%; B: 89.99% – 80.00%; C: 79.99% – 70.00%; D: 69.99% – 60.00%; E: 59.99% – 50.00%; Fx: 49.99% – 0.00%. Scale of assessment (preliminary/final): Practical work during semester 100% / final exam 0%.	
<b>Learning outcomes:</b> After completing the course student receives an overview of the basics of insurance business, classical life insurance products, net and gross premium calculation and methods of reserving. Student will be able to solve basic problems in life insurance mathematics.	
<b>Class syllabus:</b> Introduction to insurance business. Life tables, biometric (mortality) risk. Life insurance - deterministic approach, equivalence principle, assets and liabilities of the insurance company. Basic and some other types of life insurance: pure endowment, term insurance, endowment, insurance with a fixed-period payout. Whole life insurance, temporary insurance and deferred insurance. Life annuities: present value of life annuities, annuity-due and immediate annuity, linearly increasing and linearly decreasing annuities, temporary and whole life annuities. Single premium and periodic premiums. Net premiums and gross premiums. The stochastic model of life insurance, future lifetime, expected future lifetime, mortality laws. Continuous methods of actuarial mathematics, insurances payable at the moment of death, continuously payable life annuities. Net premium reserves, expense-loaded premium reserves, gross premium, adequate reserves, Zillmer reserve, technical provisions, calculation of premium reserves in the case of single premium and periodic premiums.	
<b>Recommended literature:</b> Life Insurance Mathematics / Hans U. Gerber. Heidelberg : Springer, 1997, ISBN 978-3-662-03460-6;	

Modely v životnom a neživotnom poistení / Rastislav Potocký. Bratislava : STATIS, 2012, ISBN 978-80-85659-71-9;  
study materials of the lecturer.

**Languages necessary to complete the course:**

Slovak, English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 492

A	B	C	D	E	FX
32,93	19,72	21,14	15,65	8,54	2,03

**Lecturers:** Mgr. Gábor Szűcs, PhD.

**Last change:** 16.06.2022

**Approved by:**



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAI/1-MXX-491/15		<b>Course title:</b> Integrated Education of People with Disabilities			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 55					
A	B	C	D	E	FX
78,18	18,18	1,82	0,0	0,0	1,82
<b>Lecturers:</b> PaedDr. Elena Mendelová, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KEF/1-MMN-270/00	<b>Course title:</b> Introduction to Financial Management
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Continuous assessment: active participation in classes, continuous test, condition for the exam is min. 70% of the interim evaluation (i.e. 28 points) Exam: written exam - theoretical and computational part Scale of assessment (preliminary/final): 40/60	
<b>Learning outcomes:</b> To provide students with basic knowledge of the financial management of business entities, asset valuation and the basic ability to independently decide on the possibility of investing based on preferences and market conditions.	
<b>Class syllabus:</b> Introduction to the financial management: financial markets, investments, products, instruments, environment, value management of a business entity. Financial statement analysis: ratios, cash flow analysis, comparative market analysis and trend analysis, critical financial statement analysis, bankruptcy and creditworthiness models, economic value added. Risk and return: financial assets and their risks, required/expected return, measurement of isolated risk, portfolio risk, diversification and volatility of investment portfolios, security market line (SML), effective set, indifference curves, optimal portfolio, capital asset pricing model (CAPM). Time value of money: future value, present value, annuity, perpetuity, effective annual interest rate (EAR), discount. Valuation models: general valuation model, types and basic properties of securities, present value of the bond; yield, interest rate and reinvestment risk of bonds; valuation of preference and ordinary shares, discounted dividend model. Weighted average cost of capital: price of individual components of capital, weighted average cost of capital (WACC), optimal capital budget. Evaluation of capital investments: net present value of the project (NPV), internal rate of return of the project (IRR), profitability index of the project, project financing.	

Evaluation based on ESG factors: sustainable investments, green investments, evaluation parameters of business entities.					
<b>Recommended literature:</b> Financial management. Theory and practice: Eugene F. Brigham, Michael C. Ehrhardt. Cengage Learning, 16th edition, 2019 Principles of Corporate Finance: Richard A. Brealey, Stewart C. Myers, Franklin Allen. McGraw Hill, 13th edition, 2019 Routledge Handbook of Social and Sustainable Finance: ed. Othmar M. Lehner. Routledge, 2018					
<b>Languages necessary to complete the course:</b> English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 522					
A	B	C	D	E	FX
23,75	30,08	21,46	13,41	8,24	3,07
<b>Lecturers:</b> doc. PhDr. Daniela Majerčáková, PhD., MBA					
<b>Last change:</b> 15.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KMn/1- MMN-130/00	<b>Course title:</b> Introduction to Management I
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 1.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Essay (max. 10%), presentation of the essay (max. 10%), midterm test (max. 15%), active participation in solving case studies, final test (max. 25%), oral exam (max. 40%). Scale of assessment (preliminary/final): 60/40	
<b>Learning outcomes:</b> After completing the course the student obtains a comprehensive knowledge of selected areas of management theory and become familiar with the basic procedures for identifying and solving problems in management practice. Course content also focuses on developing managerial skills and abilities of listeners. Students through an individual elaboration of an essay, its presentation followed by discussion and case studies enhance the correct use of terminology of management as a science discipline, expanding their knowledge and improving the skills necessary for further study and management practice.	
<b>Class syllabus:</b> <ol style="list-style-type: none"> <li>1. Managers and management – management as a process, science, and profession.</li> <li>2. Management theory development.</li> <li>3. Organizational culture.</li> <li>4. Organizational environment.</li> <li>5. Management in a global environment.</li> <li>6. Social responsibility and managerial ethics.</li> <li>7. Managerial decision-making.</li> <li>8. Foundations of planning.</li> <li>9. Strategic management.</li> <li>10. Forecasting.</li> </ol>	
<b>Recommended literature:</b> [1] WOJČÁK, E. - RUDY, J. - BAJZÍKOVÁ, Ľ. a kol. Manažment, UK Bratislava, 2017. [2] PIŠKANIN A. – RUDY J. a kol.: Manažment klasické teórie a moderné trendy, UK Bratislava, 2010.	

- [3] SEDLÁK M.: Manažment. Iura Edition, Bratislava 2009.
- [4] ROBBINS, P. R. - COULTER, M.: Management, Harlow : Pearson education limited, 2018, 14th edition. p 751. ISBN 978-1-292-21583-9
- [5] ROBBINS, P. R. - COULTER, M. with contributions by MARTOCCHIO, J. J., KONG, L. K.: Management, Harlow : Pearson education limited, 2016, 13th edition. p. 717 . ISBN 978-1-292-09020-7
- [6] Journal of Human Resource Management. ISSN 2453 – 7683-[online] [www.jhrm.eu](http://www.jhrm.eu)

**Languages necessary to complete the course:**

Slovak and English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 621

A	B	C	D	E	FX
23,83	21,1	18,36	13,53	18,84	4,35

**Lecturers:** Mgr. Michaela Poláková, PhD., doc. PhDr. Lukáš Copuš, PhD., doc. Mgr. Jana Fratričová, PhD., Mgr. Juliet Horváthová Suleimanová, PhD., Mgr. Monika Vojteková

**Last change:** 07.05.2019

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KMn/1-MMN-131/00	<b>Course title:</b> Introduction to Management II
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Oral exam (max. 100%). Scale of assessment (preliminary/final): 0/100	
<b>Learning outcomes:</b> The result of the course is to provide basic knowledge of management, while students in lectures acquainted with the main approaches and principles of selected areas of management.	
<b>Class syllabus:</b> <ol style="list-style-type: none"> <li>1. Basics of organizing.</li> <li>2. Job design.</li> <li>3. Human resource management.</li> <li>4. Individual and group behavior.</li> <li>5. Motivation of employees.</li> <li>6. Leadership theories.</li> <li>7. Communication and interpersonal skills.</li> <li>8. Controlling as a function of management.</li> <li>9. Change management.</li> <li>10. Self management and time management.</li> </ol>	
<b>Recommended literature:</b> [1] WOJČÁK, E. - RUDY, J. - BAJZÍKOVÁ, Ľ. a kol. Manažment, UK Bratislava, 2017. [2] PIŠKANIN A. – RUDY J. a kol.: Manažment klasické teórie a moderné trendy, UK Bratislava, 2010. [3] SEDLÁK M.: Manažment. Iura Edition, Bratislava 2009. [4] ROBBINS, P. R. - COULTER, M.: Management, Harlow : Pearson education limited, 2018, 14th edition. p 751. ISBN 978-1-292-21583-9 [5] ROBBINS, P. R. - COULTER, M. with contributions by MARTOCCHIO, J. J., KONG, L. K.: Management, Harlow : Pearson education limited, 2016, 13th edition. p. 717 . ISBN 978-1-292-09020-7	

[6] Journal of Human Resource Management. ISSN 2453 – 7683-[online] www.jhrm.eu					
<b>Languages necessary to complete the course:</b> English language					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 433					
A	B	C	D	E	FX
29,33	26,79	14,55	11,78	13,39	4,16
<b>Lecturers:</b> doc. PhDr. Lukáš Copuš, PhD., Mgr. Michaela Poláková, PhD., Mgr. Matúš Rybanský, doc. Ing. Mgr. Ľubomíra Strážovská, PhD.					
<b>Last change:</b> 12.02.2020					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KMn/1-MMN-231/10	<b>Course title:</b> Introduction to Management Seminar
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Essay (15%), presentation of the essay (15%), Test (70%). Scale of assessment (preliminary/final): 100/0	
<b>Learning outcomes:</b> After completing the course the student obtains a comprehensive knowledge of selected areas of management theory and become familiar with the basic procedures for identifying and solving problems in management practice. Course content also focuses on developing managerial skills and abilities of listeners. Students through an individual elaboration of an essay, its presentation followed by discussion and case studies enhance the correct use of terminology of management as a science discipline, expanding their knowledge and improving the skills necessary for further study and management practice.	
<b>Class syllabus:</b> <ol style="list-style-type: none"> <li>1. Basics of organizing.</li> <li>2. Job design.</li> <li>3. Human resource management.</li> <li>4. Individual and group behavior.</li> <li>5. Motivation of employees.</li> <li>6. Leadership theories.</li> <li>7. Communication and interpersonal skills.</li> <li>8. Controlling as a function of management.</li> <li>9. Change management.</li> <li>10. Self management and time management.</li> </ol>	
<b>Recommended literature:</b> [1] ROBBINS, P. R. – COULTER, M. 2016. Management. 13th Edition. Harlow : Pearson Education Limited, 2016. [2] ROBBINS, P. R. – COULTER, M. 2005. Management. 11th Edition. New Jersey : Pearson Prentice Hall, 2005.	



[3] RUDY, J. 1998. Introduction to Management. Selected Readings. Bratislava : Comenius University, 1998.  
JOURNALS:  
Journal of Human Resource Management, UK Bratislava.

**Languages necessary to complete the course:**

Slovak and English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 103

A	B	C	D	E	FX
39,81	33,98	10,68	5,83	4,85	4,85

**Lecturers:** doc. Mgr. Emil Wojčák, PhD., Mgr. Matúš Rybanský, doc. PhDr. Lukáš Copuš, PhD., doc. Ing. Mgr. Ľubomíra Strážovská, PhD.

**Last change:** 21.03.2020

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KMn/1-MMN-240/00	<b>Course title:</b> Introduction to Personnel Management
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Assignments during the semester: Case study (team assignment) - 15% Midterm test - 15% Final test - 15% In-class activities - 15% Oral exam in the exam period: 40% Scale of assessment (preliminary/final): 60/40	
<b>Learning outcomes:</b> The aim of this course is to familiarize students with the major functions of HR management (e.g. job analysis, recruitment and selection, training and development, career management, compensation, etc.) and their relations to other fields of management as well as to explore the link between business strategy and individual HR functions. Students develop a basic understanding of the implementation of individual HR functions from both employer and employee points of view.	
<b>Class syllabus:</b> The role of HR management in the organization. HR planning and job analysis. Employee recruitment and selection. Performance management and performance appraisal. Employee training, development and career. Employee compensation and motivation. Employee and labor relations. International HRM.	
<b>Recommended literature:</b> Bajžíková, Ľ. et al. 2013. Manažment ľudských zdrojov. Bratislava: Univerzita Komenského v Bratislave.	

Carbery, R., Cross, C. 2013. Human Resource Management – A Concise Introduction. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan.

Milkovich T., Boudreau J. 1996. Human Resource Management. Boston: Richard Irwin, 8th edition.

Koubek J. 2007. Řízení lidských zdrojů. Praha: Management press.

Journal of Human Resource Management. Bratislava: Comenius University, Faculty of Management. ISSN 2453-7683.

Selected case studies.

**Languages necessary to complete the course:**

Slovak, English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 514

A	B	C	D	E	FX
34,63	30,35	17,9	9,73	7,39	0,0

**Lecturers:** prof. Ing. Ľubica Bajžíková, PhD., Mgr. Zuzana Kirchmayer, PhD., doc. Mgr. Jana Fratričová, PhD., Mgr. Juliet Horváthová Suleimanová, PhD.

**Last change:** 12.02.2018

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KMn/1-MMN-240/00	<b>Course title:</b> Introduction to Personnel Management
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Assignments during the semester: Case study (team assignment) - 15% Midterm test - 15% Final test - 15% In-class activities - 15% Oral exam in the exam period: 40% Scale of assessment (preliminary/final): 60/40	
<b>Learning outcomes:</b> The aim of this course is to familiarize students with the major functions of HR management (e.g. job analysis, recruitment and selection, training and development, career management, compensation, etc.) and their relations to other fields of management as well as to explore the link between business strategy and individual HR functions. Students develop a basic understanding of the implementation of individual HR functions from both employer and employee points of view.	
<b>Class syllabus:</b> The role of HR management in the organization. HR planning and job analysis. Employee recruitment and selection. Performance management and performance appraisal. Employee training, development and career. Employee compensation and motivation. Employee and labor relations. International HRM.	
<b>Recommended literature:</b> Bajžíková, Ľ. et al. 2013. Manažment ľudských zdrojov. Bratislava: Univerzita Komenského v Bratislave.	

Carbery, R., Cross, C. 2013. Human Resource Management – A Concise Introduction. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan.  
Milkovich T., Boudreau J. 1996. Human Resource Management. Boston: Richard Irwin, 8th edition.  
Koubek J. 2007. Řízení lidských zdrojů. Praha: Management press.  
Journal of Human Resource Management. Bratislava: Comenius University, Faculty of Management. ISSN 2453-7683.  
Selected case studies.

**Languages necessary to complete the course:**

Slovak, English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 514

A	B	C	D	E	FX
34,63	30,35	17,9	9,73	7,39	0,0

**Lecturers:** prof. Ing. Ľubica Bajžíková, PhD., Mgr. Zuzana Kirchmayer, PhD., doc. Mgr. Jana Fratričová, PhD., Mgr. Juliet Horváthová Suleimanová, PhD.

**Last change:** 12.02.2018

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI-FM.KIS/1-MMN-355/18		<b>Course title:</b> Labor Law			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> per week: 2 per level/semester: 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 3					
A	B	C	D	E	FX
0,0	66,67	33,33	0,0	0,0	0,0
<b>Lecturers:</b> doc. JUDr. Ján Matlák, CSc.					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAI/1-AIN-406/15		<b>Course title:</b> Language and Cognition			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 2., 4., 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 111					
A	B	C	D	E	FX
31,53	25,23	17,12	12,61	6,31	7,21
<b>Lecturers:</b> doc. PhDr. Ján Rybár, PhD.					
<b>Last change:</b> 12.01.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAG/1-MMN-120/00	<b>Course title:</b> Linear Algebra and Geometry (1)
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 26 / 13 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 4	
<b>Recommended semester:</b> 1.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Ongoing evaluation during the semester: homeworks, midterm Final exam: written and oral Approximative grade scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> Presentation of the basic concepts of algebraic methods with focus on their use in other areas of mathematics as well as understanding the use of mathematical methods in economy, finances and management.	
<b>Class syllabus:</b> The basic notions (integers, sets, mappings, binar relations, groups, rings, fields). Vector spaces, subspaces. Linear dependence, basis and dimension. Linear sums of the subspaces. Linear mappings, matrices. Regular mappings, inverse matrices. Systems of linear equations, determinants. Euclidean vector spaces.	
<b>Recommended literature:</b> J. Korbaš: Lineárna algebra a geometria I. Univerzita Komenského, Bratislava 2003. T. Katriňák, M. Gavalec, E. Gedeonová, J. Smítal: Algebra a teoretická aritmetika 1. Univerzita Komenského, Bratislava 1999. G. Birkhoff, S. MacLane: A Survey of Modern Algebra (Macmillan, 4th Edition 1977), translation into Slovak: Prehľad modernej algebry. Alfa, Bratislava 1979.	
<b>Languages necessary to complete the course:</b> Slovak, English	
<b>Notes:</b>	



<b>Past grade distribution</b>					
Total number of evaluated students: 609					
A	B	C	D	E	FX
20,69	18,88	21,18	17,9	18,06	3,28
<b>Lecturers:</b> doc. RNDr. Róbert Jajcay, DrSc., Mgr. Dominik Holý, Leonard Chidiebere Eze, Ajay Raj					
<b>Last change:</b> 14.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAG/1-MMN-160/00	<b>Course title:</b> Linear Algebra and Geometry (2)
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 26 / 13 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 4	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b> FMFI.KAG/1-MMN-120/00 - Linear Algebra and Geometry (1)	
<b>Course requirements:</b> Ongoing evaluation during the semester: homeworks, quizzes, midterms Final exam: written and oral Approximate grade scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> To build upon the previously introduced concepts of the theory of vector spaces (LaG1) - groups of linear transformations and the corresponding matrix theory. Master the basics of the theory of algebraic structures - groups, rings, fields, ...	
<b>Class syllabus:</b> Groups of linear transformations of a vector space. Similar matrices (eigenvalues, eigenvectors, characteristic and minimal polynomial). Bilinear and quadratic forms (spectral decomposition of the symmetric matrix). The groups (subgroups, cyclic groups). The finite groups (Lagrange theorem). The homomorphism of the groups (quotient group). The ring, the integral domain, the field. The polynomial ring (selected facts about polynomials).	
<b>Recommended literature:</b> J. Korbas: Linearna algebra a geometria I J. Smital, E. Gedeonova, S. Znam: Uvod do linearnej algebry J. Smii tal, E. Gedeonova: Linearna Algebra P. Zlatos: Linearna algebra a geometria Jim Hefferon: Linear Algebra Robert A. Beezer: A First Course in Linear Algebra Steven J. Leon: Linear Algebra with Applications, 9th Edition, Pearson Education	
<b>Languages necessary to complete the course:</b> Slovak, English	
<b>Notes:</b>	

<b>Past grade distribution</b>					
Total number of evaluated students: 574					
A	B	C	D	E	FX
25,96	22,47	21,25	14,63	13,24	2,44
<b>Lecturers:</b> doc. RNDr. Róbert Jajcay, DrSc., Mgr. Dominik Holý					
<b>Last change:</b> 14.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAG/1-MMN-560/00		<b>Course title:</b> Linear Algebra and Geometry (3)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 26 / 13 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Euclidian (point-vector) space En. Linear varieties in En. The system of coordinates (the equations of a variety). The common position of two varieties, metric connections (perpendicularity, distance and angle of two varieties). Bilinear and quadratic forms (Lagrange method, canonical form). Sylvester's laws. The application to theory of the quadric in euclidian plane.					
<b>Recommended literature:</b> J. Korbaš: Lineárna algebra a geometria I. Univerzita Komenského, Bratislava 2003. T. Katriňák, M. Gavalec, E. Gedeonová, J. Smítal: Algebra a teoretická aritmetika 1. Univerzita Komenského, Bratislava 1999. G. Birkhoff, S. MacLane: A Survey of Modern Algebra (Macmillan, 4th Edition 1977), translation into Slovak: Prehľad modernej algebry. Alfa, Bratislava 1979.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 282					
A	B	C	D	E	FX
39,01	10,99	13,83	15,25	20,21	0,71
<b>Lecturers:</b> RNDr. Jana Chalmovianská, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1-MMN-255/00	<b>Course title:</b> Linear Programming
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I., II.	
<b>Prerequisites:</b> FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2) or FMFI.KAG/1-INF-156/10 - Algebra (2)	
<b>Course requirements:</b> Continuous assessment: exercises: 30%, project: 20%, Exam: 50%. The student must obtain at least half of the points for the exercises in order to pass the final written exam. Grading: A (100-91), B (90-81), C (80-71), D (70-61), E (60-51), Fx (50-0). Scale of assessment (preliminary/final): 50% / 50%	
<b>Learning outcomes:</b> Students master the basics of linear programming (simple models of real problems, relevant geometry, duality theory and some of the simplex methods, the idea of interior point methods). At the same time, they will gain an overview of possible applications of linear programming in other scientific fields, or in practice.	
<b>Class syllabus:</b> Geometric approach to solving linear programming problems. Practical problems formulation in the form of LP. Fundamentals of convex analysis (convex set, polyhedrons, extreme points, separation theorems, theorems of alternatives). Basic solutions and connection with extreme points. Simplex method (basic idea, two-phase and dual simplex method). Duality theory (duality and complementarity theorems) and its applications and economic interpretation. Idea of interior point methods for linear programming, central path. Modern applications of linear programming.	
<b>Recommended literature:</b> Mária Trnovská: Lineárne programovanie, online text. Lineárne programovanie / Ján Plesník, Jitka Dupačová, Milan Vlach. Bratislava : Alfa, 1990 Robert J. Vanderbei: Linear programming: Foundations and extensions, Kluwer Academic Publishers, 2000.	
<b>Languages necessary to complete the course:</b> Slovak, English	

<b>Notes:</b>					
<b>Past grade distribution</b>					
Total number of evaluated students: 526					
A	B	C	D	E	FX
13,88	17,68	19,58	20,72	22,05	6,08
<b>Lecturers:</b> doc. RNDr. Mária Trnovská, PhD., Mgr. Andrej Badík					
<b>Last change:</b> 16.06.2022					
<b>Approved by:</b>					

## STATE EXAM DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1- MMN-972/15	<b>Course title:</b> Management and Finance
<b>Number of credits:</b> 2	
<b>Educational level:</b> I.	
<b>State exam syllabus:</b>	
<b>Last change:</b> 05.11.2015	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KMk/1-MMN-340/00	<b>Course title:</b> Marketing
<b>Educational activities:</b> <b>Type of activities:</b> lecture / seminar <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> 40 % interim evaluation: - active attendance on seminars (in case of unjustified absence or unpreparedness on seminar loss of 10%) - interim evaluation (2 written intermediate tests 10%) - semester project – application of theoretical knowledge on selected organization – 30% 60 % final evaluation: - exam – written test (corrective dates – oral exam) The overall student rating consists of the sum of the percentages for active attendance on seminars the semester project, and of the percentage obtained from the exam. Exam is written. System of interim evaluation is set on the beginning of semester. Scale of assessment (preliminary/final): 40/60	
<b>Learning outcomes:</b> The aim of the course is to acquire the basic knowledge from the various areas of marketing theory. The subject emphasizes the importance and benefits of basic marketing postulates in terms of the interconnection of the organization and its customers. Emphasis is placed on acquiring skills in marketing decision-making and performing individual marketing activities of the organization, especially in strategic and marketing planning, market segmentation and market positioning, marketing research, analysis of marketing environment and consumer and organizational purchasing behavior in designing of marketing mix and in exploitation of international marketing. The subject also emphasizes the impact of the online environment and the selected specifics of digital marketing. In addition to gaining theoretical knowledge, the subject is also aimed at stimulating the students' ability to apply the marketing concept in economic practice.	
<b>Class syllabus:</b> 1. Position and importance of marketing in company development. 2. The nature of the marketing concept. 3. Strategic planning and marketing management. 4. Importance of marketing planning.	



5. Marketing environment.
6. Marketing information system and marketing research.
7. Shopping behavior of consumers in organizations.
8. Market segmentation, target group selection and creation of market position.
9. Marketing mix and advanced marketing mix.
10. Product as a marketing mix tool.
11. Pricing and pricing strategy of the company.
12. Distribution channels and physical distribution.
13. Marketing communication and marketing communication mix.
14. International marketing.

**Recommended literature:**

- [1] BARTÁKOVÁ, G. – CIBÁKOVÁ, V. – ŠTARCHOŇ, P.: Základy marketingu. 2. rozšířené vydání. Bratislava: 2007. ISBN 978-80-969834-4-5
- [2] KOTLER, P. – ARMSTRONG, G.: Marketing. Praha: Grada 2007. ISBN 80-247-0513-3
- [3] KOTLER, P. – WONG, V. – SAUNDERS, J. – ARMSTRONG, G.: Moderní marketing. Praha: Grada Publishing 2007. ISBN 8024715457
- [4] BAINES, P. – FILL, C. – PAGE, K.: Marketing. Oxford: Oxford University Press 2011. ISBN 978-0-19-957961-7
- [5] BLYTHE, J.: Principles and Practice of Marketing. 2nd Editon. Hampshire: Cengage Learning EMEA 2009. ISBN 978-1-4080-114-78
- [6] ARMSTRONG, G. – KOTLER, P.: Marketing: An Introduction. 8th Editon. Upper Saddle River: Pearson Education, Inc. 2007. ISBN 0-13-186591-9 – vybrané kapitoly.
- [7] BRASSINGTON, F. – PETTITT, S.: Principles of Marketing. Harlow: Prentice Hall 2006. ISBN 0-273-69559-2
- [8] Marketing Science and Inspirations, Marketing&Media.
- With regard to new and available resources, supplementary literature will be updated on a continuous basis.

**Languages necessary to complete the course:**

Slovak, English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 505

A	B	C	D	E	FX
29,31	28,91	20,4	13,07	7,92	0,4

**Lecturers:** prof. Mgr. Peter Štarchoň, PhD.

**Last change:** 08.03.2018

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KMk/1-MMN-340/00	<b>Course title:</b> Marketing
<b>Educational activities:</b> <b>Type of activities:</b> lecture / seminar <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> 40 % interim evaluation: - active attendance on seminars (in case of unjustified absence or unpreparedness on seminar loss of 10%) - interim evaluation (2 written intermediate tests 10%) - semester project – application of theoretical knowledge on selected organization – 30% 60 % final evaluation: - exam – written test (corrective dates – oral exam) The overall student rating consists of the sum of the percentages for active attendance on seminars the semester project, and of the percentage obtained from the exam. Exam is written. System of interim evaluation is set on the beginning of semester. Scale of assessment (preliminary/final): 40/60	
<b>Learning outcomes:</b> The aim of the course is to acquire the basic knowledge from the various areas of marketing theory. The subject emphasizes the importance and benefits of basic marketing postulates in terms of the interconnection of the organization and its customers. Emphasis is placed on acquiring skills in marketing decision-making and performing individual marketing activities of the organization, especially in strategic and marketing planning, market segmentation and market positioning, marketing research, analysis of marketing environment and consumer and organizational purchasing behavior in designing of marketing mix and in exploitation of international marketing. The subject also emphasizes the impact of the online environment and the selected specifics of digital marketing. In addition to gaining theoretical knowledge, the subject is also aimed at stimulating the students' ability to apply the marketing concept in economic practice.	
<b>Class syllabus:</b> 1. Position and importance of marketing in company development. 2. The nature of the marketing concept. 3. Strategic planning and marketing management. 4. Importance of marketing planning.	

5. Marketing environment.
6. Marketing information system and marketing research.
7. Shopping behavior of consumers in organizations.
8. Market segmentation, target group selection and creation of market position.
9. Marketing mix and advanced marketing mix.
10. Product as a marketing mix tool.
11. Pricing and pricing strategy of the company.
12. Distribution channels and physical distribution.
13. Marketing communication and marketing communication mix.
14. International marketing.

**Recommended literature:**

- [1] BARTÁKOVÁ, G. – CIBÁKOVÁ, V. – ŠTARCHOŇ, P.: Základy marketingu. 2. rozšírené vydanie. Bratislava: 2007. ISBN 978-80-969834-4-5
- [2] KOTLER, P. – ARMSTRONG, G.: Marketing. Praha: Grada 2007. ISBN 80-247-0513-3
- [3] KOTLER, P. – WONG, V. – SAUNDERS, J. – ARMSTRONG, G.: Moderní marketing. Praha: Grada Publishing 2007. ISBN 8024715457
- [4] BAINES, P. – FILL, C. – PAGE, K.: Marketing. Oxford: Oxford University Press 2011. ISBN 978-0-19-957961-7
- [5] BLYTHE, J.: Principles and Practice of Marketing. 2nd Editon. Hampshire: Cengage Learning EMEA 2009. ISBN 978-1-4080-114-78
- [6] ARMSTRONG, G. – KOTLER, P.: Marketing: An Introduction. 8th Editon. Upper Saddle River: Pearson Education, Inc. 2007. ISBN 0-13-186591-9 – vybrané kapitoly.
- [7] BRASSINGTON, F. – PETTITT, S.: Principles of Marketing. Harlow: Prentice Hall 2006. ISBN 0-273-69559-2
- [8] Marketing Science and Inspirations, Marketing&Media.
- With regard to new and available resources, supplementary literature will be updated on a continuous basis.

**Languages necessary to complete the course:**

Slovak, English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 505

A	B	C	D	E	FX
29,31	28,91	20,4	13,07	7,92	0,4

**Lecturers:** prof. Mgr. Peter Štarchoň, PhD.

**Last change:** 08.03.2018

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1-MMN-111/15	<b>Course title:</b> Mathematical Analysis (1)
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 4 / 2 <b>per level/semester:</b> 52 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 7	
<b>Recommended semester:</b> 1.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Antirequisites:</b> FMFI.KMANM/1-MMN-111/10	
<b>Course requirements:</b> For the semester, the student can get 15 points for exercises, 40 points for written exams, the final written exam has a weight of 30 points, the final oral exam weighs 15 points. The student must obtain at least 45 points from the exercises, written exams and the final written exam, at least 15 points from the final written exam and at least 5 points from the final oral exam. Grading: A (91-100 points), B (81-90 points), C (71-80 points), D (61-70 points), E (51-60 points), Fx (0-50 points). Weight of the ongoing / final assessment: ongoing assessment 55% (15% exercise + 40% written exams) / 45% (30% final written exam, 15% final oral exam). Scale of assessment (preliminary/final): 55/45	
<b>Learning outcomes:</b> After completing the course, the student can use the apparatus of differential calculus of functions of one real variable in solving appropriate problems of theoretical and practical focus.	
<b>Class syllabus:</b> Real numbers, functions of real variables. Limit of the function, basic theorems on limits. Compact sets. Continuity of a function in a point and on a set, basic properties of continuous functions on intervals and compact sets. Derivative and general rules for differentiation. Repeated differentiation. Mean value theorems. Applications of the derivative. L'Hospital's rule. Taylor's polynomials.	
<b>Recommended literature:</b> 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	
<b>Languages necessary to complete the course:</b>	

Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b>					
Total number of evaluated students: 211					
A	B	C	D	E	FX
3,79	14,69	19,43	32,23	20,85	9,0
<b>Lecturers:</b> doc. RNDr. Zbyněk Kubáček, CSc., Mgr. Emília Miřková, PhD.					
<b>Last change:</b> 24.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1-MMN-150/15	<b>Course title:</b> Mathematical Analysis (2)
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 4 / 2 <b>per level/semester:</b> 52 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 7	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b> FMFI.KMANM/1-MMN-111/15 - Mathematical Analysis (1)	
<b>Antirequisites:</b> FMFI.KMANM/1-MMN-150/00	
<b>Course requirements:</b> For the semester, the student can get 15 points for exercises, 40 points for written exams, the final written exam has a weight of 30 points, the final oral exam weighs 15 points. The student must obtain at least 45 points from the exercises, written exams and the final written exam, at least 15 points from the final written exam and at least 5 points from the final oral exam. Grading: A (91-100 points), B (81-90 points), C (71-80 points), D (61-70 points), E (51-60 points), Fx (0-50 points). Weight of the ongoing / final assessment: ongoing assessment 55% (15% exercise + 40% written exams) / 45% (30% final written exam, 15% final oral exam). Scale of assessment (preliminary/final): 55/45	
<b>Learning outcomes:</b> After completing the course, students will be able to use the apparatus of integral calculus of functions of one real variable, series and series of functions to solve appropriate computational and theoretical problems.	
<b>Class syllabus:</b> Antiderivatives and indefinite integrals and techniques of integration. The definite integral and its properties. Integral as a limit of integral sums. Derivatives with variable endpoints. The fundamental theorem. Mean value theorems. Applications of the integral. Series of positive terms. Absolutely and conditionally convergent series. Series of functions. Pointwise and uniform convergence. Power series. Taylor series.	
<b>Recommended literature:</b> 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, textbook of FMFI UK	

<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 185					
A	B	C	D	E	FX
12,97	13,51	21,62	30,81	20,54	0,54
<b>Lecturers:</b> doc. RNDr. Zbyněk Kubáček, CSc., Mgr. Michaela Vargová, PhD.					
<b>Last change:</b> 24.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1-MMN-210/15	<b>Course title:</b> Mathematical Analysis (3)
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 3 / 2 <b>per level/semester:</b> 39 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 6	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I., II.	
<b>Prerequisites:</b> FMFI.KMANM/1-MMN-150/15 - Mathematical Analysis (2) or FMFI.KMANM/1-INF-150/00 - Mathematical Analysis (2)	
<b>Antirequisites:</b> FMFI.KMANM/1-MMN-210/00	
<b>Course requirements:</b> For the semester, the student can get 20 points for exercises, 30 points for written exams, the final written exam has a weight of 30 points, the final oral exam weighs 20 points. The student must obtain at least 40 points from the exercises, written exams and the final written exam, at least 15 points from the final written exam and at least 10 points from the final oral exam. Grading: A (91-100 points), B (81-90 points), C (71-80 points), D (61-70 points), E (51-60 points), Fx (0-50 points). Weight of the ongoing / final assessment: ongoing assessment 50% (20% exercise + 30% written exams) / 50% (30% final written exam, 20% final oral exam). Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> Absolvent of the subject has basic knowledge of metric spaces and differential calculus of scalar and vector functions of several variables and is capable of applying it for solving particular tasks in differential calculus of functions of several variables.	
<b>Class syllabus:</b> 1. Metric spaces n-dimensional Euclidean space $R_n$ , convergence and Cauchy sequence in $R_n$ , metric spaces, convergence in a metric space, complete metric space, normed space, Banach space, Banach fixed point theorem, topology of metric spaces, compact and convex sets, convex functions 2. Limit and continuity limit and continuity in metric spaces, continuous vector functions, continuity and compactness 3. Differential calculus of functions of several variables partial derivatives, gradient, total differential and differentiability, derivative of a compound function, directional derivative, Taylor theorem and local extrema 4. Implicitly given functions	



implicit function theorem, constrained extrema, Lagrange multipliers					
<b>Recommended literature:</b> J. Filo, K. Rostás: $2^2 \times 13$ prednášok z matematickej analýzy, Vydavateľstvo UK, 2016. W. Walter: Analysis 2. Springer, Berlin, 2002. W. Rudin: Principles of mathematical analysis. McGraw-Hill, Singapore, 1976. B. P. Demidovich: Problems in Mathematical Analysis, Beekman Books, 1975. I. Kluvánek, L. Mišík, M. Švec: Matematika 1. SVTL, Bratislava, 1966. W. Fleming: Functions of Several Variables, Springer-Verlag, New York-Heidelberg-Berlin 1997.					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 217					
A	B	C	D	E	FX
5,07	10,6	16,59	26,27	35,94	5,53
<b>Lecturers:</b> doc. RNDr. Zbyněk Kubáček, CSc., RNDr. František Jaroš, PhD., RNDr. Kristína Rostás, PhD.					
<b>Last change:</b> 24.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-250/17		<b>Course title:</b> Mathematical Analysis (4)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KMANM/1-MMN-210/15 - Mathematical Analysis (3)					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 541					
A	B	C	D	E	FX
6,65	9,43	15,16	26,62	30,31	11,83
<b>Lecturers:</b> RNDr. Michal Demetrian, PhD., doc. RNDr. Zbyněk Kubáček, CSc., RNDr. František Jaroš, PhD.					
<b>Last change:</b> 25.11.2021					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-510/00		<b>Course title:</b> Mathematical Analysis Complementary Classes (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Mathematical analysis.					
<b>Class syllabus:</b> Revision of all basic notions seen in the lecture and going through the most typical situations which the students can meet during the study of the subject. Giving sufficient number of practical exercises for homework and to discuss their solutions when necessary.					
<b>Recommended literature:</b> The current textbooks recommended by the course teacher.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 582					
A	B	C	D	E	FX
57,56	14,95	10,14	7,9	6,19	3,26
<b>Lecturers:</b> RNDr. František Jaroš, PhD., Mgr. Emília Miťková, PhD.					
<b>Last change:</b> 17.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-520/00		<b>Course title:</b> Mathematical Analysis Complementary Classes (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Mathematical analysis.					
<b>Class syllabus:</b> Revision of all basic notions seen in the lecture and going through the most typical situations which the students can meet during the study of the subject. Giving sufficient number of practical exercises for homework and to discuss their solutions when necessary.					
<b>Recommended literature:</b> The current textbooks recommended by the course teacher.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 520					
A	B	C	D	E	FX
65,38	14,81	8,46	4,23	5,77	1,35
<b>Lecturers:</b> RNDr. František Jaroš, PhD., Mgr. Michaela Vargová, PhD.					
<b>Last change:</b> 24.04.2017					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-565/21		<b>Course title:</b> Mathematical Analysis Complementary Classes (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 3 <b>per level/semester:</b> 39 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 19					
A	B	C	D	E	FX
57,89	10,53	10,53	10,53	5,26	5,26
<b>Lecturers:</b> RNDr. František Jaroš, PhD.					
<b>Last change:</b>					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-570/00		<b>Course title:</b> Mathematical Analysis Complementary Classes (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> 100-91% A; 90-81% B; 80-71% C; 70-61% D; 60-51% E, 50-0% FX Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Revision of all basic notions seen in the lecture and going through the most typical situations which the students can meet during the study of the subject. Giving sufficient number of practical exercises for homework and to discuss their solutions when necessary.					
<b>Recommended literature:</b> The current textbooks recommended by the course teacher.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 431					
A	B	C	D	E	FX
54,06	16,47	11,37	9,28	5,34	3,48
<b>Lecturers:</b> RNDr. František Jaroš, PhD.					
<b>Last change:</b> 28.04.2017					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/1-MMN-365/00		<b>Course title:</b> Mathematical Statistics			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 4 <b>per level/semester:</b> 52 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2) and FMFI.KAMŠ/1-MAT-282/00 - Probability and Statistics (2)					
<b>Course requirements:</b> Preliminary semester evaluation: exams (30%), homework (40%); Examination: test and oral examination (30%); Approximate grade thresholds: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 70/30					
<b>Learning outcomes:</b> To give students overview of basic statistical methods.					
<b>Class syllabus:</b> Random vectors, their probability distribution and characteristics. Transformation of random vectors. Random sampling, sample mean and dispersion. Random sampling from normal distribution. Point estimate and its properties. Rao - Cramer theorem. The method of maximal likelihood and the moment method. Interval estimate. Statistical hypotheses testing, Neymann - Pearson lemma. Goodness of fit test. Basic regression models.					
<b>Recommended literature:</b> Anděl J.: Statistické metody, Praha: Matfyzpress, 1988; Anděl J.: Základy matematické statistiky, Praha: Matfyzpress, 2005;					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 470					
A	B	C	D	E	FX
23,19	18,3	24,26	20,21	12,13	1,91
<b>Lecturers:</b> Mgr. Jozef Kováč, PhD.					

<b>Last change:</b> 16.06.2022
<b>Approved by:</b>



## STATE EXAM DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1- MMN-961/15	<b>Course title:</b> Mathematics and Statistics
<b>Number of credits:</b> 2	
<b>Educational level:</b> I.	
<b>State exam syllabus:</b>	
<b>Last change:</b> 05.11.2015	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAG/1-MMN-321/10	<b>Course title:</b> Matrix Calculus
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 26 / 13 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 4	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b> FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2)	
<b>Course requirements:</b> Semester: homework, midterm exam Exam: written exam Approximate grade scheme: A 75%, B 65%, C 55%, D 45%, E 35% Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> Student will gain basic theoretical knowledge to master the mathematical apparatus, which is standardly used to solve problems of applied mathematics. This course will provide her/him an overview how to solve various problems of numerical algebra.	
<b>Class syllabus:</b> Examples of the occurrence of matrices in practical tasks. LU-decomposition of a matrix and its modifications. Matrix norms. Projective (orthogonal and nonorthogonal) matrix. Last square problem. Generalized inverse matrix. QR-decomposition of a matrix (Gram-Schmidt orthogonalization, Householder's construction). Singular value decomposition of a matrix. Spectral properties of matrix. Gershgorin's theorem. Schur's theorem. Several canonical forms of matrix. Hessenberg form of a matrix. Matrix functions defined over spectra of matrices. Normal matrix. Symmetric, positive definite, Hermitian matrix. The introduction to Perron-Frobenius's theory of nonnegative matrices. Practical applications for problems of numerical algebra.	
<b>Recommended literature:</b> Carl D. Meyer: Matrix Analysis and Applied Linear Algebra, SIAM, 2001 G. Strang: Linear Algebra and Its Applications, 4th edition, Cengage Learning, 2006 M. Fiedler: Speciální matice a jejich použití v numerické matematice, SNTL, Praha, 1981	
<b>Languages necessary to complete the course:</b> English, Slovak	
<b>Notes:</b>	

<b>Past grade distribution</b>					
Total number of evaluated students: 251					
A	B	C	D	E	FX
7,17	21,12	28,29	26,69	15,14	1,59
<b>Lecturers:</b> Mgr. Martin Niepel, PhD., Mgr. Dávid Wilsch					
<b>Last change:</b> 14.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KEF/1-MMN-345/00	<b>Course title:</b> Money and Banking
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Continuous assessment: active participation during the classes, preparing and presentation of seminar work, midterm test Examination: written exam with the possibility of an answer Scale of assessment (preliminary/final): 30/70	
<b>Learning outcomes:</b> The student will get acquainted with the nature, functions and forms of money, as well as with the basics, goals and instruments of monetary policy, tasks and goals of the financial market and forms of the banking system in Slovakia and abroad. After completing the course, the student will be able to integrate Slovakia and the Slovak banking system into the European and global structure and economy, learn the diversity of central and commercial banks, distinguish individual banking products and market laws, as well as unconventional banking markets (Asian markets, closed economies, specifics Islamic banking, crypto-assets markets) and their products.	
<b>Class syllabus:</b> Money and money circulation. Currency. Monetary policy. Financial system. Historical cross-section of banking in Slovakia and worldwide. Specialized non - bank institutions. The position and competence of the central bank. Regulation of the banking sector. Position and main activities of commercial banks. Banking products and their specifics. Connections of the banking market with other components of the developed and developing economy. Specifics of the Eurozone and the European System of Central Banks. Bank marketing. Conventional and unconventional banking markets and systems. Crypto-assets. Banking sector and sustainability.	
<b>Recommended literature:</b> Majerčáková Daniela: Peniaze a bankovníctvo, Wolters Kluwer, 2018 Hosp Julian: Cryptocurrencies. Julian Hosp Coaching LTD, 2017 Banking Act no. 483/2001 as amended Natioanl Bank of Slovakia Act no. 566/1992 as amended Annual reports of Central Banks	

Biatec - monthly journal of Central Bank of Slovakia					
<b>Languages necessary to complete the course:</b> English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 478					
A	B	C	D	E	FX
14,23	22,18	24,9	21,76	16,32	0,63
<b>Lecturers:</b> doc. PhDr. Daniela Majerčáková, PhD., MBA					
<b>Last change:</b> 15.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-316/15		<b>Course title:</b> Nonlinear and Stochastic Optimization (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2) and FMFI.KMANM/1-MMN-255/00 - Linear Programming					
<b>Antirequisites:</b> FMFI.KMANM/1-MMN-316/12					
<b>Course requirements:</b> Evaluation during the semester: written test - solving optimization problems Exam: Written exam, Part one - theory, part two solving problems. Scale of assessment (preliminary/final): 50/50					
<b>Learning outcomes:</b> To learn basics of convex analysis.					
<b>Class syllabus:</b> Examples of nonlinear optimization problems. Convex sets, Carathéodory's theorem. Projection of a point on a set. Separation of convex sets, Farkas' Lemma. Convex functions, differentiable convex functions, Jensen's inequality. Subgradient and subdifferential of convex functions.					
<b>Recommended literature:</b> Nonlinear programming / Dimitri P. Bertsekas. Belmont : Athena Scientific, 1999 Convex optimization / Stephen Boyd, Lieven Vandenberghe. Cambridge : Cambridge University Press, 2004					
<b>Languages necessary to complete the course:</b> english					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 150					
A	B	C	D	E	FX
36,0	18,0	10,67	13,33	20,0	2,0
<b>Lecturers:</b> doc. RNDr. Ivan Kupka, CSc.					

<b>Last change:</b> 15.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-361/15		<b>Course title:</b> Nonlinear and Stochastic Optimization (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2)					
<b>Antirequisites:</b> FMFI.KMANM/1-MMN-361/12					
<b>Course requirements:</b> Evaluation during the semester: written test - solving optimization problems Exam: Written exam, Part one - theory, part two solving problems.					
<b>Learning outcomes:</b> Students will be taught some optimality conditions for non linear problems. Several nonlinear optimization algorithms will be taught.					
<b>Class syllabus:</b> Optimality conditions according to Karusha-Kuhn-Tucker. Frank and wolfe method. Positive definniteness and convexity. Newton method. Basic ideas of stochastic optimization methods. Mathematical and heuristical modelling of optimization problems. The Pareto principle.					
<b>Recommended literature:</b> Nonlinear programming / Dimitri P. Bertsekas. Belmont : Athena Scientific, 1999 When least is best : How Mathematicians discovered many clever ways to make things as small (or as Large) as Possible / Paul J. Nahin. Princeton Oxford : Princeton University Press, 2004					
<b>Languages necessary to complete the course:</b> Slovak.					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 148					
A	B	C	D	E	FX
31,08	18,24	14,19	22,97	11,49	2,03
<b>Lecturers:</b> doc. RNDr. Ivan Kupka, CSc.					
<b>Last change:</b> 15.06.2022					



**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-230/00		<b>Course title:</b> Numerical Methods (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KMANM/1-MMN-150/15 - Mathematical Analysis (2) and FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2)					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 40/60					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Scientific computing, number representation and errors, stability of the algorithms, difference equations, locating roots of nonlinear equations and system of nonlinear equations, polynomial interpolation, approximation of the function by spline functions, least square method.					
<b>Recommended literature:</b> Numerické metody / Babušíková, Slodička, Weisz / Bratislava: Univerzita Komenského / 2000. Numerical Analysis, 9th Edition / Burden, Faires / Brooks-Cole, Cengage Learning / 2011. Grundlagen der Numerischen Mathematik und des Wissenschaftlichen Rechnens, 3. Auflage / Hanke-Bourgeois /Vieweg + Teubner / 2009.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 515					
A	B	C	D	E	FX
13,01	25,83	25,24	17,67	16,31	1,94
<b>Lecturers:</b> Dr. Hana Šmitala Mizerová, Mgr. Jela Babušíková, PhD., RNDr. Patrik Mihala, PhD.					
<b>Last change:</b> 23.09.2019					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MMN-265/00		<b>Course title:</b> Numerical Methods (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KMANM/1-MMN-150/15 - Mathematical Analysis (2) and FMFI.KAG/1-MMN-160/00 - Linear Algebra and Geometry (2)					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 30/70					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Orthogonal systems and Chebyshev polynomials, direct and iterative methods for systems of linear equations, eigenvalue problem, numerical integration, numerical derivations, Richardson extrapolation					
<b>Recommended literature:</b> Babušíková - Slodička - Weisz: Numerické metódy (vysokoškolské skriptá UK Bratislava, 2000. Ralston: A First Course in Numerical Analysis, McGraw-Hill book company, New York, 1965. Příkryl: Numerické metódy matematické analýzy, SNTL, Praha 1985. Míka: Numerické metódy Algebry, SNTL, Praha 1985. Golub, Ortega: Scientific Computing and Differential Equations - An Introduction to Numerical Methods, Academic Press, San Diego, 1981.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 486					
A	B	C	D	E	FX
12,14	23,46	23,25	23,25	16,87	1,03
<b>Lecturers:</b> Dr. Hana Šmitala Mizerová, Mgr. Jela Babušíková, PhD., RNDr. Patrik Mihala, PhD.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KI/1-MAT-230/15	<b>Course title:</b> Operation Systems and Computer Networks
<b>Educational activities:</b> <b>Type of activities:</b> lecture <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Antirequisites:</b> FMFI.KI/1-MAT-230/00	
<b>Course requirements:</b> Activity during lectures (50%), written test (50%) Approximate grading scale: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0	
<b>Learning outcomes:</b> After completing the course, students will have an overview of the principles of computer operation, the tasks and principles of operating systems and the principles of operation and secure use of computer networks and their services.	
<b>Class syllabus:</b> Basic concepts of computer systems (processor, memory, input-output devices). Basic concepts of operating systems, processes, memory management, input and output management, file systems, access control, virtualization. Basic concepts of computer networks, reference model OSI, TCP/IP, e-mail and web, security aspects.	
<b>Recommended literature:</b> Computer networks / Andrew S. Tanenbaum. Upper Saddle River : Prentice-Hall, 2003 Operating systems : Internals and design principles / William Stallings. Upper Saddle River : Pearson/ Prentice Hall, 2005 Teachers' own electronic texts published on the course's web page.	
<b>Languages necessary to complete the course:</b> Slovak, English	
<b>Notes:</b>	

<b>Past grade distribution</b>					
Total number of evaluated students: 52					
A	B	C	D	E	FX
50,0	21,15	11,54	9,62	3,85	3,85
<b>Lecturers:</b> RNDr. Jaroslav Janáček, PhD.					
<b>Last change:</b> 22.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI-FM.KSP/1-MMN-385/00	<b>Course title:</b> Operations Management
<b>Educational activities:</b> <b>Type of activities:</b> lecture / seminar <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The evaluation consists of four parts: (1) active participation 10%, (2) midterm test 20%, (3) seminar paper 20%, (4) final exam 50%. The overall evaluation is in accordance with the faculty evaluation system: A = 91-100%, excellent; B = 81-90%, very good; C = 73-80%, good; D = 66-72%, satisfactory; E = 65-60%, sufficient; FX = 0-59%, insufficient. Scale of assessment (preliminary/final): 50/50	
<b>Learning outcomes:</b> The course Operations Management provides students of the bachelor's degree with basic knowledge from two interrelated areas, production system management and material flow management, both in manufacturing companies and in organizations providing services. After successful completion of the course student will be able to: <ul style="list-style-type: none"> <li>• Understand the importance and functions of operations management and logistics and explain the basic managerial terms and processes as well as the essence of an efficient production system, also in the context of the current Industry 4.0 concept.</li> <li>• Apply a systematic and professional approach to improving productivity.</li> <li>• Understand the functionality and roles of software systems for production and logistics planning and control.</li> <li>• Understand the core concepts of digital manufacturing and digital twin.</li> <li>• Apply principles of sustainable manufacturing in the production system.</li> <li>• Understand the principles of sourcing, procurement and purchasing in logistics.</li> <li>• Analyse, plan, and manage inventory and warehouse systems.</li> <li>• Know the different freight transportation systems and their fields of application.</li> <li>• Assess the possibilities of using information and communication technologies in logistics.</li> </ul>	
<b>Class syllabus:</b> <ol style="list-style-type: none"> <li>1. Characteristics of operations management and production system</li> <li>2. Productivity management</li> <li>3. ERP and MES systems</li> <li>4. Digital production system and digital twin</li> </ol>	

5. Sustainable production system
6. Logistics and supply chain management
7. Procurement and purchasing
8. Inventory and warehouse management
9. Logistics transportation systems
10. Information and communication systems in logistics

### **Recommended literature:**

#### Basic literature:

- [1] FEKETE, Milan, HULVEJ, Jaroslav. Operačný manažment a logistika. Bratislava: Kartprint, 2018. ISBN 978-80-89553-59-4.
- [2] BURGHART, Stephanie, FEKETE, Milan. Risk Management of Procurement of the German Medium-Sized Industrial Companies with the Focus on Security of Supply. In: KRYVINSKA, Natalia, PONISZEWSKA-MARAŇDA, Aneta, eds. Developments in Information & Knowledge Management for Business Applications. Cham: Springer, 2022, pp. 321-359. ISBN 978-3-030-77915-3.
- [3] HEIZER, Jay H., RENDER, Barry, MUNSON, Chuck. Operations Management: Sustainability and Supply Chain Management. 13th edition. Harlow: Pearson, 2020. ISBN 978-1-292-29503-9.
- [4] SULLIVAN, Mac, KERN, Johannes, eds. The Digital Transformation of Logistics: Demystifying Impacts of the Fourth Industrial Revolution. Hoboken, New Jersey: Wiley-IEEE Press, 2021. ISBN 978-1-119-64640-2.
- [5] LANGLEY, C. John, NOVACK, Robert A., GIBSON, Brian J., COYLE, John Joseph. Supply Chain Management: A Logistics Perspective. 11th edition. Boston: Cengage, 2021. ISBN 978-0-357-44213-5.

#### Additional literature:

- [6] BUSCHER, Udo, LASCH, Rainer, SCHÖNBERGER, Jörn, eds. Logistics Management. Cham: Springer, 2021. ISBN 978-3-030-85842-1.
- [7] NAYYAR, Anand, KUMAR, Akshi, eds. A Roadmap to Industry 4.0: Smart Production, Sharp Business and Sustainable Development. Cham: Springer, 2020. ISBN 978-3-030-14543-9.
- [8] The homepage of the FMCU library is: <https://www.fm.uniba.sk/pracoviska/kniznica-fm-uk/>. On this address students can find various bibliography sources. Students can also use other relevant websites like Google Scholar <https://scholar.google.com/> which is also recommended.

### **Languages necessary to complete the course:**

Slovak, English

### **Notes:**

The course is provided only in the summer semester.

In compliance with the regulations of the internal regulation No. 16/2017 Rector's Directive Comenius University in Bratislava Full reading of the internal regulation No. 23/2016 Rector's Directive Comenius University in Bratislava, which issues the Code of Ethics of the Comenius University in Bratislava as read in supplement No. 1, every student acquires his/her study results honestly; does not cheat and use dishonest practices during any form of assessment of his/her acquired knowledge. Cases of breaking the Code of Ethics of Comenius University can be judged as breaking the duties following from legal regulations, (...). Such judgement may be connected with enforcing accompanying legal consequences on academic, (...) disciplinary level.

In accordance with the regulations of the internal regulation No. 13/2018 approved by the Academic senate of Comenius University in Bratislava the Disciplinary Regulations of Comenius University in Bratislava for Students, a disciplinary offence of a student is any form of copying or forbidden cooperation or providing answers during written or oral examination (assessment

of knowledge) or during preparation for it within the course, or using technical devices or any information carriers in other than allowed ways during written or oral evaluation of study results (assessment of knowledge) or during preparation for it within the course. Committing a disciplinary offence may lead to imposing some disciplinary precautions on the student: admonition, conditional suspension of studies or dismissal from studies.

**Past grade distribution**

Total number of evaluated students: 471

A	B	C	D	E	FX
52,02	35,03	11,25	1,49	0,21	0,0

**Lecturers:** doc. Ing. Milan Fekete, PhD., Ing. Jaroslav Hul'vej, PhD.

**Last change:** 08.04.2022

**Approved by:**



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1-MMN-261/10	<b>Course title:</b> Ordinary Differential Equations
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> I., II.	
<b>Prerequisites:</b> FMFI.KMANM/1-MMN-150/15 - Mathematical Analysis (2) or FMFI.KMANM/1-INF-150/00 - Mathematical Analysis (2)	
<b>Course requirements:</b> interim and final exam: continuous examination: tests(45%); final exam: written test(35%) and oral examination(20%) Grades: 100-91% (A); 90-81% (B); 80-71% (C); 70-61% (D); 60-51% (E), 50-0% (Fx) Scale of assessment (preliminary/final): 45/55	
<b>Learning outcomes:</b> The graduate of the course will know the importance of differential equations for applications, the creation of mathematical models, gain skills in solving differential equations and acquire basic knowledge from the introduction to the theory of ordinary differential equations.	
<b>Class syllabus:</b> The notion of the differential equation, solution and initial value problem. The creation of mathematical models, methods of integration. Linear n-th order differential equations. The existence and uniqueness of solutions (the Picard's theorem). Applications in natural and economic sciences.	
<b>Recommended literature:</b> 1. Greguš, M., Švec, M., Šeda, V.: Obyčajné diferenciálne rovnice, Bratislava, Alfa, 1985. 2. Kluvánek, I., Mišík, L., Švec, M.: Matematika II, SVTL Bratislava, 1961. 3. Bock, I., Marko, Ľ. : Diferenciálne rovnice, skriptá, FEI STU, 1993. 4. D. K. Arrowamith, C. M. Place: Ordinary Diferrential Equations. A Qualitative Approach with Applications, Chapman and Hall, London, New York 1982. 5. E. A. Coddington, N. Levinson: Theory of Ordinary Differential Equations, McGraw-Hill Book Company, Inc., New York, Toronto, London 1955.	
<b>Languages necessary to complete the course:</b> slovak	

<b>Notes:</b>					
<b>Past grade distribution</b>					
Total number of evaluated students: 387					
A	B	C	D	E	FX
12,66	6,98	15,25	20,16	37,73	7,24
<b>Lecturers:</b> RNDr. František Jaroš, PhD., prof. RNDr. Milan Medved', DrSc.					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-MXX-110/00		<b>Course title:</b> Physical Education and Sport (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 0					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Grades: A 90%, B 80%, C 70%, D 60%, E 50% Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Orientation in the history of the selected sports discipline, mastering the basic principles of compensation of mostly mental burdens of the individual. Creating a positive, lasting relationship to physical education and sports in the sense of calocagation. Mastering the demands for the development of motor abilities, skills, proper technique of performing individual movements in individual sports, individual game activities in collective sports games.					
<b>Class syllabus:</b> Introduction to the basic history of the selected sport, with the basic principles of compensation of one-sided psychological burden of the individual's body. Development of basic motor skills with a stop to all kinds of endurance, coordination, increasing the level of joint mobility. Training of individual game activities in collective sports games. In individual sports disciplines, practice of basic techniques of individual elements.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 5698					
A	B	C	D	E	FX
95,35	1,7	0,12	0,0	0,07	2,76
<b>Lecturers:</b> Mgr. Ladislav Mókus, PaedDr. Dana Mašlejová, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký					

<b>Last change:</b> 16.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-MXX-120/00		<b>Course title:</b> Physical Education and Sport (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 0					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 4814					
A	B	C	D	E	FX
96,72	1,62	0,1	0,06	0,04	1,45
<b>Lecturers:</b> Mgr. Tomáš Kuchár, PhD., PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-MXX-210/00		<b>Course title:</b> Physical Education and Sport (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> To practise game combinations, tactical - mechanical elements in basketball, volleyball, soccer, floorball, ice hockey, badminton, competition rules in the sports specialization.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 2799					
A	B	C	D	E	FX
98,54	0,5	0,11	0,04	0,0	0,82
<b>Lecturers:</b> Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký					
<b>Last change:</b> 16.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KTV/1-MXX-220/00		<b>Course title:</b> Physical Education and Sport (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 2518					
A	B	C	D	E	FX
98,53	0,16	0,08	0,04	0,0	1,19
<b>Lecturers:</b> Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký					
<b>Last change:</b> 15.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-MXX-310/00		<b>Course title:</b> Physical Education and Sport (5)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Preparation and participation of individuals and teams in the system of university sport competitions and sport events.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1864					
A	B	C	D	E	FX
98,98	0,38	0,11	0,0	0,0	0,54
<b>Lecturers:</b> Mgr. Tomáš Kuchár, PhD., Mgr. Ladislav Mókus, Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký					
<b>Last change:</b> 15.03.2022					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-MXX-320/00		<b>Course title:</b> Physical Education and Sport (6)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1630					
A	B	C	D	E	FX
98,71	0,37	0,12	0,0	0,0	0,8
<b>Lecturers:</b> PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, Mgr. Jana Leginusová, Mgr. Tomáš Kuchár, PhD., PaedDr. Mikuláš Ortutay, Mgr. Martin Dovičák, PhD., Mgr. Júlia Raábová, PhD., Mgr. Branislav Nedbálek, Mgr. Tomáš Lovecký					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAMŠ/1-MAT-281/00	<b>Course title:</b> Probability and Statistics (1)
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 26 / 13 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 4	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b> (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.KAG/1-MAT-120/15 - Linear Algebra and Geometry (1) or FMFI.KAG/1-MMN-120/00 - Linear Algebra and Geometry (1) or FMFI.KAG/1-EFM-121/15 - Linear Algebra and Geometry (1))	
<b>Course requirements:</b> 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): 50/50	
<b>Learning outcomes:</b> 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.	
<b>Class syllabus:</b> 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.	
<b>Recommended literature:</b> 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	
<b>Languages necessary to complete the course:</b> Slovak, English	

<b>Notes:</b>					
<b>Past grade distribution</b>					
Total number of evaluated students: 1345					
A	B	C	D	E	FX
17,17	12,49	18,07	21,78	24,76	5,72
<b>Lecturers:</b> doc. RNDr. Katarína Janková, CSc., Mgr. Livia Rosová, PhD., Ing. Assa Camara, Mgr. Ján Veselý					
<b>Last change:</b> 09.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAMŠ/1-MAT-282/00	<b>Course title:</b> Probability and Statistics (2)
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 1 <b>per level/semester:</b> 26 / 13 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 4	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> I.	
<b>Prerequisites:</b> FMFI.KAMŠ/1-MAT-281/00 - Probability and Statistics (1)	
<b>Course requirements:</b> 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	
<b>Learning outcomes:</b> 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.	
<b>Class syllabus:</b> 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.	
<b>Recommended literature:</b> 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	
<b>Languages necessary to complete the course:</b> Slovak, English	

<b>Notes:</b>					
<b>Past grade distribution</b>					
Total number of evaluated students: 1312					
A	B	C	D	E	FX
18,22	10,75	15,24	20,35	27,82	7,62
<b>Lecturers:</b> doc. RNDr. Katarína Janková, CSc., Mgr. Lívia Rosová, PhD., Ing. Assa Camara, Pál Somogyi, Mgr. Ján Veselý					
<b>Last change:</b> 09.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KDMFI/1-MAT-130/14		<b>Course title:</b> Programming (1)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b>					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b> 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 Python.					
<b>Class syllabus:</b> Expressions and variables. Loops. Program branching. Subroutines and functions. List. Solving mathematical and geometrical problems. User interaction.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 742					
A	B	C	D	E	FX
50,81	8,76	6,33	6,33	8,22	19,54
<b>Lecturers:</b> doc. RNDr. Ľubomír Salanci, PhD., doc. RNDr. Ľudmila Jašková, PhD., Mgr. Mária Čujdíková, PhD.					
<b>Last change:</b> 05.11.2021					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KDMFI/1-MAT-170/00		<b>Course title:</b> Programming (2)			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 5					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KDMFI/1-MAT-130/14 - Programming (1)					
<b>Course requirements:</b>					
<b>Learning outcomes:</b> Using object-oriented programming in the Python programming language, students are able to solve problems algorithmically, process structured data and interact with the user.					
<b>Class syllabus:</b> Strings. Objects. Many objects. Turtle graphics. Recursion. Files, Solving mathematical and geometrical problems. User interaction.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 1768					
A	B	C	D	E	FX
34,28	16,35	12,56	12,73	18,38	5,71
<b>Lecturers:</b> doc. RNDr. Ľubomír Salanci, PhD.					
<b>Last change:</b> 30.11.2021					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-UXX-340/00		<b>Course title:</b> Recreation Sports in Dialy Routine of Pupils and Students			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 5.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> 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.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 44					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Tomáš Kuchár, PhD.					
<b>Last change:</b> 14.01.2022					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-161/00		<b>Course title:</b> Russian Language (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing.					
<b>Class syllabus:</b> To master the fundamentals of general Russian. The language level is A1. Learning the Cyrillic (Russian) alphabet, gaining basic language competence, building up skills and confidence in dealing with unfamiliar authentic and semi-authentic texts. The subject provides a course in Russian language for beginners.					
<b>Recommended literature:</b> The textbook: : Точка Ру А1 (Ольга Долматова, Екатерина Новачац), pracovné karty Падежи 1 (Л.С. Безкоровайная, В.Е. Штыленко).					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 707					
A	B	C	D	E	FX
58,56	16,55	11,03	4,38	1,84	7,64
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-162/00		<b>Course title:</b> Russian Language (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing.					
<b>Class syllabus:</b> To master the fundamentals of general Russian. Learning the Cyrillic (Russian) alphabet, gaining basic language competence, building up skills and confidence in dealing with unfamiliar authentic and semi-authentic texts. The subject continues the program of Russian language (1) and provides a course of Russian for beginners.					
<b>Recommended literature:</b> Textbook: Точка Ру А1 (Ольга Долматова, Екатерина Новачац), pracovné karty Падежи 1 (Л.С. Безкорвайная, В.Е. Штыленко).					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 421					
A	B	C	D	E	FX
65,08	15,68	8,79	3,8	0,95	5,7
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-261/00		<b>Course title:</b> Russian Language (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Basic communication in Russian, developing other Russian language skills - listening comprehension, reading and writing.					
<b>Class syllabus:</b> Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary. The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.					
<b>Recommended literature:</b> Точка Ру А2 (Ольга Долматова, Екатерина Новачац) а Short Stories in Russian (Olly Richards, Alex Rowlings)					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 200					
A	B	C	D	E	FX
70,5	17,5	8,5	2,5	0,0	1,0
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-262/00		<b>Course title:</b> Russian Language (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary.					
<b>Class syllabus:</b> Learning the handwritten Russian (Russian Cursive Cyrillic), developing further language skills, gaining knowledge of Russian culture, history and way of life, pre-intermediate to intermediate grammar and vocabulary. The course "Russian for Intermediate Students" is a follow-up to "Russian for Beginners". The subject of the course is general Russian in the range appropriate to the given level.					
<b>Recommended literature:</b> Точка Ру А2 (Ольга Долматова, Екатерина Новачац) а Short Stories in Russian (Olly Richards, Alex Rowlings)					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 144					
A	B	C	D	E	FX
75,69	13,19	6,94	2,78	0,69	0,69
<b>Lecturers:</b> Viktoria Mirsalova					
<b>Last change:</b> 20.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KAI/2-IKV a-192/19	<b>Course title:</b> Science, Technology and Humanity: Opportunities and Risks
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week: 3 per level/semester: 39</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Semestral evaluation: active participation Final evaluation: essay Weight of the final evaluation: 60% To achieve an A, 90% is needed, for B at least 80%, for C 70%, for D, 60% and for an E, at least 50% of overall assessment.	
<b>Learning outcomes:</b> The students will gain awareness of the contemporary and potential future challenges posed by scientific and technological innovations and their impact on human behaviour, culture and society.	
<b>Class syllabus:</b> Big data: privacy, politics and power, Internet of things, its usefulness and threats, Assistant AI and its place in future society, Job market and inequality, Enhancements and human rights and the right to change self and others, Initiatives for responsible research, Artificial minds, Hybridization between species and between AI and organic minds, Future of minds and trans-humanism, Artificial emotional intelligence, An after human era.	
<b>Recommended literature:</b> - S. Russell: Human compatible. Artificial intelligence and the problem of control. Viking, 2019. - J. Havens: Heartificial intelligence. Embracing our humanity to maximize machines. Penguin, 2016. - P. Boddington: Towards a code of ethics for artificial intelligence. Springer, 2017. - M. Shanahan: The technological singularity. MIT Press, 2015.	

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

**Languages necessary to complete the course:**

English

**Notes:**

**Past grade distribution**

Total number of evaluated students: 48

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

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

**Last change:** 28.02.2020

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KMANM/1-MAT-715/15		<b>Course title:</b> Seminar in MS-Office			
<b>Educational activities:</b> <b>Type of activities:</b> seminar <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KMANM/1-MAT-715/00					
<b>Course requirements:</b>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b>					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 143					
A	B	C	D	E	FX
57,34	15,38	6,99	6,99	4,9	8,39
<b>Lecturers:</b> RNDr. Peter Švaňa, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-171/20		<b>Course title:</b> Slovak Language for Foreign Students (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> This course is aimed for foreign students to learn the fundamentals of the Slovak language with the focus on basic communication as well as all other language skills- listening comprehension,reading and writing.					
<b>Class syllabus:</b> The syllabus is targeted at the comprehension of the basics of the Slovak language for the absolute beginners (A1).					
<b>Recommended literature:</b> Križom- Krážom Slovenčina 1, additional material to further support the covered topics.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 23					
A	B	C	D	E	FX
47,83	0,0	0,0	0,0	0,0	52,17
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					



## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-172/20		<b>Course title:</b> Slovak Language for Foreign Students (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> This course is aimed for foreign students to learn the fundamentals of the Slovak language with the focus on basic communication as well as all other language skills- listening comprehension,reading and writing.					
<b>Class syllabus:</b> The syllabus is targeted at the comprehension of the basics of the Slovak language for the absolute beginners (A1) and this course is a follow up course to the Slovak language course 1.					
<b>Recommended literature:</b> Križom- Krážom Slovenčina 1, additional material to further support the covered topics					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 22					
A	B	C	D	E	FX
81,82	0,0	4,55	0,0	0,0	13,64
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-271/20		<b>Course title:</b> Slovak Language for Foreign Students (3)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> This course is aimed for foreign students to better comprehend all the language skills important to enable correct usage of the Slovak language – listening comprehension, reading, writing and speaking.					
<b>Class syllabus:</b> The syllabus is targeted at the comprehension of all the language skills of the Slovak language , and it is a follow up course to the Slovak language course 2.					
<b>Recommended literature:</b> Križom-Krážom Slovenčina 2, additional material to further support the covered topics.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 8					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-272/20		<b>Course title:</b> Slovak Language for Foreign Students (4)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebežneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b> This course is aimed for foreign students to better comprehend all the language skills important to enable correct usage of the Slovak language – listening comprehension, reading, writing and speaking.					
<b>Class syllabus:</b> The syllabus is targeted at the comprehension of all the language skills of the Slovak language , and it is a follow up course to the Slovak language course 3.					
<b>Recommended literature:</b> Križom-Krážom Slovenčina 2, additional material to further support the covered topics.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 7					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Aneta Barnes					
<b>Last change:</b> 21.06.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics	
<b>Course ID:</b> FMFI.KMANM/1- MAT-733/19	<b>Course title:</b> Software MATLAB
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Antirequisites:</b> FMFI.KMANM/1-MAT-731/00 and FMFI.KMANM/1-MAT-732/00	
<b>Course requirements:</b> Continuous assessment: activity Examination: group project, practical computer exam Scale of assessment (preliminary/final): 20/80	
<b>Learning outcomes:</b> Students will learn the basics of using MATLAB software. They will be able to use MATLAB to calculate some mathematical problems, read files or write to files, plot computed data, create complex functions for reuse and create a graphical user interface GUI for their programs.	
<b>Class syllabus:</b> Format and conversion of variables, vectors and matrices Programming environment, so-called M-file Reading from a file and plotting data Creating functions Graphical GUI environment	
<b>Recommended literature:</b> MATLAB - SIMULINK I / Stefan Kozak, Slavomir Kajan. Bratislava: Slovak University of Technology, 1999 Matlab / Jela Babušíková. Bratislava: FMFI UK Library and Publishing Center, 2007 Kozák Š., Kajan S., Matlab - Simulink, 1. Slovak University of Technology in Bratislava, 1999. ISBN Dušek F., MatLab and Simulink, University of Pardubice, 2000 <a href="http://mathworks.com/help">mathworks.com/help</a>	
<b>Languages necessary to complete the course:</b> slovak	
<b>Notes:</b>	

<b>Past grade distribution</b>					
Total number of evaluated students: 52					
A	B	C	D	E	FX
19,23	25,0	13,46	15,38	11,54	15,38
<b>Lecturers:</b> RNDr. Patrik Mihala, PhD.					
<b>Last change:</b> 15.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-MXX-115/15		<b>Course title:</b> Sports in Nature (1)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Grades: A 90%, B 80%, C 70%, D 60%, E 50%. The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.					
<b>Learning outcomes:</b> Acquisition and development of basic motor skills and abilities in selected sports: skiing and snowboarding. Mastering the correct technique of performing individual movements, which are necessary for skiing and snowboarding.					
<b>Class syllabus:</b> The student can sign up for the outdoor sports courses offered by the department: skiing, snowboarding and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak					
<b>Notes:</b> KTVŠ does not rent ski equipment.					
<b>Past grade distribution</b> Total number of evaluated students: 227					
A	B	C	D	E	FX
99,56	0,0	0,44	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Martin Dovičák, PhD., Mgr. Tomáš Kuchár, PhD., Mgr. Jana Leginusová, PaedDr. Dana Mašlejová, Mgr. Ladislav Mókus, PaedDr. Mikuláš Ortutay, Mgr. Júlia Raábová, PhD.					

<b>Last change:</b> 16.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFL.KTV/1-MXX-215/15		<b>Course title:</b> Sports in Nature (2)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:</b> <b>per level/semester:</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Grades: A 90%, B 80%, C 70%, D 60%, E 50% The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.					
<b>Learning outcomes:</b> Creating a positive and lasting relationship with physical activity. Acquisition and mastery of basic motor skills and abilities in outdoor sports: windsurfing, beach volleyball, water tourism - river rafting, hiking and other sports according to interest. Training and improving the technique needed for the sports.					
<b>Class syllabus:</b> The student can sign up for the outdoor sports courses offered by the department: water tourism - river rafting, windsurfing, beach volleyball, hiking and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak					
<b>Notes:</b> KTVŠ will provide sports equipment.					
<b>Past grade distribution</b> Total number of evaluated students: 194					
A	B	C	D	E	FX
94,33	0,0	0,0	0,0	0,0	5,67



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

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KTV/1-MXX-216/18		<b>Course title:</b> Sports in Nature (3)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 1					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KTV/1-UXX-151/22					
<b>Course requirements:</b> Grades: A 90%, B 80%, C 70%, D 60%, E 50% The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.					
<b>Learning outcomes:</b> Acquisition and development of basic motor skills and abilities in selected sports: skiing and snowboarding. Mastering the correct technique of performing individual movements, which are necessary for skiing and snowboarding.					
<b>Class syllabus:</b> The student can sign up for the outdoor sports courses offered by the department: skiing, snowboarding. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak					
<b>Notes:</b> KTVŠ does not rent ski equipment.					
<b>Past grade distribution</b> Total number of evaluated students: 19					
A	B	C	D	E	FX
100,0	0,0	0,0	0,0	0,0	0,0

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

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KTV/1-MXX-217/18		<b>Course title:</b> Sports in Nature (4)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 1					
<b>Recommended semester:</b> 4.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Antirequisites:</b> FMFI.KTV/1-UXX-152/22					
<b>Course requirements:</b> Grades: A 90%, B 80%, C 70%, D 60%, E 50% The condition for the award of 1 or 2 credits is the completion of a multi-day course in its full scope, or the completion of one-day courses in the scope of 4 days. Candidates can apply to the leaders of individual courses. From the presented offer of courses, you can choose the one that suits your interests, abilities and deadlines.					
<b>Learning outcomes:</b> Creating a positive and lasting relationship with physical activity. Acquisition and mastery of basic motor skills and abilities in outdoor sports: windsurfing, beach volleyball, water tourism - river rafting, hiking and other sports according to interest. Training and improving the technique needed for the sports.					
<b>Class syllabus:</b> The student can sign up for the outdoor sports courses offered by the department: water tourism - river rafting, windsurfing, beach volleyball, hiking and other hobby sports. The lessons in the courses are focused on the development of basic and special movement skills and, mastering the techniques needed for the sports.					
<b>Recommended literature:</b>					
<b>Languages necessary to complete the course:</b> Slovak					
<b>Notes:</b> KTVŠ will provide material equipment.					
<b>Past grade distribution</b> Total number of evaluated students: 18					
A	B	C	D	E	FX
88,89	0,0	0,0	0,0	0,0	11,11

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

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-133/18		<b>Course title:</b> Supplementary English Course (1)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 1.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests, homework Scale of assessment (preliminary/final): 100/0 credit - ongoing evaluation Minimum 65 percent of the total points for the assigned work is needed to pass the course. Points can be awarded for attendance, completed homework tasks, and short tests assigned during the course. A 100-93 % B 92-85 % C 84-77 % D 76-70 % E 69-65 % Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Texts dealing with the most important topics for FMPI majors combining grammar revision with vocabulary needed to pass the A4 English exam.					
<b>Recommended literature:</b> Study materials are created by the teacher and available in electronic form. Raymond Murphy: Essential Grammar in Use, Cambridge University Press, 1998 Michael McCarthy, Felicity O'Dell: English Vocabulary in Use, Cambridge University Press, 1994					
<b>Languages necessary to complete the course:</b> English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 25					
A	B	C	D	E	FX
52,0	24,0	8,0	0,0	8,0	8,0
<b>Lecturers:</b> Mgr. Ing. Jana Kočvarová					

<b>Last change:</b> 17.06.2022
<b>Approved by:</b>

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KJP/1-MXX-134/18		<b>Course title:</b> Supplementary English Course (2)			
<b>Educational activities:</b> <b>Type of activities:</b> practicals <b>Number of hours:</b> <b>per week: 2 per level/semester: 26</b> <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 2.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> tests, homework Scale of assessment (preliminary/final): 100/0 ENcredit - ongoing evaluation Minimum 65 percent of the total points for the assigned work is needed to pass the course. Points can be awarded for attendance, completed homework tasks, and short tests assigned during the course. A 100-93 % B 92-85 % C 84-77 % D 76-70 % E 69-65 %Course prerequisites: <a href="https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/">https://fmph.uniba.sk/microsites/kjp/katedra-jazykovej-pripravy/poziadavky-na-udelenie-priebezhneho-hodnotenia-aj1aj2aj3-ostatne-kurzy/</a>					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Texts dealing with the most important topics for FMPI majors combining grammar revision with vocabulary needed to pass the A4 English exam.					
<b>Recommended literature:</b> Study materials are created by the teacher and available in electronic form. Raymond Murphy: Essential Grammar in Use, Cambridge University Press, 1998 Michael McCarthy, Felicity O'Dell: English Vocabulary in Use, Cambridge University Press, 1994					
<b>Languages necessary to complete the course:</b> English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 26					
A	B	C	D	E	FX
57,69	15,38	0,0	11,54	3,85	11,54
<b>Lecturers:</b> Mgr. Ing. Jana Kočvarová					
<b>Last change:</b> 17.06.2022					



**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAMŠ/1-MMN-380/00		<b>Course title:</b> Time Series Analysis			
<b>Educational activities:</b> <b>Type of activities:</b> course <b>Number of hours:</b> <b>per week:</b> 2 <b>per level/semester:</b> 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> 6.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b> FMFI.KMANM/1-MMN-250/17 - Mathematical Analysis (4) and FMFI.KAMŠ/1-MAT-282/00 - Probability and Statistics (2)					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Decomposition of time series. Modelling of the trend by mathematical functions. The moving average method. Exponential smoothing. Seasonal components. Tests of randomness. The ARIMA models. The Box - Jenkins methodology. Linear dynamical models of time series.					
<b>Recommended literature:</b> T. Cipra: Analýza časových řad s aplikacemi v ekonomii. SNTL / Alfa, Praha 1986. J. Chajdiak, J. Komorník, M. Komorníková: Štatistické metódy. STATIS, Bratislava 1999. J. Anděl: Statistická analýza časových řad. SNTL, Praha 1976.					
<b>Languages necessary to complete the course:</b> Slovak, English					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 481					
A	B	C	D	E	FX
40,12	24,53	16,22	11,43	6,65	1,04
<b>Lecturers:</b> Mgr. Jozef Kováč, PhD.					
<b>Last change:</b> 09.03.2022					
<b>Approved by:</b>					

## COURSE DESCRIPTION

<b>Academic year:</b> 2021/2022					
<b>University:</b> Comenius University Bratislava					
<b>Faculty:</b> Faculty of Mathematics, Physics and Informatics					
<b>Course ID:</b> FMFI.KAI/1-MMN-215/00		<b>Course title:</b> User Mathematical and Economic Software			
<b>Educational activities:</b> <b>Type of activities:</b> lecture / practicals <b>Number of hours:</b> <b>per week:</b> 2 / 2 <b>per level/semester:</b> 26 / 26 <b>Form of the course:</b> on-site learning					
<b>Number of credits:</b> 4					
<b>Recommended semester:</b> 3.					
<b>Educational level:</b> I.					
<b>Prerequisites:</b>					
<b>Course requirements:</b> Scale of assessment (preliminary/final): 100/0					
<b>Learning outcomes:</b>					
<b>Class syllabus:</b> Characteristics of MS Office. Word processor MS Word. WEB pages creation. Making presentations in MS PowerPoint. Spreadsheet processor MS Excel.					
<b>Recommended literature:</b> T. Šimek, J. Vacek: Microsoft Word - učebnice pro pokročilé, Computer Press, 1998. T. Šimek, J. Vacek: Microsoft Excel pro pokročilé, Computer Press, 1997. Ch. Solomon: Tvorba aplikácií v Microsoft Office 97, Computer Press, 1998. P. Satrapa: Web design, Neokortex s.r.o., 1997.					
<b>Languages necessary to complete the course:</b>					
<b>Notes:</b>					
<b>Past grade distribution</b> Total number of evaluated students: 268					
A	B	C	D	E	FX
77,99	10,07	4,48	3,36	2,61	1,49
<b>Lecturers:</b> Ľubomír Lúčan, CSc.					
<b>Last change:</b> 02.06.2015					
<b>Approved by:</b>					