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University: P. J. Šafá	rik University in Košice
<b>Faculty:</b> Faculty of S	cience
<b>Course ID:</b> ÚINF/ AOS1/15	Course name: Administration of OS
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent
Number of ECTS cr	edits: 2
Recommended seme	ster/trimester of the course: 1., 3.
Course level: I., II.	
Prerequisities:	
Conditions for cours	e completion:
Learning outcomes: To be able to install L several network dean	inux based system, divide disks, to know how to install, configure and manage nons.
<ul> <li>Brief outline of the c</li> <li>1. Introduction to net</li> <li>2. SSH</li> <li>3. Routing and NAT</li> <li>4. Introduction to Fire</li> <li>5. Advanced firewall</li> <li>6. DHCP server</li> <li>7. Web server (apaches)</li> <li>8. Monitoring Server</li> <li>9. Samba Server</li> <li>10. Mail server (smtp)</li> <li>11. Proxy server</li> <li>12. Windows server</li> <li>13. Windows Server</li> <li>14. Introduction to Value</li> </ul>	ourse: work services ewall settings e, php, mysql) (SNMP, MRTG) o, imap, postfix) II. irtualization (Hyper-V OpenVZ)
Recommended litera 1. Linux Documentat 2. Stanek, W.: Windo 3. Shah, S. Soyinka, 4. Nemeth, E., et al.:	ture: ion Project, 4 updated edition. Brno: Computer Press (2008). ws Server 2012 Inside Out. Microsoft Press (2013) W. Administration Linux. Grade (2007) Linux. Brno: Computer Press (2008)
Course language: Slovak or english	
Notes:	

Course assessment Total number of assessed students: 28							
А	A B C D E FX						
57.14	21.43	14.29	0.0	7.14	0.0		
Provides: RND	Provides: RNDr. JUDr. Pavol Sokol, PhD., RNDr. Tomáš Bajtoš						
Date of last modification: 10.02.2021							
Approved: prof. RNDr. Viliam Geffert, DrSc.							

University: P. J.	University: P. J. Šafárik University in Košice					
Faculty: Faculty	y of Science					
<b>Course ID:</b> ÚIN PDK1/18	<b>Course ID:</b> ÚINF/ <b>Course name:</b> Agilná pomocná ruka pri písaní dobrého kódu PDK1/18					
Course type, sc Course type: I Recommended Per week: 2 / 0 Course method	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 0 Per study period: 28 / 0 Course method: present					
Number of ECT	<b>FS credits:</b> 3					
Recommended	semester/trimes	ster of the cours	e:			
Course level: II						
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 12						
А	В	С	D	Е	FX	
33.33	33.33 25.0 25.0 0.0 16.67 0.0					
Provides: RNDr. Peter Gurský, PhD.						
Date of last modification: 07.05.2018						
Approved: prof	. RNDr. Viliam (	Geffert, DrSc.				

University: P. J	Safarik Univers	ity in Kosice					
Faculty: Facult	y of Science						
<b>Course ID:</b> ÚM ALG3b/10	Course ID: ÚMV/ Course name: Algebra II for informaticians and physicists ALG3b/10						
Course type, sc Course type: 1 Recommended Per week: 4 / 2 Course metho	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 4 / 2 Per study period: 56 / 28 Course method: present						
Number of EC	<b>FS credits:</b> 7						
Recommended	semester/trime	ster of the cours	se: 2.				
Course level: I.	, II.						
Prerequisities:	ÚMV/ALGa/10						
<b>Conditions for</b> Exam	course completi	on:					
<b>Learning outco</b> To provide deep	mes: ber knowledge of	n vector spaces,	linear transforma	ations and Euclide	an spaces.		
Brief outline of Vector spaces, spaces. The rar tranformations, transformations of linear transfor Affine spaces, s and quadrics.	the course: subspaces. A ba k of a matrix. I matrices of su , regular matrice ormations. subspaces and th	sis, a dimensior inear transform ms and compos s. Similar matric eir positions. Eu	and a character ations and their sitions of linear es. Characteristic clidean spaces, t	rization of n-dime matrices. Operati tranformations. e vectors and chara the distance of sub	ensional vector ons with linear Regular linear acteristic values ospaces. Conics		
<b>Recommended</b> A. F. Beardon: G. Birkhoff, S.	<b>literature:</b> Algebra and Geo Mac Lane: A Su	metry, Cambridg	ge University Pro Algebra, New Yo	ess, 2005 ork 1965			
<b>Course languaş</b> Slovak	ge:						
Notes:							
<b>Course assessm</b> Total number of	ent f assessed studen	ts: 262					
А	В	С	D	E	FX		
14.12	14.12 10.69 11.83 18.7 33.59 11.07						
Provides: doc. RNDr. Roman Soták, PhD., RNDr. Mária Maceková, PhD.							
Date of last modification: 26.03.2020							
Approved: prof	. RNDr. Viliam	Geffert, DrSc.					

Faculty: Faculty of Science         Course ID: ÚINF/ ANP/15       Course name: Algorithmic unsolved problems         Course type, scope and the method:       Course type: Lecture / Practice         Recommended course-load (hours):       Per week: 2 / 1 Per study period: 28 / 14         Course method:       Persent         Number of ECTS credits: 4       Recommended semester/trimester of the course: 2.         Course level: II.       Prerequisities:         Conditions for course completion:       Coefficient for the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:       J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. K leene, Introduction to the Metamathematies, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly, 1973, 233269.         Ju.V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk, 5> 27        (1972), 185222         L. Bukovský, Algoritmicky nericšiteľné problémy, učebný text v elektronickej forma na sieti Novel, PF UPJŠ, Košice, 2003	University: P. J. Šafárik University in Košice					
Course ID: ÚINF/ ANP/15       Course name: Algorithmic unsolved problems         Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per weck: 2/1 Per study period: 28 / 14 Course method: present       Recommended semester/rimester of the course: 2.         Number of ECTS credits: 4       Recommended semester/trimester of the course: 2.       Course level: II.         Prerequisities:       Conditions for course completion:       Prerequisities:         Conditions for course completion:       Recommended the existence of an algorithm for solving given problem.         Brief outline of the course:       Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability.       Recommended literature:         J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathemathes, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly, 1973, 233269.         Ju.V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk, <b> 27          Voel       Lourse assessment         Total number of assessed students: 23       A         A       B       C       D       E       FX         100.0</b>	Faculty: Faculty of	f Science				
Course type, scope and the method:       Course type: Lecture / Practice         Recommended course-load (hours):       Per week: 2 / 1 Per study period: 28 / 14         Course method: present       Number of ECTS credits: 4         Recommended semester/trimester of the course: 2.       Course level: II.         Prerequisities:       Conrigo outcomes:         To introduce the student into most important results about non-existence of an algorithm for solving given problem.         Brief outline of the course:       Algorithmic insolving given problem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for solving given problem.         Breif outline of the course:         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:       J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957. E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269. Ju. V. Matijasevič, Diofantovy Minožestva, Usp. Mat. Nauk, $\>> 27 < \>> (1972), 185222$ L. Bukovský, Algorithmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti Novel, FP UPJS, Košice, 2003         Course language:	<b>Course ID:</b> ÚINF/ ANP/15	Course na	me: Algorithmic	unsolved prob	lems	
Number of ECTS credits: 4         Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To introduce the student into most important results about non-existence of an algorithm for solving given problem.         Brief outline of the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Non-existence of an algorithm for deciding the existence of a solution of biophantine equations. Non-existence of an algorithm for deciding the existence of a solution of biophantine equations. Non-existence of a solution to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.	Course type, scope Course type: Lec Recommended co Per week: 2 / 1 Po Course method: 1	e and the met ture / Practice ourse-load (h er study perio present	hod: ours): od: 28 / 14			
Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To introduce the student into most important results about non-existence of an algorithm for solving given problem.         Brief outline of the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:         J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.         Ju. V. Matijasević, Diofantovy Množestva, Usp. Mat. Nauk, Vap. 27         Notes:         Course assessment         Notes:         Course assessed students: 23         A       B	Number of ECTS	credits: 4				
Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To introduce the student into most important results about non-existence of an algorithm for solving given problem.         Brief outline of the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:       J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.         Ju. V. Matijasević, Diofantovy Množestva, Usp. Mat. Nauk, <b> 27       (1972), 185222         L Bukovský, Algoritmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti Novel, PF UPJŠ, Košice, 2003         Course assessment         Total number of assessed students: 23         A       B       C       D       E       FX</b>	Recommended ser	nester/trimes	ter of the course	e: 2.		
Prerequisities:         Conditions for course completion:         Learning outcomes:         To introduce the student into most important results about non-existence of an algorithm for solving given problem.         Brief outline of the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:         J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.       Ju.V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk, <b> <math>27 &lt; b&gt; (1972)</math>, <math>185 - 222</math>       L. Bukovský, Algoritmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti Novel, PF UPJŠ, Košice, 2003         Course assessment         Total number of as</b>	Course level: II.					
Conditions for course completion:         Learning outcomes:         To introduce the student into most important results about non-existence of an algorithm for solving given problem.         Brief outline of the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:         J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.         Ju.V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk, > $27 > (1972), 185222$ L. Bukovský, Algoritmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti Novel, PF UPJŠ, Košice, 2003         Course assessment         Total number of assessed students: 23         A       B       C       D       E       FX          0.0       0.0       <	Prerequisities:					
Learning outcomes:         To introduce the student into most important results about non-existence of an algorithm for solving given problem.         Brief outline of the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:         J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.         Ju.V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk, $<>> 27  > (1972), 185222$ L. Bukovský, Algoritmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti Novel, PF UPJŠ, Košice, 2003         Course language:         Notes:         Cause sasessment         Total number of assessed students: 23         A       B       C       D       E       FX         100.0       0.0       0.0       0.0       0.0       0.0 <td>Conditions for cou</td> <td>ırse completi</td> <td>on:</td> <td></td> <td></td> <td></td>	Conditions for cou	ırse completi	on:			
Brief outline of the course:         Axiomatic theories of natural numbers. Definibality of recursive functions. Tarski theorem on undefinability of truth in formalized arithmethic. Godel incompletness theorem.         Algorithmic unsolvability of particular mathematical problems. Non-existence of an algorithm for deciding the existence of a solution of Diophantine equations. Reduction of problems and degrees of unsolvability.         Recommended literature:         J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.         E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.         M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.         Ju. V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk, <b> 27</b> (1972), 185222         L. Bukovský, Algoritmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti Novel, PF UPJŠ, Košice, 2003         Course language:         Notes:         Course assessment         Total number of assessed students: 23         A       B       C       D       E       FX         100.0       0.0       0.0       0.0       0.0         Provides: prof. RNDr. Stanislav Krajči, PhD.       FNDr.	<b>Learning outcome</b> To introduce the stu given problem.	es: udent into mos	st important result	ts about non-ex	istence of an algor	ithm for solving
Recommended literature:J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.Motestier Stenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.Ju.V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk, <b> <math>27  (1972)</math>, 185222L. Bukovský, Algoritmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti Novel, PF UPJŠ, Košice, 2003Course language:Notes:Course assessment Total number of assessed students: 23ABCDEFX100.00.00.0EFXDEFXDEFX0.0EFXDEFXDEFXDEFXDEFXDEFXDE<tr< td=""><td>undefinability of tr Algorithmic unsolv deciding the existe of unsolvability.</td><td>ruth in formali vability of par nce of a solut</td><td>zed arithmethic. ticular mathemat ion of Diophantir</td><td>Godel incompl ical problems. I ne equations. R</td><td>etness theorem. Non-existence of a eduction of proble</td><td>an algorithm for ems and degrees</td></tr<></b>	undefinability of tr Algorithmic unsolv deciding the existe of unsolvability.	ruth in formali vability of par nce of a solut	zed arithmethic. ticular mathemat ion of Diophantir	Godel incompl ical problems. I ne equations. R	etness theorem. Non-existence of a eduction of proble	an algorithm for ems and degrees
Course language:Notes:Course assessment Total number of assessed students: 23ABCDEFX100.00.00.00.00.00.0Provides: prof. RNDr. Stanislav Krajči, PhD.	<ul> <li>Recommended literature:</li> <li>J. Barwise ed., Handbook of Mathematical Logic, North Holland 1977S. C. Kleene, Introduction to the Metamathematics, Van Nostrand 1952, ruský preklad Moskva 1957.</li> <li>E. Mendelson, Introduction to Mathematical Logic, Van Nostrand 1963, ruský preklad Nauka Moskva 1976.</li> <li>M. Davis, Hilbert's Tenth Problem is Unsolvable, Amer. Math. Monthly,1973, 233269.</li> <li>Ju.V. Matijasevič, Diofantovy Množestva, Usp. Mat. Nauk,<b> 27</b> (1972), 185222</li> <li>L. Bukovský, Algoritmicky neriešiteľné problémy, učebný text v elektronickej forma na sieti</li> </ul>					
Notes:Course assessment Total number of assessed students: 23ABCDEFX100.00.00.00.00.00.0Provides: prof. RNDr. Stanislav Krajči, PhD.	Course language:	Course language:				
Course assessment Total number of assessed students: 23ABCDEFX100.00.00.00.00.00.0Provides: prof. RNDr. Stanislav Krajči, PhD.	Notes:					
A         B         C         D         E         FX           100.0         0.0         0.0         0.0         0.0         0.0           Provides:         prof.         RNDr.         Stanislav         Krajči, PhD.         E         FX	Course assessment Total number of assessed students: 23					
100.0         0.0         0.0         0.0         0.0           Provides: prof. RNDr. Stanislav Krajči, PhD.         0.0         0.0         0.0	A	В	С	D	Е	FX
Provides: prof. RNDr. Stanislav Krajči, PhD.	100.0	0.0	0.0	0.0	0.0	0.0
	Provides: prof. RN	Dr. Stanislav	Krajči, PhD.			
Date of last modification: 03.05.2015	Date of last modifi	ication: 03.05	.2015			

Approved: prof. RNDr. Viliam Geffert, DrSc.

University: P. J.	. Šafárik Univers	ity in Košice				
Faculty: Faculty	y of Science					
Course ID: KF/ AFS/05	Course ID: KF/       Course name: Ancient Philosophy and Present Times         AFS/05       Course name: Ancient Philosophy and Present Times					
Course type, sc Course type: H Recommended Per week: 2 Po Course metho	ope and the met Practice I course-load (h er study period: d: present	thod: ours): 28				
Number of EC	<b>FS credits:</b> 2					
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2.			
Course level: II	-					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
<b>Course assessment</b> Total number of assessed students: 31						
А	В	С	D	Е	FX	
80.65	80.65 6.45 6.45 0.0 6.45 0.0					
Provides: Doc. PhDr. Peter Nezník, CSc.						
Date of last modification: 17.09.2020						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	of Science					
<b>Course ID:</b> ÚIN APA1/15	INF/ Course name: Approximation algorithms					
Course type, sco Course type: Lo Recommended Per week: 2 / 1 Course method	pe and the met ecture / Practice course-load (h Per study perio : present	thod: ours): od: 28 / 14				
Number of ECT	S credits: 5					
Recommended s	emester/trimes	ster of the cours	<b>e:</b> 3.			
Course level: II.						
Prerequisities:						
Conditions for c	ourse completi	on:				
Learning outcom To learn basic co error probability.	nes: onceptions of ra	andomized algori	ithms and to clas	ssify the algorith	ims due to their	
Brief outline of the Basic notions of the Basic not	he course: Probability Theo thms. One sided s. Two sided ur polynomial tin kimation algori proximation so FPTAS. PTAS.	ory. Basic random d error Monte Ca bounded error M me complexity thm, relative er lutions. Classific TSP problem and	nized computing arlo algorithms. ' Monte Carlo alg and relationship ror, approximat ation of optimisa d its relaxations.	models and its cl Two sided bound orithms. Classes is between then ion ratio. Speci ation problems b Unapproximabil	haracterisations. led error Monte of randomized h. Optimisation al optimisation based upon their ity.	
Recommended I	iterature:					
Course language	2:					
Notes:						
Course assessment Total number of assessed students: 158						
A	В	С	D	Е	FX	
29.11 15.82 19.62 15.82 18.99 0.63						
Provides: prof. RNDr. Gabriel Semanišin, PhD., RNDr. Ondrej Krídlo, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šaf	árik University in Košice
Faculty: Faculty of	Science
<b>Course ID:</b> ÚINF/ UUI1/15	Course name: Artificial Intelligence and Cognitive Science
Course type, scope Course type: Lectu Recommended cou Per week: 2 Per st Course method: pr	and the method: ire irse-load (hours): udy period: 28 resent
Number of ECTS c	redits: 3
Recommended sem	ester/trimester of the course: 2., 4.
Course level: II.	
Prerequisities:	
<b>Conditions for cour</b> home work and writ final exam	se completion: ten tests
<b>Learning outcomes</b> The goal of the cour a student it is possib	: rse is to achieve basic information about artificial intelligence techniques. For le to study more deeply from literature, if needed.
Brief outline of the Goal of artificial into representation in AI informed versus info iterative enhanceme constraint logic pro described objects rec and describtion, ob knowledge systems information), geneti	<b>course:</b> elligence, natural intelligence, edges of agent machine intelligence, knowledge (semantic networks, frames), reasoning. Problem solving in status space - non- ormed deep and wide search, A*, solving of problems described as the game, nt algorithms, problem solving by decomposition. Planning and scheduling, ogramming, machine learning, computer vision - image recognition (flag cognition, structural scene analysis), image preprocessing, image representation bject recognition. Natural language processing, artificial neural networks, (structure, charakteristcs, direct and backward reasoning, working with vague c algorithms, distributed artificial intelligence and multi-agent systems.

#### **Recommended literature:**

Russell S.J., Norvig P: Artificial Intelligence: A Modern Approach (2nd Edition), Prentice Hall, 2002, ISBN: 0137903952

Negnevitsky Michael: Artificial Intelligence: A Guide to Intelligent Systems (2nd Edition), Addison Wesley, 2004, ISBN: 0321204662

Luger George: Artificial Intelligence: Structures and Strategies for Complex Problem Solving (5th Edition), Addison Wesley, 2004, ISBN: 0321263189

#### **Course language:**

Slovak or english

#### Notes:

Content prerequisities:

basic programing, neurobiology, cognitive psychology, or instructor's consent

Course assessment Total number of assessed students: 89							
А	A B C D E FX						
65.17	16.85	12.36	3.37	2.25	0.0		
Provides: doc. 1	Provides: doc. Ing. Norbert Kopčo, PhD.						
Date of last modification: 11.02.2021							
Approved: prof. RNDr. Viliam Geffert, DrSc.							

University: P. J.	Šafárik Univers	sity in Košice					
Faculty: Faculty	of Science						
<b>Course ID:</b> ÚIN AFJ1b/15	Course ID: ÚINF/ AFJ1b/15Course name: Automata and formal languages						
Course type, sco Course type: L Recommended Per week: 2 / 1 Course method	ope and the me ecture / Practice course-load (h Per study per l: present	thod: e oours): ood: 28 / 14					
Number of ECT	S credits: 5						
Recommended	semester/trime	ster of the cours	e: 1.				
Course level: I.,	II.						
Prerequisities:	ÚINF/AFJ1a/15						
Conditions for a Test and oral example.	course complet amination.	ion:					
<b>Learning outco</b> To provide theor knowledge in th	mes: etical backgroun eory of automat	nd for studying co a.	mputer science in	n general, by givii	ng the necessary		
Chomsky and C lemma. Closure sensitive gramm machines. Post c	Greibach norma properties of ars and linearly correspondence	l forms of conte context free and -bounded Turing problem. Undecid	xt free gramars. deterministic c machines. Phras lable problems in	Pushdown auto context free lang e-structure grammers n the theory of for	mata. Pumping guages. Context mars and Turing rmal languages.		
Recommended J.E. Hopcroft, R computation, Ad J. Shallit: A seco 2009. M. Sipser: Intro	literature: Motwani, J.D. ldison-Wesley, 2 ond course in fo duction to the th	Ullman: Introduc 2001. rmal languages a: neory of computat	tion to automata nd automata theo ion, Thomson C	theory, language ory, Cambridge U ourse Technolog	es, and Jniversity press, y, 2006.		
Course languag	e:						
Notes:							
Course assessm Total number of	ent assessed studer	nts: 567					
А	В	С	D	E	FX		
37.92	15.87	19.75	17.64	6.17	2.65		
<b>Provides:</b> prof. I Bednárová, PhD	RNDr. Viliam G	effert, DrSc., Mg	r. Alexander Sza	ıbari, PhD., RND	r. Zuzana		
Date of last mod	lification: 01.0	5.2015					
Approved: prof.	RNDr. Viliam	Geffert, DrSc.					

<b></b>	ă a:		•. • ••			
University: P. J.	Safár	ik Univers	ity in Košice			
Faculty: Faculty	y of Sc	ience				
Course ID: ÚF BSIM1/14	Course ID: ÚFV/ BSIM1/14Course name: Biomolecular Simulations					
Course type, sc Course type: I Recommended Per week: 2 / 2 Course metho	ope ar Lecture l cour 2 Per s d: pres	nd the met e / Practice se-load (h study perio sent	thod: ours): od: 28 / 28			
Number of EC	ГS cre	dits: 5				
Recommended	semes	ter/trimes	ster of the cours	se: 4.		
Course level: I.	, II. –					
Prerequisities:						
<b>Conditions for</b> Elaboration and programs on pro Q/A part.	course presen oject g	e completintation of tiven at the	on: he project on give exercises. Exam	ven actual subje n. Might be subs	ct. Development of stituted by written	f own computer exam including
Learning outco	mes: actual	problemat	ics of biomolecu	ılar simulations.		
Brief outline of Structural chara as flow of biolo mechanisms. E force fields an Carlo methods approaches. Co reactions, free approaches and	the concentration of the conce	ourse: ics of biol nformation nental met hods of c rithms and tional cha y evaluati tic approa	ogical polymers n. 3D-structure a hods of structur lassical molecu paralelization. llenges in bion on, protein fol ches.	. Foldamers. Ce nd function of for re determination lar dynamics. <i>Ab initio</i> holecular simula ding. Computat	ntral dogma of mo oldamers. Recent v n and their limitat Molecular dynam > molecular dynam ations - simulatio tional complexity,	olecular biology view on enzyme ions. Empirical ics and Monte nics and hybrid ns of chemical , nontraditional
Recommended	literat	ture:				
Actual literature	e recor	nmended b	by lecturer.			
Course languag	ge:					
Notes:						
Course assessm Total number of	ent f asses	sed studen	ts: 44			
А		В	С	D	Е	FX
75.0		9.09	11.36	2.27	2.27	0.0
Provides: doc. I	RNDr.	Jozef Ulič	ný, CSc.	1	1	
Date of last mo	dificat	tion: 27.03	5.2020			
Approved: prof	. RND	r. Viliam (	Geffert, DrSc.			

University: P. J. Š	University: P. J. Šafárik University in Košice						
Faculty: Faculty o	of Science						
<b>Course ID:</b> ÚINF/ PSDU/16	SDU/16 Course name: Case studies in data mining						
Course type, scop Course type: Leo Recommended c Per week: 2 / 2 P Course method:	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present						
Number of ECTS	credits: 4						
Recommended se	mester/trimes	ter of the cours	e: 3.				
Course level: II.							
Prerequisities:							
Conditions for co	urse completi	on:					
Learning outcome Solution of practic Knowledge of dat	es: cal problems in a mining meth	n the data mining ods.	garea. Orientation	n in basic terms	of data mining.		
Case study analy methods for autom Solving practical t	sis using data nated analysis o tasks using app	mining method of large data volu propriate software	s in different ap mes and extractio e tools. Testing D	plication areas. on of knowledge f pata Mining Algo	Application of from these data. or these data.		
Recommended lit [1] Zhao, Y., Cen, [2] Han, J. and Ka Kaufmann, Burlin [3] Witten, I.E., Fr Elsevier, 2005.	Recommended literature:         [1] Zhao, Y., Cen, Y.: Data Mining Applications with R. Elsevier Inc. 2014.         [2] Han, J. and Kamber, M.: Data Mining Concepts and Techniques. 3rd Edition, Morgan Kaufmann, Burlington, 2011.         [3] Witten, I.E., Frank, E.: Data Mining: Practical Machine Learning Tools and Techniques, Elsevier 2005						
Course language:							
Notes:							
Course assessment Total number of assessed students: 15							
Α	В	С	D	Е	FX		
100.0	100.0 0.0 0.0 0.0 0.0 0.0						
Provides: doc. RN	IDr. Csaba Tör	ök, CSc., RNDr.	Juraj Šebej, PhD	., RNDr. Erik Br	ruoth, PhD.		
Date of last modif	fication: 26.03	.2019					
Approved: prof. R	RNDr. Viliam (	Geffert, DrSc.					

University: P. J	. Šafárik Univers	ity in Košice				
Faculty: Facult	y of Science					
Course ID: KF/ KDF/05	Course ID: KF/ KDF/05Course name: Chapters from History of Philosophy of 19th and 20th Centuries (General Introduction)					
Course type, sc Course type: I Recommended Per week: 2 Pe Course metho	cope and the met Practice d course-load (h er study period: d: present	thod: ours): 28				
Number of EC	TS credits: 2					
Recommended	semester/trimes	ster of the cours	e: 2.			
Course level: II	-					
Prerequisities:						
Conditions for	course completi	ion:				
Learning outco	omes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
<b>Course assessm</b> Total number of	nent f assessed studen	ts: 10				
А	A B C D E FX					
50.0	50.0 20.0 10.0 0.0 10.0 10.0					
Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof.						
Date of last mo	dification: 03.05	5.2015				
Approved: prof	f. RNDr. Viliam (	Geffert, DrSc.				

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ KKV1/15Course name: Classical and quantum comput	ations
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 3 / 1 Per study period: 42 / 14 Course method: present	
Number of ECTS credits: 6	
<b>Recommended semester/trimester of the course:</b> 1., 3.	
Course level: II.	
Prerequisities:	
<b>Conditions for course completion:</b> Written work Writen and oral examination	
<b>Learning outcomes:</b> To provide information on quantum computer and quantum computer and quantum models and methods.	tations. To compare classical
<b>Brief outline of the course:</b> The basics of classical theory of computation: Turing machine algorithms, probabilistic computation, NP-complete problems, an an algorithm. Introduction of general quantum formalism (pure superoperators), universal gate sets and approximation theorems factoring algorithm, and the Abelian hidden subgroup problem. Par quantum analogue of NP-completeness, and quantum error-correctin	es, Boolean circuits, parallel d the idea of complexity of states, density matrices, and a. Grover's algorithm, Shor's rallel quantum computation, a ng codes.
<ul> <li>Recommended literature:</li> <li>1. BERMAN,G.P., DOOLEN,G.D., MAINIERI, R., TSIFRINOVIC Quantum Computers. World Scientific, 2003.</li> <li>2. GRUSKA, J. Quantum Computing. McGraw-Hill, 1999.</li> <li>3. JOHNSON, G. A Shortcut Through Time: The Path to the Quantu 4. KITAEV, A.Y., SHEN, A.H., VYALYI, M.N. Classical and Quant Mathematical Society, 2002.</li> <li>5. NIELSEN, M.A., CHUANG, I.L. Quantum Computation and Qua Cambridge University Press, 2000.</li> <li>6. HIRVENSALO, M., Quantum Computing, Springer 2004</li> </ul>	, V.I. Introduction to um Computer, Knopf 2003. um Computation. American antum Information.
Course language:	
Notes:	

Course assessn Total number o	nent f assessed studen	ts: 136				
A B C D E FX						
25.0	35.29	13.97	12.5	6.62	6.62	
Provides: prof. RNDr. Gabriel Semanišin, PhD., RNDr. Zuzana Bednárová, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J	. Šafárik Univers	ity in Košice				
Faculty: Facult	Faculty: Faculty of Science					
Course ID: ÚIN KMU1/15	Course ID: ÚINF/ KMU1/15Course name: Coding and multimedial data transition					
Course type, sc Course type: I Recommended Per week: 2 / 2 Course metho	cope and the met Lecture / Practice d course-load (h 1 Per study period: present	thod: ours): od: 28 / 14				
Number of EC	TS credits: 4					
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1., 3.			
Course level: I.	, II.					
Prerequisities:						
<b>Conditions for</b>	course completi	on:				
Learning outco	omes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessm Total number of	nent f assessed studen	ts: 18				
А	A B C D E FX					
33.33 5.56 22.22 22.22 16.67 0.0						
Provides: doc. RNDr. Jozef Jirásek, PhD.						
Date of last mo	dification: 03.05	5.2015				
Approved: prof	f. RNDr. Viliam (	Geffert, DrSc.				

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚMV/ KOA/10	Course name: Combinatorial algorithms
Course type, scope a Course type: Lectur Recommended cour Per week: 3 / 1 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 42 / 14 esent
Number of ECTS cr	edits: 6
Recommended seme	ster/trimester of the course: 2., 4.
Course level: II.	
Prerequisities:	
<b>Conditions for cours</b> Evaluation is based o	e completion: on working out the seminar work and on passing the oral examination.
Learning outcomes: Mastered an ability t discrete mathematics algorithm correctness	o understand the close tie between the theoretical and algorithmic aspects of and to show how algorithms can be extacted from theorems. Ability in proving 5.
Brief outline of the c Introduction to graph Introduction to algo algorithms. NP-comp Trees and rooted tree Distance in graphs. S capacity path. The pa Location centres and Networks: An introdu Matchings: Maximus Transportation and as Eulerian graphs and C Hamiltonian graphs.	ourse: s. orithms and complexity. Sorting algorithms. Search algorithms. Greedy oleteness. s. Generating all spanning trees of a graph. Minimum spanning tree problem. Shortest path problem and its analogues. The most reliable path. The largest th with the largest expected capacity. medians. action to networks, the max-flow min-cut theorem. Related problems. matchings in bipartite graphs. Maximum matchings in general graphs. ssignment problems. Chinese postman's problem. Travelling salesman problem.
Recommended litera 1. G. Chartrand, O.R New York 1993. 2. N. Christofides: G (Russian translation f 3. D. Jungnickel: Gra 4. J. Plesník: Grafové 5. M. N. S. Swamy, H New York 1981.	iture: Vellermann: Applied and Algorithmic Graph Theory, McGraw-Hill, Inc. raph Theory - An Algorithmic Approach, Academic Press, New York 1975 from 1978). uphs, Networks, and Algorithms, Springer-Verlag Berlin 2005. algoritmy, Veda Bratislava 1983. K. Thulasiraman: Graphs, networks, and algorithms. John Wiley and Sons,
Course language:	

Slovak					
Notes:					
Course assessm Total number o	nent f assessed studen	ts: 85			
А	В	С	D	Е	FX
38.82	27.06	21.18	8.24	3.53	1.18
Provides: doc.	RNDr. Jaroslav Iv	vančo, CSc., RNI	Dr. Mária Macek	ová, PhD.	
Date of last mo	dification: 13.02	2.2019			
Approved: prot	f. RNDr. Viliam (	Geffert, DrSc.			

University: P. J. Šafá	University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	cience				
<b>Course ID:</b> KPPaPZ/KK/07	Course ID: KPPaPZ/KK/07Course name: Communication and Cooperation				
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of ECIS cr	edits: 2				
Recommended seme	ster/trimes	ster of the course: 3.			
Course level: 11.					
Prerequisities:					
Conditions for cours	e completi	on:			
Learning outcomes:					
Brief outline of the c	ourse:				
Recommended litera	iture:				
Course language:					
Notes:					
Course assessment Total number of assessed students: 281					
abs n z					
98.22 1.78 0.0					
Provides: Mgr. Ondrej Kalina, PhD., Mgr. Lucia Barbierik, PhD.					
Date of last modifica	Date of last modification: 16.02.2021				
Approved: prof. RNI	Dr. Viliam (	Geffert, DrSc.			

University: P. J.	Šafárik Univers	sity in Košice				
Faculty: Faculty	y of Science					
<b>Course ID:</b> ÚIN TVY/15	<b>D:</b> ÚINF/ <b>Course name:</b> Computability theory					
Course type, sc Course type: I Recommended Per week: 2 / 1 Course method	ope and the me Lecture / Practice I course-load (h Per study peri d: present	thod: e iours): od: 28 / 14				
Number of ECT	<b>FS credits:</b> 4					
Recommended	semester/trime	ster of the cours	e: 1., 3.			
Course level: I.,	, II.					
Prerequisities:						
Conditions for	course complet	ion:				
<b>Learning outco</b> To provide theo students with ba	mes: oretical backgro asic knowledge o	und for studying of the theory of co	computer scie	nce in general,	by familiarising	
Brief outline of Turing machine Kleene's norma machine, partial the halting prob	the course: e as a formalisa l form theorem. l recursive and c lem of a Turing	tion of the notion The equivalences alculable by a cont machine and a cont	on of an algorit of the notion of mputer program omputer program	thm. Partial recuing a function calculur. Algorithmical un	ursive functions. lable by a Turing undecidability of	
<b>Recommended</b> MACHTEY, M Holland, Amste BRIDGES, D. S	<b>literature:</b> . and YOUNG, I rdam 1978. S.: Computabilit <u>y</u>	P.: An Introductio y, A Mathematica	n to the General l Sketch book, S	Theory of Algo SpringerVerlag	rithms, North 1994	
Course languag	ge:					
Notes:						
Course assessm Total number of	ent f assessed studer	nts: 277				
А	В	C	D	Е	FX	
46.93	46.93 11.91 13.0 5.78 6.14 16.25					
Provides: prof.	RNDr. Stanislav	Krajči, PhD.		<u>.</u>	··	
Date of last mo	dification: 03.03	5.2015				
Approved: prof	. RNDr. Viliam	Geffert, DrSc.				
	,					

University: P. J. Safái	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚINF/ VKN/15	Course name: Computational and cognitive neuroscience
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 28 esent
Number of ECTS cro	edits: 5
Recommended seme	ster/trimester of the course: 1., 3.
Course level: II.	
Prerequisities:	
<b>Conditions for cours</b> project, exam	e completion:
Learning outcomes: Advanced topics in with focus on compu Prerequisite: Intro to	study of the central nervous system and cognitive processes in human, atational concepts important in the study of cognitive and neural sciences. Neurosicence
<b>Brief outline of the c</b> Selected topics in co methods of theoretica and system-theory pr models of the human plasticity.	ourse: ognitive science (following up on Intro to Neuroscience). Overview of the al study in cognitive and neural science, including connectionistic, statistical rinciples in modeling of cognitive processes and neural circuits. Selected visual and auditory systems, learning, thinking, attention, development and
Recommended litera HERTZ, J., KROGH, Addison-Wesley 1992 KANDEL, E. R., SCI McGraw-Hill, 2000 DAYAN, P. and ABB Modeling of Neural S	A. and PALMER R. G.: Introduction to the theory of neural computation. HWARTZ, J. H. and JESSELL, T.M.: Principles of Neural Science. OTT, L. F.: Theoretical Neuroscience – Computa-tional and Mathematical Systems. MIT Press, 2001
<b>Course language:</b> Slovak or English	
<b>Notes:</b> Content prerequisites basics of neurobiolog	: y, cognitive psychology, linear algebra and differential equations,

Course assessm Total number o	nent f assessed studen	ts: 8				
A B C D E FX						
50.0	12.5	25.0	12.5	0.0	0.0	
Provides: doc. Ing. Norbert Kopčo, PhD.						
Date of last modification: 10.02.2021						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šafá	urik University in Košice			
Faculty: Faculty of S	Science			
<b>Course ID:</b> ÚINF/ VYZ1/15	Irse ID: ÚINF/       Course name: Computational complexity         Z1/15       Course name: Computational complexity			
Course type, scope a Course type: Lectu Recommended cou Per week: 2 Per stu Course method: pr	ind the method: re rse-load (hours): idy period: 28 esent			
Number of ECTS cr	redits: 4			
Recommended seme	ester/trimester of the course: 1.			
Course level: II.				
Prerequisities:				
<b>Conditions for cour</b> Oral examination.	se completion:			
Learning outcomes: To give the students completeness.	the theoretical background in computational complexity and theory of NP-			
Brief outline of the of Deterministic and Deterministic simula Another NP-comple satisfiability, 3-colo balancing, Space Savitch theorem. Clo Complete problems	<b>course:</b> nondeterministic algorithms with polynomial time, NP-completeness. tion of a nondeterministic Turing machine. Satisfiability of Boolean formulae. te problems: satisfiability of a formula in a conjunctive normal form, 3- rability of a graph, 3-colorability of a planar graph, knapsack problem, bounded computations, classes L, NL, PSPACE. Deterministic simulation - osure under complement. for classes NL, P, and PSPACE.			
Recommended liter	ature:			
<ol> <li>J.E. Hopcroft, R.M. computation, Addisc</li> <li>M. Sipser: Introdu</li> <li>L.A.Hemaspaandr</li> <li>computer science, Sp</li> <li>S. Arora, B. Barak</li> <li>2009. 5. G.Brassard,</li> <li>D.P.Bovet, P.Cress</li> <li>C. Calude and J. H</li> </ol>	<ul> <li>Aotwani, J.D. Ullman: Introduction to automata theory, languages, and in-Wesley, 2007.</li> <li>action to the Theory of Computation, Thomson, 2nd edition, 2006.</li> <li>a, M.Ogihara: Complexity theory companion, EATCS series, texts in pringer-Verlag, 2002.</li> <li>actional Complexity: A Modern Approach, Cambridge Univ. Pess, P.Bradley: Fundamentals of algorithmics, Prentice Hall, 1996.</li> <li>cenzi: Introduction to the theory of complexity, Prentice Hall, 1994.</li> <li>Hromkovič: Complexity: A Language-Theoretic Point of View, in G.</li> </ul>			

#### **Course language:**

Slovak or english

#### Notes:

Content prerequisities:

Basic notions from the theory of automata and formal languages.

Basic skills in programming and design of algorithms (in any programming language). Basics knowledge in mathematical logic, set theory, and graph theory.

	0	8,	<i>J</i> , <i>U</i> I	5		
Course assessment						
Total number o	Total number of assessed students: 334					
A B C D E FX						
57.78	15.57	11.68	7.19	7.49	0.3	
Provides: prof. RNDr. Viliam Geffert, DrSc.						
Date of last modification: 22.02.2021						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P J Šafá	rik University in Košice			
Faculty: Faculty of Science				
Course ID: ÚINF/ ARP1/15	Course name: Computer architecture			
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 1 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 14 esent			
Number of ECTS cro	edits: 4			
Recommended seme	ster/trimester of the course: 2., 4.			
Course level: I., II.				
Prerequisities:				
<b>Conditions for cours</b> Homeworks, active pa	e completion: articipation in laboratory exercises, final written exam. Final oral examination.			
Obtain detailed infor Understand the princi Gain basic experience Understand the curre acquainted with the co operation and possibi of computer equipme including setting ther	rmation about the technical implementation of modern computer systems. ples of organization of work of processor and computer on concrete examples. with programming at the level of machine instructions (Assembler language). ent way a computer communicates with I / O devices. Students will get omponents of current computers, with their properties, connection, principle of lities of use. They will be able to make informed decisions about the purchase ent, identify computer failures; make simpler repairs by replacing modules, n correctly.			
Brief outline of the c Milestones in comput the implementation of organization, RAMs The microarchitectur architecture level, dat cache memory. I/O c processor virtualizati Laboratory practices	ourse: ter organization, fundamental limitations. The representation of numbers and of floating point arithmetic. Combinatorial and sequential circuits, memory and ROMs. Digital logic level architecture, data path timing, machine cycle. e level, microinstructions and microinstruction control. The instruction set a types, addressing modes, instruction types. Instruction execution, pipelining, controllers, ports, interrupts, direct memory access. Multicore architectures, on. Device drivers, operating system kernel, device-independent software. and tutorials.			
Recommended litera 1. W. Stallings: Comp 2. J. Ledin: Modern C 3. E. Upton, J. Dunte with Raspberry Pi, W	<b>ture:</b> Duter Organization and Architecture, Pearson, 2018 Computer Architecture and Organization, Packt Publishing, 2020 mann, R. Roberts, T. Mamtora, B. Everard: Learning Computer Architecture Filey, 2016			
Course language: Slovak or English				
Notes:				

Content prerequisities: understanding of fundamental concepts of computer architecture and design within the scope of a standard undergraduate course. The course is not organized annually.

Course assessment Total number of assessed students: 58					
A B C D E FX					
17.24	18.97	17.24	20.69	18.97	6.9
Provides: doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 26.02.2021					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J. Šafárik University in Košice
Faculty: Faculty of Science
Course ID: ÚINF/ MSSI/15Course name: Computer science II.
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present
Number of ECTS credits: 4
Recommended semester/trimester of the course:
Course level: II.
<b>Prerequisities:</b> ((ÚINF/KRP1/15 and leboÚINF/ARP1/15),ÚINF/OPS1/15) and lebo(ÚINF/ LAD1/15,ÚINF/AIS1/15) and lebo(ÚINF/STU1/16,(ÚINF/NEU1/15 and leboÚINF/VKN/15)) and lebo((ÚINF/KKV1/15 and leboÚINF/KKV1/21),ÚMV/KOA/10)
Conditions for course completion:
Learning outcomes:
Brief outline of the course:
Recommended literature:
Course language:
Notes:
Course assessment Total number of assessed students: 42
A B C D E FX
47.62 14.29 26.19 7.14 4.76 0.0
Provides:
Date of last modification: 12.05.2020
Approved: prof. RNDr. Viliam Geffert, DrSc.

University: P. J. Safa	rik University in Kosice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚINF/ KRP1/15	Course name: Cryptographic protocols
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 2 Per Course method: pro Number of ECTS cr	ind the method: re / Practice rse-load (hours): study period: 28 / 28 esent redits: 4
Recommended seme	ester/trimester of the course: 1., 3.
Course level: I., II.	
Prerequisities:	
<b>Conditions for cours</b> Homeworks, active p seminar. Final written	se completion: participation in laboratory exercises, presentation of a selected topic at a course n exam.
Learning outcomes: Understand the prob management. Know correctness. Control cryptographic techni electronic voting. Or	lems of designing secure cryptographic protocols for authentication and key the ways to compromise them and be able to apply methods of proving their some automated verification tools. Understand and be able to apply advanced ques in various application fields - signature schemes, electronic banking, ientation in current problems of implementation of cryptographic protocols.
Brief outline of the c Authentication and k protocols, conference architecture and for verification. Digital s The final seminar w voting, secure comm	course: tey establishment using shared and public key cryptography, key agreement te key agreement, zero-knowledge protocols, provable security. Protocol rmal definition, goals for authentication and key establishment, formal signature, implementation, trust distribution. ith presentations on selected current topics - electronic banking, electronic unication

#### **Recommended literature:**

1. Colin Boyd, Anish Mathuria: Protocols for Authentication and Key Establishment, Springer, 2020

2. Douglas R. Stinson, Maura B. Paterson: Cryptography: Theory and Practice, Fourth Edition, Chapman & Hall/CRC, 2018

Paul C. van Oorschot: Computer Security and the Internet: Tools and Jewels, Springer, 2020
 Peter Ryan, Steve Schneider: Modeling and Analysis of Security Protocols, Addison-Wesley, 2001

Course language:

Slovak or English

Notes:

Content prerequisities: understanding of fundamental cryptographic concepts and primitives (as taught in the course KRS/15 or in the scope of the textbook "Understanding Cryptography" by Christof Paar and Jan Pelzl).

The course is not organized annually.

Course assessment Total number of assessed students: 21					
A B C D E FX					
38.1	4.76	19.05	19.05	14.29	4.76
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 22.02.2021					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of Science				
<b>Course ID:</b> ÚINF/ KRS/15	Course name: Cryptographic systems and their applications			
Course type, scope a Course type: Lectur Recommended cour Per week: 3 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 42 / 28 esent			
Number of ECTS cr	edits: 6			
Recommended seme	ster/trimester of the course: 1.			
Course level: I., II.				
Prerequisities:				
<b>Conditions for cours</b> Homeworks, midtern Final written exam, p	e completion: n written exam, active participation in laboratory exercises. cossibly oral exam.			
This course covers the is on definitions, theory practice. Topics inclu- block cipher design a an introduction to cry and certificates.	e basic knowledge in understanding and using cryptography. The main focus oretical foundations, and rigorous proofs of security, with some programming ide symmetric and public key encryption, message integrity, hash functions, and analysis, number theory, and digital signatures. The course also provides optographic protocols for authentication and key management, including PKI			
Brief outline of the c Classical cryptograp Symmetric ciphers - ciphers - RSA, Elga codes, digital signatu	<b>ourse:</b> hy, basic information theory, cryptoanalysis, security of classical ciphers. stream ciphers, block ciphers (DES, AES), modes of operation. Asymmetric mal, elliptic curve cryptosystems. Hash functions, message authentication res. Authentication, key establishment and distribution, certificates.			
Recommended litera 1. PAAR, Ch., PELZ 2. STINSON, D. R. 3. MAO, W. Modern 4. MENEZES, A., O CRC Press, 1996. 5. SCHNEIER, B.: A	<b>ture:</b> L, J.: Understanding Cryptography, Springer 2010. PATERSON, M. B.: Cryptography: Theory and Practie. CRC Press, 2018. Cryptography: Theory and Practice. Prentice Hall, 2003. ORSCHOT, P. van, VANSTONE, S.: Handbook of Applied Cryptography. .pplied Cryptography, 20th Edition, John Wiley & Sons Inc., 2015			
<b>Course language:</b> Slovak or English				
Notes: Content prerequisitie	s: basic number theory and algebra, basic programming			

Course assessment Total number of assessed students: 112					
A B C D E FX					
12.5	9.82	13.39	13.39	33.04	17.86
Provides: RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 22.02.2021					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

Faculty: Faculty of Science         Course ID: ÚINF/         Course name: Development of web-oriented database applications         TDB1/15         Course type, scope and the method:         Preved: 28         Course method: present         Number of ECTS credits: 2       Prevequisities:         Conditions for course completion:       Work on a project.         Prevention of a project.       Prevention of a project.         Learning outcomes:         To le				
Course ID: ÚINF/ TDB1/15       Course name: Development of web-oriented database applications         Course type, scope and the method: Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present         Number of ECTS credits: 2         Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Work on a project.         Presentation of a project.         Learning outcomes:         To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
Course type, scope and the method:         Course type: Practice         Recommended course-load (hours):         Per week: 2 Per study period: 28         Course method: present         Number of ECTS credits: 2         Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Conditions for course completion:         Work on a project.         Presentation of a project.         Learning outcomes:         To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
Number of ECTS credits: 2         Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Conditions for course completion:         Work on a project.         Presentation of a project.         Learning outcomes:         To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Conditions for course completion:         Work on a project.         Presentation of a project.         Itearning outcomes:         To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
Course level: II. Prerequisities: Conditions for course completion: Work on a project. Presentation of a project. Learning outcomes: To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
Prerequisities:         Conditions for course completion:         Work on a project.         Presentation of a project.         Learning outcomes:         To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
Conditions for course completion: Work on a project. Presentation of a project. Learning outcomes: To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
<b>Learning outcomes:</b> To learn modern methods for a development of web-oriented applications with emphasis on database server ORACLE and programming techniques in JAVA.				
<b>Brief outline of the course:</b> Oracle SQL Data Manipulation Language. Oracle SQL Data Definition Language. Oracle PL/SQL. Java JDBC API Java Database Connectivity. Java JDBC API. Java JSP. JSTL.				
Recommended literature: 1. http://www.oracle.com				
Course language:				
Notes:				
Course assessment Total number of assessed students: 1				
A B C D E FX				
0.0 0.0 100.0 0.0 0.0 0.0				
Provides: doc. RNDr. Csaba Török, CSc.				
Date of last modification: 03.05.2015				
Approved: prof. RNDr. Viliam Geffert, DrSc.				

University: P. J. Šafá	rik University in Košice				
Faculty: Faculty of S	cience				
<b>Course ID:</b> ÚINF/ DIPa/18	ourse ID: ÚINF/Course name: Diploma thesis projectIPa/18				
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent				
Number of ECTS cr	edits: 2				
Recommended seme	ster/trimester of the cours	e: 2.			
Course level: II.					
Prerequisities:	Prerequisities:				
Conditions for cours	e completion:				
Learning outcomes:					
Brief outline of the c	ourse:				
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 31					
	abs n				
100.0 0.0					
<b>Provides:</b> RNDr. JUL Miroslav Opiela, PhD Antoni, PhD., doc. In	Dr. Pavol Sokol, PhD., doc. D ., RNDr. Ondrej Krídlo, Ph g. Norbert Kopčo, PhD.	RNDr. Gabriela Andrejková, CSc., RNDr. D., RNDr. Peter Gurský, PhD., RNDr. Ľubomír			
Date of last modification: 15.01.2019					
Approved: prof. RNI	Approved: prof. RNDr. Viliam Geffert, DrSc.				
University: P. J. Šafá	rik University in Košice				
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Faculty: Faculty of S	Faculty: Faculty of Science				
<b>Course ID:</b> ÚINF/ DIPb/18	Course name: Diploma th	esis project			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of ECTS cro	edits: 2				
Recommended seme	ster/trimester of the cours	<b>e:</b> 3.			
Course level: II.					
Prerequisities:					
Conditions for cours	e completion:				
Learning outcomes:					
Brief outline of the c	ourse:				
<b>Recommended litera</b>	iture:				
Course language:					
Notes:					
<b>Course assessment</b> Total number of asses	Course assessment Total number of assessed students: 33				
	abs	n			
93.94 6.06					
<b>Provides:</b> doc. RNDr. Gabriela Andrejková, CSc., doc. RNDr. Jozef Jirásek, PhD., prof. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD., RNDr. JUDr. Pavol Sokol, PhD., RNDr. Ľubomír Antoni, PhD., RNDr. Peter Gurský, PhD., doc. Ing. Norbert Kopčo, PhD.					
Date of last modification: 15.01.2019					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	of Science					
Course ID: ÚINF/ DPO/15Course name: Doctoral Thesis and its Defence						
Course type, sc Course type: Recommended Per week: Per Course method	ope and the met l course-load (h · study period: d: present	thod: ours):				
Number of EC	IS credits: 20					
Recommended	semester/trimes	ster of the cours	e:			
<b>Course level:</b> II	•					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessm Total number of	ent fassessed studen	ts: 42				
Α	В	С	D	Е	FX	
54.76	54.76 16.67 21.43 7.14 0.0 0.0					
Provides:					I	
Date of last mo	dification: 03.05	5.2015				
Approved: prof	RNDr. Viliam (	Geffert, DrSc.				

University: P. J.	University: P. J. Šafárik University in Košice					
Faculty: Faculty	y of Science					
Course ID: ÚINF/ FAN/15Course name: Forensic analysis						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present						
Number of EC	I S credits: 4		2 4			
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2., 4.			
Course level: 1.	, II.					
Prerequisities:	UINF/BPD1/15					
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 19						
А	В	С	D	Е	FX	
26.32	26.32 36.84 21.05 10.53 5.26 0.0					
Provides: RNDr. JUDr. Pavol Sokol, PhD.						
Date of last mo	dification: 03.05	5.2015				
Approved: prof	. RNDr. Viliam (	Geffert, DrSc.		_		

Faculty: Faculty of Science         Course ID: ÚINF/ FO1/15       Course name: Formal languages and automata         Course type, scope and the method: Course type: Lecture / Practice       Course type: Lecture / Practice         Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present       Course type: Lecture / Practice         Number of ECTS credits: 5       Recommended semester/trimester of the course: 1.         Course level: II.       Prerequisities:         Conditions for course completion:       Learning outcomes:         To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.         Brief outline of the course:       Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Contextsensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.         Recommended literature:       Presentive:	University: P. J. Šafá	University: P. J. Šafárik University in Košice					
Course ID: ÚINF/ FOI/15       Course name: Formal languages and automata         Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present         Number of ECTS credits: 5         Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.         Brief outline of the course:         Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.         Recommended literature:	Faculty: Faculty of S	Faculty: Faculty of Science					
Course type, scope and the method:         Course type: Lecture / Practice         Recommended course-load (hours):         Per week: 2 / 1 Per study period: 28 / 14         Course method: present         Number of ECTS credits: 5         Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.         Brief outline of the course:         Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.         Recommended literature:	<b>Course ID:</b> ÚINF/ FO1/15	Course name: Formal languages and automata					
Number of ECTS credits: 5         Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.         Brief outline of the course:         Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.         Recommended literature:	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present						
Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.         Brief outline of the course:         Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.         Recommended literature:	Number of ECTS cr	edits: 5					
Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.         Brief outline of the course:         Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.         Recommended literature:	Recommended seme	ester/trimes	ster of the course	<b>e:</b> 1.			
Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.         Brief outline of the course:         Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.         Recommended literature:	Course level: II.						
Conditions for course completion: Learning outcomes: To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata. Brief outline of the course: Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context- sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages. Recommended literature:	Prerequisities:						
<ul> <li>Learning outcomes: To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.</li> <li>Brief outline of the course: Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.</li> <li>Recommended literature:</li> </ul>	Conditions for cours	se completi	on:				
<ul> <li>Brief outline of the course:</li> <li>Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.</li> <li>Recommended literature:</li> </ul>	Learning outcomes: To provide theoretica knowledge in theory	l backgrour of automat	nd for studying con a.	nputer science	in general, by give	ing the necessary	
Recommended literature:	Brief outline of the of Greibach normal str sensitive grammars a machines. Space bo correspondence prob	course: ucture of c ind linearly- ounded mad lem. Undec	contextfree grama bounded Turing i chines. Phrase-st idable problems i	ars.Determinist machines. Dete ructure gramm in the theory of	ic pushdown aut rministic linearly nars and Turing formal language	omata. Context- bounded Turing machines. Post s.	
	Recommended litera	ature:					
Course language:	Course language:						
Notes:							
Course assessment Total number of assessed students: 11							
A B C D E FX	Α	В	С	D	Е	FX	
36.36 36.36 18.18 9.09 0.0 0.0	36.36						
Provides: prof. RNDr. Viliam Geffert, DrSc., Mgr. Alexander Szabari, PhD.							
Date of last modification: 03.05.2015	Date of last modifica	ation: 03.05	5.2015				
Approved: prof. RNDr. Viliam Geffert, DrSc.	Approved: prof. RN	Dr. Viliam (	Geffert, DrSc.				

University: P. J.	University: P. J. Šafárik University in Košice				
Faculty: Faculty	y of Science				
Course ID: ÚIN VEP1/15	Course ID: ÚINF/ Course name: Formal methods in a verification /EP1/15				
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of EC	I'S credits: 5				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2.		
<b>Course level:</b> II	•				
Prerequisities:					
Conditions for	course completi	on:			
Learning outco	mes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	ge:				
Notes:					
Course assessment Total number of assessed students: 39					
А	В	С	D	Е	FX
35.9 28.21 15.38 12.82 2.56 5.13					
Provides: doc. RNDr. Gabriela Andrejková, CSc., Mgr. Alexander Szabari, PhD.					
Date of last mo	dification: 03.05	5.2015			
Approved: prof	. RNDr. Viliam (	Geffert, DrSc.			

<b>Faculty:</b> Faculty of S <b>Course ID:</b> ÚINF/ ZNA1/15	Science Course na						
<b>Course ID:</b> ÚINF/ ZNA1/15	Course na						
	Course name: Foundations of knowledge systems						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present							
Number of ECTS cr	edits: 4						
Recommended seme	ester/trimes	ster of the cours	e: 2.				
Course level: II.							
Prerequisities:							
Conditions for cour	se completi	on:					
<b>Learning outcomes:</b> The goal is to teach s in database and know	<b>Learning outcomes:</b> The goal is to teach students some advanced applications of logic into computer science, especially in database and knowledge systems.						
usability. SLD-resol deductive databases Concept Analysis (F decomposition, facto	Lution and Logic and CA). Basic prisation. Int	query, SLD tree l expert systems notions of Fuzzy percontextual stru	es. Logic and Basic notions logic and Fuzzy ctures, bonds.	databases, relation of Lattice Theorem	onal databases, bry and Formal A. Optimal table		
Recommended literature: Shawn Hedman. A first course in logic: An introduction to model theory, proof theory, computability and complexity. Oxford university press, ISBN 0–19–852980–5, 2006. Shan-Hwei Nienhuys-Cheng, Ronald de Wolf. Foundations of Inductive Logic Programming. Springer-Verlag, ISBN 3-540-62927-0, 1997. Kristian Kersting. An Inductive Logic Programming Approach to Statistical Relational Learning, IOS Press, ISBN 1-58603-674-2, 2006. Nilsson U., Maluszynski J.: Logic, Programming and Prolog, John Wiley & Sons Ltd. 1995. Bělohlávek R.: Fuzzy Relational Systems: Foundations and Principles. Kluwer, Academic/ Plenum Publishers, New York, 2002. Ganter B., Wille R.: Formal Concept Analysis: Mathematical Foundations, Springer Berlin, 1999.							
Course language:							
Notes:							
Course assessment Total number of assessed students: 65							
A	В	С	D	Е	FX		
49.23	4.62	21.54	9.23	9.23	6.15		

Provides: prof. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD.

**Date of last modification:** 03.05.2015

Faculty: Faculty of Science

Course ID: ÚMV/	Course name: Function of real variables
FRPb/19	

# Course type, scope and the method:

Course type: Lecture / Practice

**Recommended course-load (hours): Per week:** 4 / 3 **Per study period:** 56 / 42

Course method: present

Number of ECTS credits: 8

#### Recommended semester/trimester of the course: 2.

Course level: I., II.

**Prerequisities:** ÚMV/FRPa/19 and leboÚMV/MZIb/10

#### **Conditions for course completion:**

Ongoing evaluation takes the form of small tests, projects and two main online tests during the semester. Overall evaluation is given by ongoing evaluation (60%), written and oral part of the exam (40%).

#### Learning outcomes:

The course provides students the basics of mathematical analysis necessary to study physics and computer science and related fields. The students also learn mathematical culture, notation and mathematical way of thinking and expression.

#### Brief outline of the course:

#### **Recommended literature:**

 B. Mihalíková, J. Ohriska: Matematická analýza 1, 2, vysokoškolský učebný text, UPJŠ v Košiciach, Košice, 2000, 2007.
 L. Kluvánek, I. Mišík, M. Švec: Matematika I, II, SVTL, Bratislava, 1959.
 Z. Došlá, O. Došlý: Diferenciální počet funkcí více proměnných, vysokoškolský učebný text, Masarykova univerzita v Brne, Brno, 2003.
 J. Kopáček: Matematická analýza nejen pro fyziky I, II, Matfyzpress, Praha, 2004, 2007.
 J. C. Robinson: An introduction to ordinary differential equations, Cambridge University Press, Cambridge, 2004.
 R. E. Williamson, H. F. Trotter: Multivariable mathematics, Prentice Hall (Pearson), Upper Saddle River, 2004.
 B. S. Thomson, J. B. Bruckner, A. M. Bruckner: Elementary real analysis, Prentice Hall (Pearson), Lexington, 2008.

#### **Course language:**

Notes:

#### Course assessment

Total number of assessed students: 479

А	В	С	D	Е	FX	
9.39	10.86	14.2	22.13	36.74	6.68	
Provides: Mgr. Jozef Kisel'ák, PhD., RNDr. Jaroslav Šupina, PhD.						
Date of last modification: 31.03.2020						

University: P. J.	University: P. J. Šafárik University in Košice					
Faculty: Facult	y of Science					
Course ID: KF/ DF2p/03	Course na	Course name: History of Philosophy 2 (General Introduction)				
Course type, sc Course type: I Recommended Per week: 2 / 1 Course metho	ope and the met Lecture / Practice d course-load (h l Per study perio d: present	thod: ours): od: 28 / 14				
Number of EC	<b>TS credits:</b> 4					
Recommended	semester/trimes	ster of the cours	e:			
Course level: I.	, II.					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	omes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	Course language:					
Notes:	Notes:					
Course assessment Total number of assessed students: 739						
А	В	С	D	Е	FX	
60.89	60.89 13.8 12.58 8.66 3.38 0.68					
Provides: Doc. PhDr. Peter Nezník, CSc.						
Date of last mo	dification: 25.03	3.2020				
Approved: prof	. RNDr. Viliam (	Geffert, DrSc.				

University: P. J	. Šafárik Univers	ity in Košice				
Faculty: Facult	y of Science					
Course ID: KF/ IH2/03	urse ID: KF/       Course name: Idea Humanitas 2 (General Introduction)         2/03       2/03					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of EC	<b>FS credits:</b> 2					
Recommended	semester/trimes	ster of the cours	<b>e:</b> 3.			
Course level: II	•					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 9						
А	В	С	D	Е	FX	
88.89 11.11 0.0 0.0 0.0 0.0						
Provides: Doc. PhDr. Peter Nezník, CSc.						
Date of last mo	dification: 12.02	2.2021				
Approved: prof	Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J.	University: P. J. Šafárik University in Košice					
Faculty: Faculty	of Science					
Course ID: ÚINF/ ANO/15Course name: Image analysis						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present						
Number of EC	<b>FS credits:</b> 4					
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1., 3.			
Course level: I.,	, II.					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 25						
А	В	С	D	Е	FX	
12.0	12.0 20.0 24.0 8.0 36.0 0.0					
Provides: doc. Ing. Zoltán Tomori, CSc., doc. RNDr. Jozef Jirásek, PhD.						
Date of last mo	dification: 03.05	5.2015				
Approved: prof	. RNDr. Viliam (	Geffert, DrSc.				

University: P. J.	Šafárik Univer	sity in Košice					
Faculty: Faculty	y of Science						
<b>Course ID:</b> ÚIN MIN1/15	NF/ Course n	ame: Informatics	for medicine				
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present							
Number of EC	<b>FS credits:</b> 2						
Recommended	semester/trime	ster of the cours	<b>e:</b> 3.				
Course level: I.,	, II.						
Prerequisities:							
<b>Conditions for</b> Oral and writter	<b>course complet</b> n exam	ion:					
<b>Learning outco</b> To present an ap conditions for s	mes: pplication of cor o-called safety-r	mputer science in relevant domain.	medicine doma	in with emphasis	s on the specific		
Brief outline of Software devel MS .NET, C#, used software to RationalRose, F company mange	the course: opment go me C++. Developm ools: RequisitePro, UI ement according	dicine domain ( ent based on so- TA, Caliber, Clea to CMMI metho	radiotherapy an called "V" deve rCase. Quality a dology.	d ultrasound). S lopment model. A and process mana;	yngo platform, An overview of gement and SW		
Recommended http://www.syng http://www.sien	literature: go.com nens.com						
Course language:							
Notes:							
Course assessment Total number of assessed students: 80							
Α	В	C	D	E	FX		
76.25	76.25 23.75 0.0 0.0 0.0 0.0						
Provides: doc. I	Provides: doc. RNDr. Gabriela Andrejková, CSc.						
Date of last mo	dification: 03.0	5.2015					
Approved: prof	. RNDr. Viliam	Geffert, DrSc.					

University: P. J.	Šafárik Univers	ity in Košice					
Faculty: Faculty	of Science						
Course ID: ÚINF/ MIN2/15Course name: Informatics for medicine							
Course type, sco Course type: P Recommended Per week: 2 Pe Course method	ope and the met Practice I course-load (h er study period: d: present	thod: ours): 28					
Number of ECT	<b>S credits:</b> 3						
Recommended	semester/trimes	ster of the cours	<b>e:</b> 4.	_			
Course level: I.,	II.						
Prerequisities: 1	ÚINF/MIN1/15						
Conditions for a	course completi	on:					
Learning outco	mes:						
Brief outline of	the course:						
Recommended	literature:						
Course languag	e:						
Notes:	,						
Course assessment Total number of assessed students: 5							
Α	В	С	D	Е	FX		
60.0	60.0 0.0 20.0 0.0 20.0 0.0						
Provides: doc. RNDr. Gabriela Andrejková, CSc.							
Date of last modification: 03.05.2015							
Approved: prof.	. RNDr. Viliam (	Geffert, DrSc.					

University: P. J.	Šafárik Univers	ity in Košice					
Faculty: Faculty	of Science						
<b>Course ID:</b> ÚIN AIS1/15	IF/ Course na	ame: Information	systems archite	ecture			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present							
Number of ECT	<b>FS credits:</b> 4						
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2.				
Course level: II	•						
Prerequisities:							
<b>Conditions for</b> Work on project Written and ora	<b>course completi</b> t. l examination	on:					
<b>Learning outco</b> To provide an o introduce the fu	<b>mes:</b> overview of the ndamental princ	modern method iples of conceptu	ologies of infor al modelling of	mation system de	evelopment. To ms.		
System, informa model of the are life cycle based marking models Taxonomies. Do	ation system, info chitecture of an a l on MDA. Moo s. Entity types. a omain events. Us	ormation pyramic information syste del, metamodel, Relationship type se cases. State tra	d. Conceptualisa em. Introduction modelling langues. Cardinality of nsition diagrams	tion of informatic to MDA, softwa uage. Model tran constraints. Integr s.	on systems. ISO re development sformation and rity constraints.		
<ul> <li>Recommended literature:</li> <li>1. http://www.omg.org</li> <li>2. Ian Sommerville, Software Engineering, Addison-Wesley 2005</li> <li>3. Anneke Kleppe, Wim Bast, Jos B Warmer, MDA Explained, the Model Driven Architecture, Addison-Wesley 2003</li> <li>4. Scott Berkun, The Art Of Project Management, O Reilly 2005</li> </ul>							
Course languag	ge:						
Notes:							
Course assessment Total number of assessed students: 179							
А	В	С	D	Е	FX		
19.55 30.17 26.26 8.94 11.17 3.91							
Provides: prof.	RNDr. Gabriel S	emanišin, PhD.					
Date of last mo	dification: 01.06	5.2015					

University: P. J.	. Šafárik Univers	ity in Košice				
Faculty: Faculty	y of Science					
Course ID: ÚINF/ TIK1/15Course name: Information theory, encoding						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present						
Number of EC	<b>FS credits:</b> 4					
Recommended	semester/trimes	ster of the cours	e: 1.			
Course level: II	•					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 88						
А	В	С	D	Е	FX	
64.77 11.36 12.5 3.41 0.0 7.95						
Provides: prof. RNDr. Stanislav Krajči, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

Faculty: Faculty of Science         Course ID: ÚINF/ UGR1/15       Course name: Introduction to computer graphics         Course type, scope and the method: Course type: Lecture / Practice       Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present         Number of ECTS creatis: 5       Recommended semester/trimester of the course: 1.         Course level: 1., II.       Prerequisities:         Conditions for course completion:       Learning outcomes:         To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Course ID: ÚINF/ UGR1/15       Course name: Introduction to computer graphics         Course type, scope and the method: Course type: Lecture / Practice       Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present         Number of ECTS credits: 5         Recommended semester/trimester of the course: 1.         Course level: I., II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present Number of ECTS credits: 5 Recommended semester/trimester of the course: 1. Course level: I., II. Prerequisities: Conditions for course completion: Learning outcomes: To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Number of ECTS credits: 5         Recommended semester/trimester of the course: 1.         Course level: I., II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Recommended semester/trimester of the course: 1.         Course level: I., II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Course level: I., II. Prerequisities: Conditions for course completion: Learning outcomes: To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Prerequisities:         Conditions for course completion:         Learning outcomes:         To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Conditions for course completion: Learning outcomes: To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
<b>Learning outcomes:</b> To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.					
Graphics hardware, input and output devices. Color models, palettes. Raster graphics algorithms for drawing 2D primitives. Filling and clipping. Curve modeling, interpolations and approximations, spline forms, Bézier curves, B-splines, surfaces. Homogenous coordinates, affine transformations, perspective and parallel projections. Visible-surface determination, illumination and shading. Rendering techniques, photorealism, textures, ray tracing, radiosity. Object representations, computer animation, virtual reality.					
<b>Recommended literature:</b> FOLEY, J. D., van DAM, A., FEINER, S., HUGHES, J.: Computer Graphics: Principles and Practice, Addison-Wesley, 1991 MORTENSON, M.E.: Geometric modeling, 2.ed., Willey, 1997					
Course language:					
Notes:					
Course assessment Total number of assessed students: 297					
A B C D E FX					
13.8 10.44 13.8 23.57 29.97 8.42					
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J. Ša	fárik Univers	sity in Košice						
Faculty: Faculty of	Science							
Course ID: ÚINF/ IDS18/18	Course ID: ÚINF/Course name: Introduction to data scienceIDS18/18							
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present								
Number of ECTS	credits: 3							
Recommended sen	nester/trime	ster of the cours	e: 2.					
Course level: II.								
Prerequisities:								
Conditions for cou	rse complet	ion:						
Learning outcome	s:							
<ul> <li>parameters and hyper-parameters, validation, overfitting-underfitting and the bias-variance trade-off; introduction to prediction techniques (as black-box functions); data quality and pre-processing: noise, missing values, data transformation, normalization; the CRISP-DM process; recommendation techniques;</li> <li>Recommended literature:         <ul> <li>Peter Flach (2012). Machine Learning: The Art and Science of Algorithms that Make Sense of</li> </ul> </li> </ul>								
<ul> <li>Jiawei Han, Micheline Kamber, Jian Pei (2011). Data Mining: Concepts and Techniques.</li> <li>Morgan Kaufmann.</li> <li>Pang-Ning Tan, Michael Steinbach, Vipin Kumar (2005). Introduction to Data Mining. Addison Wesley.</li> <li>João Moreira, Andre de Carvalho, Tomáš Horváth (2018). A General Introduction to Data Analytics. Wiley.</li> </ul>								
Course language:								
Notes:								
Course assessment Total number of assessed students: 0								
A	В	C	D	Е	FX			
0.0	0.0	0.0	0.0	0.0	0.0			
Provides: RNDr. To	Provides: RNDr. Tomáš Horváth, PhD.							
Date of last modifi	cation: 14.0	9.2018						
Approved: prof. RI	NDr. Viliam	Geffert, DrSc.						

University: P. J. Šafárik University in Košice							
Faculty: Faculty of	of Science						
<b>Course ID:</b> ÚINF UNS1/15	V Course name: Introduction to neural networks						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present							
Number of ECTS	S credits: 5						
Recommended se	emester/trimes	ster of the cours	<b>e:</b> 1.				
Course level: I., I	I.						
Prerequisities:							
<b>Conditions for co</b> Evaluation of pro Written and oral e	<b>ourse completi</b> jects created fo exam.	on: or neural network	applications.				
<b>Learning outcom</b> To understand and with software for	es: d to know appl neural network	ications of basic c models.	paradigms of ne	eural networks. T	o learn working		
Brief outline of the Basic models of gates, perceptrons networks, back p neural networks to	he course: computational s), their compu- ropagation alg o solving of pro-	l units - neuron tational capabilit orithm. Hopfield oblems. Genetic	s (linear thresho y, algorithms of a l neural network and evolution alg	old gates, polyno adaptations. Feed ss. ART neural n gorithms.	omial threshold forward neural networks. Using		
Recommended literature: J. Hertz, A.Krogh, R.G. Palmer: Introduction to the theory of neural computation, Addison Wesley, 1991 HASSOUN, M. H.: Fundamentals of artificial neural networks, The MIT Press, 1995. Mitchell, M. (1998). An introduction to genetic algorithms. MIT press.							
Course language: Slovak or English							
Notes: Content prerequisites: Basics of programming in Python, or another alternative programming language suitable for data analysis							
Course assessment Total number of assessed students: 439							
A	В	С	D	Е	FX		
14.12	17.08	22.55	19.13	22.78	4.33		
Provides: RNDr. 1	Ľubomír Antor	ni, PhD.					

Date of last modification: 10.02.2021

University: P. J.	. Šafárik Univers	ity in Košice				
Faculty: Faculty	y of Science					
<b>Course ID:</b> ÚIN AEO1/15	Course ID: ÚINF/ EO1/15Course name: Legal aspects of electronic commerce					
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of EC	<b>FS credits:</b> 3					
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2., 4.			
Course level: I.	, II.					
Prerequisities:						
<b>Conditions for</b>	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
<b>Course assessment</b> Total number of assessed students: 0						
А	В	С	D	Е	FX	
0.0 0.0 0.0 0.0 0.0 0.0						
Provides: doc. JUDr. Regina Hučková, PhD., doc. RNDr. Jozef Jirásek, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šafárik University in Košice						
Faculty: Faculty of Science						
Course ID: ÚINF/ LAD1/15Course name: Logical aspects of databases						
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of ECTS credits: 4						
Recommended semester/trimester of the course: 2.						
Course level: II.						
Prerequisities:						
Conditions for course completion:						
<b>Learning outcomes:</b> to understand and to be able to formalize relationships between databases, symbolic logic and logic programming						
<ol> <li>Basic concepts of logic – a symbol, a term, a formula, an interpretation</li> <li>Formalization of a table and a database</li> <li>Conjunctive queries</li> <li>Conjunctive calculus</li> <li>Relations between Conjunctive calculus and conjunctive queries</li> <li>Relational algebra</li> <li>Relations of different models of databases</li> </ol>						
<b>Recommended literature:</b> https://ics.upjs.sk/~krajci/skola/vyucba/ucebneTexty/LAD-presentation.pdf						
Course language: Slovak or English						
<b>Notes:</b> content prerequisites: databases (SQL), predicate logic (a symbol, a term, a formula, an interpretation)						
Course assessment Total number of assessed students: 90						
A B C D E FX						
42.22 18.89 17.78 11.11 7.78 2.22						
Provides: prof. RNDr. Stanislav Krajči, PhD.						
Date of last modification: 19.02.2021						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J.	Šafárik Univers	ity in Košice					
Faculty: Faculty	of Science						
<b>Course ID:</b> ÚIN STU1/16	Course ID: ÚINF/Course name: Machine learningSTU1/16						
Course type, sco Course type: L Recommended Per week: 2 / 2 Course method	ope and the met ecture / Practice course-load (h Per study perio l: present	thod: ; ours): od: 28 / 28					
Number of ECI	S credits: 5						
Recommended s	semester/trimes	ster of the cours	<b>e:</b> 2.				
<b>Course level:</b> II.							
Prerequisities:							
Conditions for c	course completi	on:					
Learning outcom	mes:						
Brief outline of	the course:						
Recommended	literature:						
Course languag	e:						
Notes: If necessary, tead	ching, mid-term	and final evaluat	tion will be by d	istance form (skyp	be).		
Course assessment Total number of assessed students: 35							
А	В	С	D	Е	FX		
28.57	28.57 14.29 31.43 14.29 11.43 0.0						
Provides: RNDr	. Ľubomír Antor	ni, PhD., doc. RN	IDr. Gabriela An	drejková, CSc.			
Date of last mod	lification: 30.03	3.2020					
Approved: prof.	RNDr. Viliam (	Geffert, DrSc.					

Faculty: Faculty of Science       Course nD: ÚMV/ MST/19       Course name: Mathematical statistics         Course type, scope and the method:       Course type: Lecture / Practice         Recommended course-load (hours):       Per weck: 2/ 2 Per study period: 28 / 28         Course method: present       Number of ECTS credits: 5         Recommended semester/trimester of the course: 3.       Course level: 1., II.         Prerequisities:       Conditions for course completion:         To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended Hiterature:       1. Skrivánková V Pravdepodobnosť v prikladoch, UPJŠ, Košice, 2006 (in Slovak)         2. Skrivánková V Hacčová M.: Štatistika v prikladoch, UPJŠ, Košice, 2005 (i	University: P. J. Šafárik University in Košice								
Course ID: ÚMV/ MST/19       Course name: Mathematical statistics         Sourse type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2/ 2 Per study period: 28 / 28 Course method: present       Sourse type: Lecture / Practice         Number of ECTS credits: 5       Recommended semester/trimester of the course: 3.       Course level: 1, II.         Prerequisities:       Conditions for course completion: To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:       Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:       Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions. Some important statistics and their distributions. Point estimators and their attribution. Scheid statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:       1. Skrivánková V Pravdepodobnosť v prikladoch, UPJŠ, Košice, 2006 (in Slovak)         2. Skrivánková V Hančová M.: Štatistika v prikladoch, UPJŠ, Košice, 2005 (in Slovak)       2. Skrivánková V Bračová M.: Štatistika v prikladoch, UPJŠ, Košice, 2005 (in Slovak)         3. CASELLA, G., BERGER, R., Statistical Inference,	Faculty: Faculty	of Science							
Course type, scope and the method:         Course type: Lecture / Practice         Recommended course-load (hours):         Per week: 2 / 2 Per study period: 28 / 28         Course method: present         Number of ECTS credits: 5         Recommended semester/trimester of the course: 3.         Course level: 1., II.         Prerequisities:         Conditions for course completion:         To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:         1. Skrivánková V. Pravdepodobnosť v prikladoch, UPJŠ, Košice, 2006 (in Slovak)<	<b>Course ID:</b> ÚM MST/19	V/ Course na	Course name: Mathematical statistics						
Number of ECTS credits: 5         Recommended semester/trimester of the course: 3.         Course level: 1., II.         Prerequisities:         Conditions for course completion:         To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:       1.       2. Skrivánková V-Handcová M.: Statistika v prikladoch, UPJŠ, Košice, 2006 (in Slovak)         3. CASELLA, G., BERGER, R., Statistical Inference, 2nd ed., Duxbury Press, 2002       2. Degroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012         5. Uts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thomson Brooks/Cole, 2014       6. Andel J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)         Course language:       Slov	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present								
Recommended semester/trimester of the course: 3.         Course level: I., II.         Prerequisities:         Conditions for course completion:         To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:         1. Skrivánková V Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)         2. Skrivánková V Hančová M.: Štatistika v príkladoch, UPJŠ, Košice, 2005 (in Slovak)         Skrivánková V Hančová M.: Štatistika v príkladoch, UPJŠ, Košice, 2005 (in Slovak)         2. Skřívánková V Hančová M.: Štatistika, príkladoch, UPJŠ, Košice, 2005 (in Slovak)         <td colspan="</td> <td>Number of ECT</td> <td>S credits: 5</td> <td></td> <td></td> <td></td> <td></td>	Number of ECT	S credits: 5							
Course level: 1., II.         Prerequisities:         Conditions for course completion:         To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:         1. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)         2. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2005 (in Slovak)         3. CASELLA, G., BERGER, R., Statistical Inference, 2nd ed., Duxbury Press, 2002         4. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012         5. Uts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thorsons Brooks/Cole, 2014         6. Anděl J.: Základy matematické stati	Recommended	semester/trimes	ster of the cours	<b>e:</b> 3.					
Prerequisities:         Conditions for course completion:         To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:       1.         1. Skřivánková V: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)         2. Skřivánková V: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2005 (in Slovak)         3. CASELLA, G., BERGER, R., Statistical Inference, 2nd ed., Duxbury Press, 2002         4. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012         5. Utts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thomson Brooks/Cole, 2014         6. Anděl J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)         Course language:	Course level: I.,	II.							
Conditions for course completion:         To obtain at least 50% in two written tests during the semester. Total evaluation based on written tests and oral exam.         Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:       1         1. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)         2. Skrivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)         3. CASELLA, G., BERGER, R., Statistical Inference, 2nd ed., Duxbury Press, 2002         4. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012         5. Utts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thomson Brooks/Cole, 2014         6. Anděl J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)         Course language:         Slovak	Prerequisities:								
Learning outcomes:         Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.         Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:       1. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)         2. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2005 (in Slovak)       2. Skřivánková V.: Hančová M.: Štatistical Inference, 2nd ed., Duxbury Press, 2002         4. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012       5. Utts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thomson Brooks/Cole, 2014         6. Anděl J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)       Course language: Slovak         Notes:         Votes         A         B       C         D       E         FX <td co<="" td=""><td><b>Conditions for c</b> To obtain at leas tests and oral ex</td><td>course completi st 50% in two w am.</td><td>on: ritten tests durin</td><td>g the semester. To</td><td>otal evaluation b</td><td>ased on written</td></td>	<td><b>Conditions for c</b> To obtain at leas tests and oral ex</td> <td>course completi st 50% in two w am.</td> <td>on: ritten tests durin</td> <td>g the semester. To</td> <td>otal evaluation b</td> <td>ased on written</td>	<b>Conditions for c</b> To obtain at leas tests and oral ex	course completi st 50% in two w am.	on: ritten tests durin	g the semester. To	otal evaluation b	ased on written		
Brief outline of the course:         Random vectors, their distributions and characteristics. Joint and marginal distributions.         Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.         Recommended literature:       1.         1.       Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)         2.       Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2005 (in Slovak)         3.       CASELLA, G., BERGER, R., Statistical Inference, 2nd ed., Duxbury Press, 2002         4.       DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012         5.       Uts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thomson Brooks/Cole, 2014         6.       Anděl J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)         Course assessment         Total number of assessed students: 124         A       B       C       D       E       FX         20.97       21.77       15.32       21.77       12.9       7.26	<b>Learning outcomes:</b> Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.								
Recommended literature:1. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)2. Skřivánková VHančová M.: Štatistika v príkladoch, UPJŠ, Košice, 2005 (in Slovak)3. CASELLA, G., BERGER, R., Statistical Inference, 2nd ed., Duxbury Press, 20024. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 20125. Utts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thomson Brooks/Cole, 20146. Anděl J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)Course language: SlovakSlovakNotes:Course assessment Total number of assessed students: 124ABCDEFX20.9721.7715.3221.7712.97.26	<b>Brief outline of the course:</b> Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction.Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and popparametric tests								
Course language: SlovakNotes:Course assessment Total number of assessed students: 124ABCDEFX20.9721.7715.3221.7712.97.26	<ul> <li>Recommended literature:</li> <li>1. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)</li> <li>2. Skřivánková VHančová M.: Štatistika v príkladoch, UPJŠ, Košice, 2005 (in Slovak)</li> <li>3. CASELLA, G., BERGER, R., Statistical Inference, 2nd ed., Duxbury Press, 2002</li> <li>4. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012</li> <li>5. Utts, J.M., Heckard, R.F.: Mind od Statistics, 5th ed., Thomson Brooks/Cole, 2014</li> <li>6. Anděl J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)</li> </ul>								
Notes:         Course assessment           Total number of assessed students: 124         A           A         B         C         D         E         FX           20.97         21.77         15.32         21.77         12.9         7.26	Course language: Slovak								
Course assessment Total number of assessed students: 124ABCDEFX20.9721.7715.3221.7712.97.26	Notes:								
ABCDEFX20.9721.7715.3221.7712.97.26	Course assessment Total number of assessed students: 124								
20.97 21.77 15.32 21.77 12.9 7.26	А	В	С	D	Е	FX			
	20.97	21.77	15.32	21.77	12.9	7.26			

Provides: prof. RNDr. Ivan Žežula, CSc., RNDr. Martina Hančová, PhD.

**Date of last modification:** 18.03.2019

University P I	Šafárik Univer	sity in Košice					
<b>Faculty</b> : Facult	v of Science						
Course ID: ÚIN MPJ1/15	Course ID: ÚINF/       Course name: Modern programming languages         MP11/15       Course name: Modern programming languages						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 2 Per study period: 14 / 28 Course method: present							
Number of EC	TS credits: 4						
Recommended	semester/trime	ster of the cours	e: 2., 4.				
Course level: I.	, II.						
Prerequisities:							
Conditions for	course complet	ion:					
Learning outco Mastering the b	mes: basics of standard	d and experimenta	l programming	models and techn	iques.		
Object oriente programming – Attribute progra and declarative	d programming operator overlo amming. Paralle programming –	g, Generic progr pading, indexer. E l and multithread p lambda expressio	amming – pa vent programm programming – ns, LINQ. Grap	rametric polymor ing (event handlir processes, threadp phics primitives.	rphism. Vector ng) – delegates. pool. Functional		
Recommended literature: 1. Andrew Troelsen, Pro C# 5.0 and the .NET 4.5 Platform, 2012, APRESS 2. Joseph Albahari, Ben Albahari, C# 5.0 in a Nutshell: The Definitive Reference, 2012, O'REILLY 3. Daniel Solis, Illustrated C# 2012, 2012, APRESS							
Course language:							
Notes: If necessary, teaching, mid-term and final evaluation will be by distance form.							
Course assessment Total number of assessed students: 142							
А	В	С	D	E	FX		
16.2 19.01 24.65 21.13 17.61 1.41							
Provides: doc.	Provides: doc. RNDr. Csaba Török, CSc.						
Date of last mo	dification: 30.0	3.2020					
Approved: prof	. RNDr. Viliam	Geffert, DrSc.					

University: P. J. Šafárik University in Košice						
Faculty: Faculty of Science						
Course ID: ÚINF/ MWT1/19Course name: Modern web technologies						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present						
Number of ECTS credits: 5						
Recommended semester/trimester of the course: 2.						
Course level: I., II.						
Prerequisities:						
Conditions for course completion: Active attendance at seminars, defense of final group project. The final project is partially created on seminars.						
Learning outcomes: Ability to design and create dynamic scalable SPA - SIngle Page Application using Angular and Spring Boot.						
<b>Brief outline of the course:</b> - Selected part of Javascript and Typescript, High order functions, composition of pure functions, Angular - components, services, Observable, router, localStorage, form validation, comunication in component hierarchy, modules, hierarchical routing, routing guards, RXJS, material components library, NGXS storage and its extensions, reactive forms, custom validators, asynchronous validators, pagination, filtering and sorting of local and remote data in tables. Websockets						
<ul> <li>Recommended literature:</li> <li>1. web page of framework Angular: https://angular.io/</li> <li>2. web page of Angular Material: https://material.angular.io/</li> <li>3. web page of storage NGXS: https://www.ngxs.io/</li> <li>4. web page of library RXJS: https://rxjs-dev.firebaseapp.com/guide/overview</li> <li>5: Craig Walls: Spring in action. Fifth edition. ISBN: 978-1-61729-494-5. Hanning 2019</li> </ul>						
Course language: slovak or english						
Notes:						
Course assessment Total number of assessed students: 12						
A B C D E FX						
75.0 0.0 8.33 8.33 0.0						
Provides: RNDr. Peter Gurský, PhD.						
Date of last modification: 16.01.2020						

University: P. J.	Šafárik Unive	rsity in Košice				
Faculty: Faculty	y of Science					
<b>Course ID:</b> ÚIN NEU1/15	NF/ Course name: Neural networks					
Course type, sc Course type: I Recommended Per week: 2 / 1 Course method	ope and the m Lecture / Practive l course-load ( Per study per d: present	ethod: ce hours): riod: 28 / 14				
Number of ECT	<b>FS credits:</b> 5					
Recommended	semester/trim	ester of the cours	<b>e:</b> 1., 3.			
Course level: II						
Prerequisities:						
Conditions for	course comple	tion:				
Learning outco To understand a	mes: nd to know usi	ng basic paradigm	s of neural netw	orks.		
Feed-forward an networks, a capa and solving opti- computational m <b>Recommended</b> J. Hertz, A.Krog Wesley, 1991.	nd recurrent ne ability of neural imization probi nodels. Theore literature: gh, R.G. Palme	r: Introduction to t	ck propagation a universal approx ural networks. N ueural networks. he theory of neu	algorithm to adap kimator. Hopfield i leural networks in ral computation,	tation of neural neural networks connections to Addison	
V. Kvasnička a J. Šíma R. Neri	kol.: Úvod do 1 1da: Teoretické	eórie neurónových otázky neurónový	n sietí, IRIS, Bra ach sítí Matfyzn	tislava, 1997. ress MFF UK Pr	aha 1996	
Course languag	ge:		•••• ••••• ••••• ••••• •			
<b>Notes:</b> For ERASMUS students: It is necessary to know a model of artificial neurons, its computation and its setting, layered neural networks and backpropagation training algorithm.						
Course assessm	ent Fassessed stude	ents: 228				
A	B	C	D	E	FX	
19.3	14.04	23.68	20.18	17.98	4.82	
Provides: RNDr. Ľubomír Antoni, PhD., doc. RNDr. Gabriela Andrejková, CSc.						
Date of last mo	dification: 17.	12.2020				
Approved: prof	. RNDr. Viliam	Geffert, DrSc.				

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	y of Science					
<b>Course ID:</b> ÚIN NSQL/17	NF/ Course na	<b>me:</b> NoSQL da	tabases			
Course type, sc Course type: I Recommended Per week: 1 / 1 Course method	ope and the met Lecture / Practice I course-load (h Per study period: present	thod: ours): od: 14 / 14				
Recommended	semester/trimes	ster of the cours	$xe \cdot 2  4$			
Course level: II			с. 2., т.			
Prerequisities:						
Conditions for Active attendan	<b>course completi</b> ce at seminars, d	<b>on:</b> efense of final p	roject.			
Learning outco Know propertie NoSQL databas the appropriate	<b>mes:</b> s of different kir es (Redis, Cassar kind of NoSQL o	nds of NoSQL d ndra, Neo4j, Mor database for give	atabases, have ar 1go DB) from pro en purpose.	n practical experi ogram code. Gain	ence with given skills to identify	
Brief outline of 1. Big data, type 2. Data represer 3. Key-value da 4. Column-orien 5. Graph databa 6. Document-or	the course: es of NoSQL data nation formats tabases. nted databases. ses. iented databases.	abases.				
<ul> <li>Recommended literature:</li> <li>1.HARRISON G.: Next Generation Databases: NoSQL, NewSQL, and Big Data. Apress, 2015.</li> <li>ISBN 978-1-4842-1330-8.</li> <li>2. HILLS T.: NoSQL and SQL Data Modeling: Bringing Together Data, Semantics, and Software. Technics Publications, 2016. ISBN 978-1-6346-2109-0</li> </ul>						
Course languag Slovak or Engli	ge: sh					
Notes:						
Course assessment Total number of assessed students: 20						
A B C D E FX						
45.0	20.0	20.0	10.0	5.0	0.0	
Provides: RNDr. Peter Gurský, PhD.						
Date of last mo	dification: 05.02	2.2019				

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚFV/ NOT1a/03	Course name: Nontraditional Optimization Techniques I
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 2 Per Course method: pre	Ind the method: re / Practice rse-load (hours): study period: 28 / 28 esent
Number of ECTS cr	edits: 5
Recommended seme	ester/trimester of the course: 3.

Course level: I., II.

Prerequisities:

#### **Conditions for course completion:**

Monitoring progress in solving applied projects. examination (50%), quality of the project (50%) examination

#### Learning outcomes:

To familiarize students with biologically and physically inspired optimization, simulation and prediction techniques. To expand students' creativity and programming skills by applying heuristic techniques in solving applied problems.

#### Brief outline of the course:

Fundamentals of optimization theory. Basic optimization problems. Basic types of objective functions. Classification of optimization techniques. Gradient-based optimization techniques. Evolutionary algorithms. Genetic algorithms. Genetic algorithms as Markov processes. Statistical Mechanics Approximations of Genetic Algorithms. Monte Carlo simulation and simulated annealing. Swarm optimization. Cellular Automata and their applications in simulations of complex systems. Fractals. Agent-based models. Evolutionary games. Evolution of cooperation. Fundamentals of Neural Networks. Application of singular value decomposition to solve least squares problems.

#### **Recommended literature:**

Hartmann, A. K., Rieger, H., Optimization Algorithms in Physics, Wiley, 2002
Reeves, C. R., Rowe, J. E., Genetic Algorithms: Principles and perspectives, Kluwer, 2003
Mitchell, M., Complexity. A Guided Tour, Oxford University Press, 2009
Solé, R. V., Phase Transitions, Princeton University Press, 2011
Ilachinski, A., Cellular Automata. A Discrete universe, World Scientific, 2002
Haykin, S., Neural Networks. A Comprehensive Foundation, Prentice-Hall, 1999

#### **Course language:**

Notes:

Course assessment Total number of assessed students: 81						
А	В	С	D	Е	FX	
69.14	17.28	7.41	2.47	3.7	0.0	
Provides: doc. RNDr. Jozef Uličný, CSc.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J.	Šafár	rik Universi	ity in Košice			
Faculty: Faculty	of So	cience				
Course ID: ÚF NOT1b/03	FV/     Course name: Nontraditional Optimization Techniques II					
Course type, sc Course type: 1 Recommended Per week: 2 / 2 Course method	ope an Lecture I cour 2 Per s d: pres	nd the met e / Practice rse-load (he study perio sent	hod: ours): od: 28 / 28			
Number of EC	ГS cre	edits: 5				
Recommended	semes	ster/trimes	ter of the course	<b>e:</b> 4.	_	
Course level: I.,	, II.					
Prerequisities:						
<b>Conditions for</b> Presentation of Should corona-	course the pre- virus c	e completion oject in wri quarantine p	on: tten form. Oral e persist, written re	xam and discuss port and answer	ion of the preser to posed questio	nted project.
Learning outco By using examp interpretation of including parasi	mes: oles fro f comp te/hos	om the biol plex system st coevoluti	ogy to learn appl ns. Introduction t on.	ications of optin o new paradigm	nization techniqu s in the area of s	ies on study and ystems biology,
<b>Brief outline of the course:</b> Complex systems, emergent behavior. Evolutionary theory and memetics. Application of optimization techniques on complex systems. Application of methods /genetic algorithms, simulated annealing, taboo search/ on selected problems of biomolecular simulations. Molecular dynamics, protein folding. Population dynamics, metabolic networks and complexity in bioinformatics.						
<b>Recommended</b> The actual scien	<b>litera</b> ntific p	ture: papers.				
Course language:						
Notes:						
Course assessment Total number of assessed students: 44						
А		В	С	D	Е	FX
88.64		4.55	4.55	2.27	0.0	0.0
Provides: doc. RNDr. Jozef Uličný, CSc.						
Date of last mo	difica	tion: 27.03	.2020			
Approved: prof	RND	Dr. Viliam (	Geffert, DrSc.			

University: P. J. Ša	University: P. J. Šafárik University in Košice								
Faculty: Faculty of	Science								
<b>Course ID:</b> ÚINF/ PDB1/15	Course na	me: Organizatio	n and data proce	essing					
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present									
Number of ECTS	credits: 4								
Recommended sen	nester/trimes	ster of the course	e: 3.						
Course level: II.									
Prerequisities:									
<b>Conditions for cou</b> final test	rse completi	on:							
<b>Learning outcome</b> To understand the when solving optim	s: principles of nization proble	database manage ems over big data	ement systems. ' and managing p	To be able to use parallel and distrib	the knowledge buted databases.				
<b>Brief outline of the course:</b> Data representation, disk and file organization, tree-based indexing methods B+tree, R-tree, Hash- based indexing methods, external sorting, enumeration of relational operators, query optimization, transaction management, parallel and distributed databases, parallel and distributed relational operations, database security and data consistency, recovery management, profiling, data reduction									
Recommended lite 1. R. RAMAKRIS Education, 2003 2. A. SILBERSCH Hill Higher Educat	rature: HNAN, J. GE ATZ, H. F. Ko ion, 2006	HRKE: Database ORTH, S. SUDA	e Management S RSHAN: Datab	Systems, McGraw base system concej	Hill Higher pts, McGraw				
Course language:									
Notes:									
Course assessment Total number of assessed students: 111									
Α	В	С	D	Е	FX				
28.83	21.62	15.32	11.71	21.62	0.9				
Provides: doc. RNDr. Csaba Török, CSc., RNDr. Peter Gurský, PhD.									
Date of last modifi	cation: 05.02	2.2019							
Approved: prof. R	NDr. Viliam (	Geffert, DrSc.							
University: P. J.	University: P. J. Šafárik University in Košice								
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Faculty: Faculty	Faculty: Faculty of Science								
<b>Course ID:</b> ÚIN PDS1/18	VF/ Course name: Parallel and distributed systems								
Course type, sc Course type: I Recommended Per week: 2 / 1 Course metho	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present								
Number of EC	<b>ΓS</b> credits	: 5							
Recommended	semester/	trimes	ster of the cours	e: 2.					
Course level: II	•								
Prerequisities:									
<b>Conditions for</b>	course co	mpleti	on:						
Learning outco to introduce the	mes: fundamer	ntals of	f parallel and dist	ributed program	ning				
Brief outline of current parallel development, d	the cours and distri ata structu	e: buted res and	architectures, bas 1 programming m	sic issues in para	llel and distribut	ted applications			
<ul> <li>Recommended literature:</li> <li>1. Kenneth A. Berman and Jerome L. Paul: Algorithms: Sequential, Parallel, and Distributed, Thomson, 2005, ISBN 0-534-42057-5</li> <li>2. Gregory R. Andrews: Foundations of Multithreaded, Parallel, and Distributed Programming, Addison-Wesley, 2000, ISBN 0-201-35752-6</li> <li>3. Joseph JáJá: An Introduction to Parallel Algorithms, Addison-Wesley, 1992, ISBN 0-201-54856-9</li> <li>4. Gerard Tel: Introduction to Distributed Algorithms, Cambridge University Press, 1994, ISBN 0-521-47060-2</li> </ul>									
Course languag Slovak or englis	ge: sh								
Notes:	Notes:								
Course assessm Total number of	Course assessment Total number of assessed students: 64								
А	В		С	D	Е	FX			
23.44	7.81		17.19	14.06	23.44	14.06			
Provides: doc. 1	RNDr. Joz	ef Jirás	sek, PhD.						
Date of last mo	dification	: 10.02	2.2021						
Approved: prof	. RNDr. V	iliam (	Geffert, DrSc.						

University: P. I. Šafárik University in Kočica	Universitas D. I. Čefénik Universitas in Kežice							
Encepter Encepter of Science								
Faculty: Faculty of Science	Company Dr. (DDE)							
Course ID: UINF/     Course name: Pro-seminar t       PDSI1/15	to diploma thesis in informatics							
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present								
Number of ECTS credits: 2								
Recommended semester/trimester of the course:	: 1.							
Course level: II.								
Prerequisities:								
Conditions for course completion:								
<b>Learning outcomes:</b> To inform students about areas of informatics they end of semester students have to prepared themes o literature.	y are suitable to work in diploma theses. In the of diploma theses, goals and recommended study							
Brief outline of the course:								
The seminar is oriented to problems prospective to	preparations of Diploma theses.							
Recommended literature: MEŠKO, D., KATUŠČÁK, D. Akademická príruč 2004. 316 s. ISBN 80-8063-150-6 ISO 690: 1987 Documentation - Bibliographic refe ISO 2145: 1978 Documentation - Numbering of di Eco, U.: Jak napsat diplomovou práci, z taliančiny Olomouc, Votobiax. Odborná a vedecká literatúra týkajúca sa diplomov diplomovej práce.	Recommended literature: MEŠKO, D., KATUŠČÁK, D. Akademická príručka. 1. vyd. Vydavateľstvo Osveta : Martin, 2004. 316 s. ISBN 80-8063-150-6 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents. Eco, U.: Jak napsat diplomovou práci, z taliančiny Come si fa una tesi di laures, Milano, 1977, Olomouc, Votobiax. Odborná a vedecká literatúra týkajúca sa diplomovej práce podľa odporúčania vedúceho diplomovoj práca							
Course language:								
Notes:								
Course assessment Total number of assessed students: 72								
abs n								
97.22 2.78								
Provides: doc. RNDr. Ľubomír Šnajder, PhD.								
Date of last modification: 03.05.2015								
Approved: prof. RNDr. Viliam Geffert, DrSc.								

University: P. J. Šafárik University in Košice						
Faculty: Faculty of S	cience					
<b>Course ID:</b> ÚINF/ PAZ1a/15	Course ID: ÚINF/ PAZ1a/15Course name: Programming, algorithms, and complexity					
Course type, scope a Course type: Lectur Recommended cour Per week: 3 / 4 Per Course method: pre	and the method: re / Practice rse-load (hours): study period: 42 / 56 esent					
Number of ECTS or	adita 9					

**Recommended semester/trimester of the course:** 1.

Course level: I., II.

Prerequisities:

#### **Conditions for course completion:**

Get a prescribed minimum number of points for activities of continuous assessment and for solving tasks during final practical test.

#### Learning outcomes:

#### **Brief outline of the course:**

First part of the course (with turtle graphics): New Eclipse project, interactive communication with objects, simple turtle graphics, making user methods, local variables, variable types, arithmetic and logical expressions, random numbers, conditions, loops for and while, debugging, references, chars, Strings, arrays, instance variables, mouse events, simple array algorithms.

Second part of the course (without turtle graphics): Exceptions, using try-catch-finally block, files and directories, conversion from string variables, encapsulation, constructors with parameters, constructors hierarchy, getters and setters, interfaces, inheritance and polymorphism, abstract classes and methods, packages, visibility modifiers, sorting using Arrays.sort() and interfaces Comparable and Comparator, Java Collections Framework: autoboxing, interface List, ArrayList, LinkedList, interface Set and class HashSet, methods equals() and hashCode(), for-each loop, interface Map and class HashMap, custom Exceptions, rethrowing exceptions, exceptions' inheritance, Runtime exceptions, Errors, static variables and methods.

#### **Recommended literature:**

1. ECKEL, B.: Thinking in Java, Pearson, 2006, ISBN: 978-01-318-7248-6

2. PECINOVSKÝ, R.: OOP - Naučte se myslet a programovat objektově, Computer Press, a.s., Brno, 2010, ISBN: 978-80-251-2126-9

3. SIERRA, K., BATES, B. Head First Java, O'Reilly Media; 2nd edition, 2005, ISBN: 978-05-960-0920-5

#### **Course language:**

Slovak language, english language is required only to read Java API documentation.

Notes:

Course assessment Total number of assessed students: 717								
А	A B C D E FX							
16.18	16.18 7.39 11.44 15.48 15.06 34.45							
<b>Provides:</b> RNDr. Juraj Šebej, PhD., RNDr. Zuzana Bednárová, PhD., RNDr. Miroslav Opiela, PhD.								
Date of last modification: 03.05.2015								
Approved: prof	f. RNDr. Viliam (	Geffert, DrSc.						

University: P. J. Šafá	University: P. J. Šafárik University in Košice						
Faculty: Faculty of S	cience						
<b>Course ID:</b> ÚINF/ PAZ1b/15	Course ID: ÚINF/ PAZ1b/15Course name: Programming, algorithms, and complexity						
Course type, scope a Course type: Lectu Recommended cou Per week: 2 / 4 Per Course method: pro	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 4 Per study period: 28 / 56 Course method: present						
Number of ECTS cr	redits: 7						
Recommended seme	ester/trimester of the course: ?						

Course level: I., II.

**Prerequisities:** ÚINF/PAZ1a/15

#### **Conditions for course completion:**

Get a given minimum number of points for activities of continuous assessment and for solving tasks during final practical test. The final practical test focuses on application of known algorithms and techniques of efficient algorithm design.

#### Learning outcomes:

#### **Brief outline of the course:**

Recursion and its applications, fractals. Binary search and simple sorting algorithm with quadratic time complexity. Time and space complexity of algorithms, analysis of time complexity, O-notation. Basic data structures and their applications: linked list, stack, and queue. Hierarchical data and their representation, trees, tree traversals, binary search trees. Arithmetic expressions, evaluation of an arithmetic expression. Efficient sorting algorithm: QuickSort, MergeSort, and HeapSort. Backtrack. Techniques "divide and conquer" and dynamic programming as methods for design of efficient algorithms. Basic graph algorithms for unweighted graphs (Breadth-first search, Depth-first search, graph connectivity, graph components, graph bridges, topological sort) and for weighted graphs (shortest paths: Bellman-Ford algorithm, Dijkstra algorithm, Floyd-Warshallov algorithm; minimum spanning tree: Prim algorithm, Kruskal algorithm). String algorithms. Greedy algorithms.

#### **Recommended literature:**

WRÓBLEWSKI, P.: Algoritmy, datové struktury a programovací techniky. Computer Press, Brno, 2004

CORMEN, T.H., LEISERSON, Ch.E., RIVEST, R.L, STEIN, C. Introduction to Algorithms. The MIT Press, 2009.

KLEINBERG, J., TARDOS, E.: Algorithm Design, Cornell University, Addison Wesley, New York, 2006.

#### Course language:

Slovak language, literature is available in english and czech language.

Notes:

Course assessment Total number of assessed students: 1191								
А	A B C D E FX							
13.1	13.1 7.14 9.82 19.4 21.91 28.63							
<b>Provides:</b> RNDr. Zuzana Bednárová, PhD., RNDr. Juraj Šebej, PhD., RNDr. Miroslav Opiela, PhD.								
Date of last modification: 03.05.2015								
Approved: prof	f. RNDr. Viliam (	Geffert, DrSc.						

University: P. J.	Šafárik	University	/ in	Košice
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Faculty: Faculty of Science

Course ID: ÚINF/	<b>Course name:</b> Programming, algorithms, and complexity
PAZ1c/17	

# Course type, scope and the method:

Course type: Lecture / Practice

**Recommended course-load (hours): Per week:** 2 / 3 **Per study period:** 28 / 42

Course method: present

**Number of ECTS credits:** 5

**Recommended semester/trimester of the course:** 3.

Course level: I., II.

**Prerequisities:** ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15

**Conditions for course completion:** 

Active attendance at seminars, creation of two team projects.

#### Learning outcomes:

Gain skills to design and implement complex application with three-layer architecture and wellknown design patterns. Ability to create REST server and simple Angular application with ability to communicate with the REST server.

#### Brief outline of the course:

1. Classes, methods and properties identification. Entities. Unit testing in JUnit.

2. Intorduction to JavaFx, FXML, Scene Builder, Controller.

3. Model-view-controller pattern, classes Observable and Property, model of models, persistent layer, entities and identifiers, CRUD repository in main memory, connection between GUI and persistent layer.

4. Interfaces for DAO objects, class relationships with static association. Pros and cons in hardwired associations. Implementing Factory design pattern as an abstraction of hardwired association. Enum. Implementation of database persistent layer, configuration od JDBCTemplate and RowMapper.

5. Inserting data by JDBCTemplate, Associations between classes. Cardinalities: 1:1, 1:M, 1:N. Design and realization in the code. Design of complex data model, ResultSetExtractor.

- 6. Business layer, three-layer architecture, modal windows, editing entities in JavaFx and MySQL.
- 7. Logging with default tools and with `slf4j` library. Logging best practices. Safe password storage.
- 8. Annotations, lambda expressions, generic classes

9. Spring Boot and REST services. Json format.

10. Angular - Installation, TypeScript, DOM model, components and their properties, events listeners in components.

11. Angular - components interaction, forms, input validation.

12. Angular - services, Observable, injection, communication with REST server via HTTP.

#### **Recommended literature:**

1. SIERRA, K., BATES, B.: Head First Java (2nd Edition), 2005

2. ECKEL, B.: Thinking in Java (4th Edition), 2006

3. Angular Docs, typescript. Dostupné na internete: https://angular.io/docs/ts/latest/

Course language: Slovak or English.							
Notes:							
Course assessment Total number of assessed students: 343							
А	В	С	D	Е	FX		
32.65	17.78 16.62 15.45 13.12 4.37						
Provides: RND	Provides: RNDr. Peter Gurský, PhD.						
Date of last modification: 05.02.2019							
Approved: prot	f. RNDr. Viliam (	Geffert, DrSc.					

University: P. J. Šafár	ik University in Košice
Faculty: Faculty of So	cience
Course ID: KPPaPZ/PPZMg/12	Course name: Psychology and Health Psychology (Master's Study)
Course type, scope an Course type: Lecture Recommended cour Per week: 1 / 2 Per s Course method: pre	nd the method: e / Practice ·se-load (hours): study period: 14 / 28 sent
Number of ECTS cre	edits: 4
Recommended semes	ster/trimester of the course:
Course level: II.	
Prerequisities:	
Conditions for course a) Active work during instructors); continuou in the range of maxim max. 15 points. A ma b) Written examinatio of the lecture. The wri 3 points) with a maxin Conditions for admiss c) Exam: written form You need to get at lea Rating: 65 and less FX; 66 - 72 E; 73 - 79 D; 80 - 86 C; 87 - 93 B; 94 - 100 A. The final evaluation r	e completion: the whole semester (according to the ongoing instructions of the lecturer and us control of study results at seminars during the teaching part of the semester num 5 points. Preparation, presentation and discussion on a selected topic - ximum of 2 absences are allowed. n of the topics of lectures in the 9th week of the semester at the time and place itten examination will consist of 10 questions of a factual nature (1 question / mum of 30 points. sion to the exam: completion of seminars and obtaining at least 25 points. n (50 points / 10 questions of factual-evaluation character of 5 points each) st half of the 50 points.
A more detailed expla of an agreement for the Any modifications to Rector are listed in the	nation of the assignment and the work schedule of students will be the subject ne 1st exercise of the semester. the implementation of the course in connection with the current order of the e electronic board of the course.
Learning outcomes: Students will be able which will be given ar life. They will gain or are closely related to the such as educational p are allowed to commu-	to orient themselves in the basic concepts and theories of health psychology, n interesting and engaging explanation, accompanied by many examples from ientation in current topics, which are the content of health psychology or they he issues not only of this discipline, but also of other psychological disciplines sychology, personality psychology and the like. Within the course, students unicate freely with the teacher and discuss the topics with other classmates.

Students can practically apply the knowledge from the subject especially in the field of prevention of burnout syndrome and support of mental health in the work of a teacher.

#### Brief outline of the course:

1 Introduction to health psychology

2 Psychoimmunology

3 Personality factors and health

- 4 Social support as a protective factor in relation to health
- 5 Subjective well-being
- 6 Stress and stressful situations and ways to manage them
- 7 Burnout syndrome
- 8 Health-promoting behavior, mental hygiene
- 9 Health risk behavior
- 10 School as an important factor of health

#### **Recommended literature:**

Křivohlavý, J.: Psychologie zdraví. Portál, Praha 2001.

Křivohlavý, J.: Psychologie nemoci. Grada, Praha, 2002.

Křivohlavý, J.: Psychologie moudrosti a dobrého života. Grada, Praha, 2009.

Kebza, V.: Psychosociální determinanty zdraví. Academia, Praha 2005.

Kahneman, D., Diener, E., Schwarz, N.(Eds), Well-Being. The Foundations of Hedonic

Psychology. New York, Russell Sage Foundation, 2003.

Kaplan, R. M.: Zdravie a správanie človeka. SPN, Bratislava 1996.

Sarafino, E. P.: Health Psychology. Biopsychosocial interactions. John Wiley and sons 1994.

Baštecký, J., Šavlík, J., Šimek, J. 1993. Psychosomatická medicína. Praha: Grada

Tress, W., Krusse, J., Ott, J.: Základní psychosomatická péče. Portál, Praha 2008.

#### **Course language:**

slovak

Notes:

#### Course assessment

Total number of assessed students: 226

А	В	С	D	Е	FX
19.47	25.22	25.66	13.27	15.93	0.44

Provides: PhDr. Anna Janovská, PhD., Mgr. Lucia Barbierik, PhD.

Date of last modification: 16.02.2021

Approved: prof. RNDr. Viliam Geffert, DrSc.

University: P. J. Šafá	rik University in Košio	ce			
Faculty: Faculty of S	cience				
<b>Course ID:</b> ÚINF/ PPU1a/15	Course name: Runni	ing practice			
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent				
Number of ECTS cr	edits: 2				
Recommended seme	ster/trimester of the o	course: 2.			
Course level: II.					
Prerequisities:					
Conditions for cours	e completion:				
Learning outcomes:					
Brief outline of the c	ourse:				
Recommended litera	iture:				
Course language:					
Notes:					
Course assessment Total number of asses	ssed students: 181				
	abs		n		
97.24 2.76					
Provides:					
Date of last modification: 03.05.2015					
Approved: prof. RNI	Dr. Viliam Geffert, DrS	Sc.			

University: P. J. Šafá	rik University in Košice				
Faculty: Faculty of S	cience				
<b>Course ID:</b> ÚINF/ PPU1b/15	Course ID: ÚINF/ Course name: Running practice PU1b/15				
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present					
Number of ECTS cr	edits: 3				
Recommended seme	ster/trimester of the cours	e: 3.			
Course level: II.					
Prerequisities:					
Conditions for cours	e completion:				
Learning outcomes:					
Brief outline of the c	ourse:				
Recommended litera	iture:				
Course language:					
Notes:					
Course assessment Total number of assessed students: 122					
	abs n				
99.18 0.82					
Provides:					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
<b>Course ID:</b> ÚINF/ VHSP/17	Course ID: ÚINF/ Course name: SAP HANA environment computations /HSP/17			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	e:		
Course level: II.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	nture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 8				
abs n				
100.0 0.0				
Provides: Ing. Miron Kuzma, PhD.				
Date of last modification:				
Approved: prof. RNDr. Viliam Geffert, DrSc.				

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	Science					
Course ID: ÚTVŠ/ ÚTVŠ/CM/13	Course ID: ÚTVŠ/       Course name: Seaside Aerobic Exercise         UTVŠ/CM/13       Course name: Seaside Aerobic Exercise					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 36s Course method: combined_present						
Number of ECTS cr	edits: 2					
Recommended seme	ester/trimester of the cours	e:				
Course level: I., II.	-					
Prerequisities:						
<b>Conditions for cours</b> Conditions for cours Attendance	se completion: e completion:					
Learning outcomes: Learning outcomes: Students will be provided an overview of possibilities how to spend leisure time in seaside conditions actively and their skills in work and communication with clients will be improved. Students will acquire practical experience in organising the cultural and art-oriented events, with the aim to improve the stay and to create positive experiences for visitors						
<ul> <li>Brief outline of the course:</li> <li>Brief outline of the course:</li> <li>1. Basics of seaside aerobics</li> <li>2. Morning exercises</li> <li>3. Pilates and its application in seaside conditions</li> <li>4. Exercises for the spine</li> <li>5. Yoga basics</li> <li>6. Sport as a part of leisure time</li> <li>7. Application of projects of productive spending of leisure time for different age and social groups (children, young people, elderly)</li> <li>8. Application of seaside cultural and art-oriented activities in leisure time</li> </ul>						
Recommended literature:						
Course language:						
Notes:						
Course assessment Total number of assessed students: 41						
	abs n					
	12.2	87.8				

Provides: Mgr. Agata Horbacz, PhD.

Date of last modification: 15.03.2019

Approved: prof. RNDr. Viliam Geffert, DrSc.

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	of Science					
<b>Course ID:</b> ÚIN OPS1/15	F/ <b>Course na</b>	me: Security of	computer networ	ʻks		
Course type, sco Course type: L Recommended Per week: 2 / 2 Course method	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of ECT	S credits: 5					
Recommended s	semester/trimes	ster of the cours	<b>e:</b> 2., 4.			
Course level: II.						
Prerequisities:						
Conditions for c	ourse completi	on:				
Learning outcom	nes:					
Brief outline of	the course:					
Recommended I 1. Paul C. van O 2. W. Stallings: 0 3. L. Dostálek: V	<ul> <li>Recommended literature:</li> <li>1. Paul C. van Oorschot: Computer Security and the Internet: Tools and Jewels, Springer, 2020</li> <li>2. W. Stallings: Cryptography &amp; Network Security, Pearson Education, 7th edition, 2017</li> <li>3. L. Dostálek: Velký průvodce protokoly TCP/IP - bezpečnost, Computer Press 2003</li> </ul>					
Course language	e:					
Notes:	Notes:					
Course assessment Total number of assessed students: 18						
A	В	С	D	Е	FX	
33.33	16.67	11.11	16.67	16.67	5.56	
Provides: RNDr. Rastislav Krivoš-Belluš, PhD., doc. RNDr. Jozef Jirásek, PhD.						
Date of last modification: 22.02.2021						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	of Science					
<b>Course ID:</b> ÚIN BPD1/15	IF/ Course na	F/ <b>Course name:</b> Security of computer systems and data				
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present						
Number of EC	I'S credits: 5					
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1., 3.			
Course level: I.,	, II.					
Prerequisities:						
Conditions for a	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	je:					
Notes:	,			_		
Course assessment Total number of assessed students: 36						
Α	В	С	D	Е	FX	
22.22	22.22 22.22 16.67 16.67 22.22 0.0					
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.						
Date of last mo	dification: 03.05	5.2015				
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šafárik University in Košice						
Faculty: Faculty	Faculty: Faculty of Science					
Course ID: ÚM VKM/10	V/ Course n	Course name: Selected topics in mathematics				
Course type, sc Course type: I Recommended Per week: 2 / 2 Course metho	ope and the me Lecture / Practice I course-load (h 2 Per study peri d: present	thod: e nours): iod: 28 / 28				
Number of EC	<b>FS credits:</b> 5					
Recommended	semester/trime	ster of the cours	<b>e:</b> 1.			
Course level: II	•					
Prerequisities:						
<b>Conditions for</b> Awarded accord points).	course complet ling to tests dur	ion: ing semester (40	points), written	exam (20 points)	, oral exam (40	
Learning outco Students learn t linear and integ	<b>mes:</b> he fundamentals er optimalization	s of probability th n. The emphasis i	eory, random pr s on practical ap	ocesses, algebra plications.	of polynomials,	
<ul> <li>Brief outline of the course:</li> <li>Probability: classical definition, conditional probability, characteristics of random variables, geometrical probability.</li> <li>Random processes, Markov chains.</li> <li>Polynomials over a field. Decomposition into irreducible factors. Roots of polynomials.</li> <li>Formulation of linear and integer programs. Graphic solution. Simplex method. Duality. Algorithm for integer programming.</li> </ul>						
Recommended literature: G. Birkhoff, S. MacLane: Prehľad modernej algebry, Alfa Bratislava, 1979 T. Katriňák a kol.: Algebra a teoretická aritmetika 1, Alfa Bratislava, 1985 Plesník, Dupáčová, Vlach: Lineárne programovanie, Alfa, Bratislava 1990 Riečan a kol.:Pravdepodobnosť a matematická štatistika, Alfa, Bratislava, 1984 Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006						
Course language: Slovak						
Notes:						
Course assessment Total number of assessed students: 85						
А	В	C	D	Е	FX	
17.65	22.35	18.82	18.82	21.18	1.18	
Provides: doc. RNDr. Miroslav Ploščica, CSc., doc. RNDr. Roman Soták, PhD.						

**Date of last modification:** 03.05.2015

Approved: prof. RNDr. Viliam Geffert, DrSc.

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science					
<b>Course ID:</b> ÚINF/ SWB/15	Course name: Semantic web					
Course type, scope a Course type: Practic Recommended cour Per week: 3 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 42 esent					
Number of ECTS cr	edits: 4					
Recommended seme	ster/trimester of the course: 2., 4.					
Course level: II.						
Prerequisities:						
Conditions for cours	e completion:					
Learning outcomes: To understand seman semantic web applica databases.	ntic web languages RDF, RDFS, OWL, ability to use them ina practical tions, experience with ontology modelling and communication with ontology					
<ul> <li>Semantic web - mot</li> <li>XML, syntax, prog</li> <li>Examples in of proce</li> <li>Semantic web mode</li> <li>Semantic web query</li> <li>Software tools: Jena</li> <li>Introduction to Dese</li> <li>Inferencing in Desc</li> </ul>	ivation, problems, visions. ramming models DOM, SAX, StAX, namespaces in XML, XPath, XQuery. ssing in Java. elling languages: RDF, RDFS, OWL / language SPARQL n, Sesame, Protege, Ontopia cription logic					
Recommended litera [1]Grigoris Antoniou Edition. MIT Press, 2 [2] Franz Baader, Die Peter Patel-Schneider Implementation and 4 [3] http://www.openr [4] http://protege.star [5] http://jena.sourcet [6] http://www.w3.or	ture: and Frank van Harmelen: Semantic Web Primer, Second 2008. ISBN: 978-0-262-01242-3 290 Calvanese, Deborah McGuinness, Daniele Nardi, 7: The Description Logic Handbook. Theory, Applications df.org/ aford.edu/ forge.net/ g/TR/rdf-sparql-query/					
Course language:						

Notes:

Course assessment Total number of assessed students: 50					
A B C D E FX					
72.0	8.0	10.0	4.0	2.0	4.0
Provides: RNDr. Peter Gurský, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J	. Šafárik Unive	rsity in Košice				
Faculty: Facult	y of Science					
<b>Course ID:</b> ÚIN SPS1/15	VF/ Course 1	name: Seminar in 1	network progra	mming		
Course type, sc Course type: I Recommended Per week: 3 Pe Course metho	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present					
Number of EC	<b>FS credits:</b> 3					
Recommended	semester/trim	ester of the course	e: 1., 3.			
Course level: I.	, II.					
Prerequisities:						
Conditions for	course comple	tion:				
Learning outco To render curre	mes: nt technologies	of programing in r	network distrib	uted environment.		
Brief outline of Basics of progr Procedure Calls ASP, JSP, Com Model, XML, Y Advanced level	<b>Brief outline of the course:</b> Basics of programming the client-server applications, iterative and concurrent servers, Remote Procedure Calls. Server-side programming, CGI, PHP, basics of Perl and Python. Script languages, ASP, JSP, Component Object Model, Corba, database connection's interfaces. Document Object Model, XML, XSL, dynamic extensions of HTML. Advanced level of programming is expected					
Recommended Internet sources	Recommended literature: Internet sources and specifications.					
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 92						
А	В	C	D	E	FX	
65.22	65.22 20.65 11.96 1.09 1.09 0.0					
Provides: RND	Provides: RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last mo	dification: 03.0	05.2015				
Approved: prof	. RNDr. Viliam	Geffert, DrSc.				

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	cience					
<b>Course ID:</b> ÚINF/ DST1a/15	Course name: Seminar in theoretical informatics					
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of ECTS cr	edits: 2					
Recommended seme	ster/trimester of the cours	e: 2.				
Course level: II.						
Prerequisities:						
Conditions for cours	e completion:					
<b>Learning outcomes:</b> To study new knowle current state in the ar	edges in the area of the theor ea using conference proceed	etical informatics in the seminar form. To follow lings and special journals.				
<b>Brief outline of the c</b> Seminar is oriented to theoretical foundation	<b>ourse:</b> o an individual work with stuns of informatics.	adents which have the diploma theses in the area:				
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents						
Course language:	Course language:					
Notes:						
Course assessment Total number of assessed students: 11						
	abs n					
	100.0 0.0					
Provides: prof. RNDr. Viliam Geffert, DrSc.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šafárik University in Košice						
Faculty: Faculty of S	cience					
<b>Course ID:</b> ÚINF/ DST1b/15	Ourse ID: ÚINF/       Course name: Seminar in theoretical informatics         ST1b/15       ST1b/15					
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of ECTS cro	edits: 2					
Recommended seme	ster/trimester of the course	2: 3.				
Course level: II.						
Prerequisities: ÚINF	/DST1a/15					
Conditions for cours	e completion:					
Learning outcomes: To study new knowle current state in the ar	dges in the area of the theor ea using conference proceed	etical informatics in the seminar form. To follow ings and special journals.				
<b>Brief outline of the c</b> Seminar is oriented to theoretical foundation	ourse: an individual work with stuns of informatics.	idents which have the diploma theses in the area:				
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents						
Course language:	Course language:					
Notes:						
Course assessment Total number of asses	Course assessment Total number of assessed students: 8					
	abs n					
	100.0 0.0					
Provides: prof. RNDr. Viliam Geffert, DrSc.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šafárik University in Košice						
Faculty: Faculty of S	Faculty: Faculty of Science					
<b>Course ID:</b> ÚINF/ DSA1a/15	Course name: Seminar on	applied informatics				
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of ECTS cro	edits: 2					
Recommended seme	ster/trimester of the cours	e: 2.				
Course level: II.						
Prerequisities:						
Conditions for cours	e completion:					
Learning outcomes: To study new knowle state in the area using	dges in the area of applied in g conference proceedings an	nformatics in the seminar form. To follow current d specialized journals.				
Brief outline of the c Seminar is oriented to information system d	<b>ourse:</b> o an individual work with s evelopment, application of o	tudents which have the diploma theses related to combinatorial algorithms etc.				
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents						
Course language:						
Notes:						
Course assessment Total number of assessed students: 20						
	abs	n				
	95.0 5.0					
Provides: doc. RNDr. Gabriela Andrejková, CSc.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science			
Course ID: ÚINF/ DSA1b/15Course name: Seminar on applied informatics			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present			
Number of ECTS credits: 2			
Recommended semester/trimester of the course: 3.			
Course level: II.			
Prerequisities:			
Conditions for course completion:			
<b>Learning outcomes:</b> To study new knowledges in the area of applied informatics in the seminar form. To follow current state in the area using conference proceedings and specialized journals.			
<b>Brief outline of the course:</b> Seminar is oriented to an individual work with students which have the diploma theses related to information system development, application of combinatorial algorithms etc.			
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents			
Course language:			
Notes:			
Course assessment Total number of assessed students: 18			
abs n			
100.0 0.0			
Provides: doc. RNDr. Gabriela Andrejková, CSc., prof. RNDr. Gabriel Semanišin, PhD.			
Date of last modification: 03.05.2015			
Approved: prof. RNDr. Viliam Geffert, DrSc.			

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
<b>Course ID:</b> ÚINF SGV1/16	E/ Course na	Course name: Seminar on computer graphics and vision			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of ECTS	S credits: 3				
Recommended se	emester/trimes	ster of the cours	e: 2.		
Course level: II.					
Prerequisities:					
Conditions for co	ourse completi	on:			
Learning outcomes:					
<b>Brief outline of the course:</b> Seminar is connecte to the lecture UGR Introduction to computer graphics. In seminar form students presents actual theoretical and implementation problems. Main goal in interest is oriented to quick algorithms of computer graphics, geometric modelling and realistic drawing of scenes. Knowledge from the lecture UGR and good programmers experience are supposed.					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 45					
Α	В	С	D	Е	FX
68.89	17.78	11.11	2.22	0.0	0.0
Provides: RNDr. Rastislav Krivoš-Belluš, PhD., doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 02.03.2016					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science			
<b>Course ID:</b> ÚINF/ DSL1a/15	Course name: Seminar on logic of information systems		
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent		
Number of ECTS cr	edits: 2		
Recommended seme	ster/trimester of the cours	e: 2.	
Course level: II.			
Prerequisities:			
<b>Conditions for course completion:</b> Presentation of selected research paper related to student's diploma thesis. Continuous presentation of thesis results.			
<b>Learning outcomes:</b> To study new knowledges in the area of logic of information and knowledge systems in the seminar form. To follow current state in the area using conference proceedings and special journals.			
<b>Brief outline of the course:</b> Seminar is oriented to an individual work with students which have the diploma theses in the area: logic of information systems.			
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.			
Course language:			
Notes:			
Course assessment Total number of assessed students: 10			
	abs	n	
	100.0	0.0	
Provides: RNDr. Peter Gurský, PhD.			
Date of last modification: 05.02.2019			
Approved: prof. RNDr. Viliam Geffert, DrSc.			

University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚINF/ DSL1b/15	Course name: Seminar on logic of information systems		
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present			
Number of ECTS cr	edits: 2		
Recommended seme	ster/trimester of the cours	e: 3.	
Course level: II.			
Prerequisities: ÚINF	/DSL1a/15		
<b>Conditions for course completion:</b> Presentation of selected research paper related to student's diploma thesis. Continuous presentation of thesis results.			
<b>Learning outcomes:</b> To study new knowledges in the area of logic of information and knowledge systems in the seminar form. To follow current state in the area using conference proceedings and special journals.			
<b>Brief outline of the course:</b> Seminar is oriented to an individual work with students which have the diploma theses in the area: logic of information systems.			
Recommended literature: Special and research literature connected to diploma theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.			
Course language:			
Notes:			
Course assessment Total number of assessed students: 20			
	abs	n	
95.0 5.0			
Provides: RNDr. Peter Gurský, PhD.			
Date of last modification: 05.02.2019			
Approved: prof. RNDr. Viliam Geffert, DrSc.			

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science	Faculty: Faculty of Science			
Course ID: ÚINF/ DSN1a/15Course name: Seminar on r	INF/       Course name: Seminar on neural networks and stringology			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of ECTS credits: 2				
Recommended semester/trimester of the course	:2.			
Course level: II.				
Prerequisities:				
Conditions for course completion:				
<b>Learning outcomes:</b> To study new knowledges in the area of neural networks and stringology in the seminar form. To follow current state in the area using conference proceedings and special journals.				
<b>Brief outline of the course:</b> Seminar is oriented to an individual work with students which have the diploma theses in the area: neural networks and stringology.				
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.				
Course language:				
Notes:				
Course assessment Total number of assessed students: 14				
abs	n			
92.86 7.14				
Provides: doc. RNDr. Gabriela Andrejková, CSc.				
Date of last modification: 03.05.2015				
Approved: prof. RNDr. Viliam Geffert, DrSc.				

University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	Faculty: Faculty of Science			
<b>Course ID:</b> ÚINF/ DSN1b/15	Course name: Seminar on	neural networks and stringology		
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present			
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the course	e: 3.		
Course level: II.				
Prerequisities:				
Conditions for cours	e completion:			
<b>Learning outcomes:</b> To study new knowledges in the area of neural networks and stringology in the seminar form. To follow current state in the area using conference proceedings and special journals.				
<b>Brief outline of the course:</b> Seminar is oriented to an individual work with students which have the diploma theses in the area: neural networks and stringology.				
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.				
Course language:				
Notes:				
Course assessment Total number of assessed students: 7				
	abs n			
100.0 0.0				
Provides: doc. RNDr. Gabriela Andrejková, CSc.				
Date of last modification: 03.05.2015				
Approved: prof. RNDr. Viliam Geffert, DrSc.				

Faculty: Faculty of Science         Course ID: ÚINF/ DSB1a/15       Course name: Seminar on security of computer networks         Course type, scope and the method:       Course type; Practice         Recommended course-load (hours):       Per week: 2 Per study period: 28         Course method: present       Course type; Practice:         Number of ECTS credits: 2       Recommended semester/trimester of the course: 2.         Course level: II.       Prerequisities:         Conditions for course completion:       Learning outcomes:         Brief outline of the course:       Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks.         Recommended literature:       Special and research literature connected to Diplomaa theses according to recommendations of supervisor.         Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998       ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.         ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.       Course language:         Notes:       Course language:       Total number of sessersed students: 17			
Course ID: ÚINF/       Course name: Seminar on security of computer networks         DSB1a/15       Course type, scope and the method:         Course type, scope and the method:       Course type: Practice         Recommended course-load (hours):       Per week: 2 Per study period: 28         Course method: present       Course type: Practice         Number of ECTS credits: 2       Recommended semester/trimester of the course: 2.         Course level: II.       Prerequisities:         Conditions for course completion:       Learning outcomes:         Brief outline of the course:       Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks.         Recommended literature:       Special and research literature connected to Diplomaa theses according to recommendations of supervisor.         Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998       ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.         ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.       Course language:         Notes:       Course language:       Total number of osceesed students: 17			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present Number of ECTS credits: 2 Recommended semester/trimester of the course: 2. Course level: II. Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks. Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako pisať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents. Course language: Notes: Course assessment Total number of accessed students: 17.			
Number of ECTS credits: 2         Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         Brief outline of the course:         Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks.         Recommended literature:         Special and research literature connected to Diplomaa theses according to recommendations of supervisor.         Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998         ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.         ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.         Course language:         Notes:         Course assessment         Total number of accessed students: 17			
Recommended semester/trimester of the course: 2.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         Brief outline of the course:         Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks.         Recommended literature:         Special and research literature connected to Diplomaa theses according to recommendations of supervisor.         Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998         ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.         ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.         Course language:         Notes:         Course assessment         Total number of assessed students: 17			
Course level: II. Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks. Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents. Course language: Notes: Course assessment Total number of assessed students: 17			
Prerequisities:         Conditions for course completion:         Learning outcomes:         Brief outline of the course:         Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks.         Recommended literature:         Special and research literature connected to Diplomaa theses according to recommendations of supervisor.         Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998         ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.         ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.         Course language:         Notes:         Course assessment         Total number of assessed students: 17			
Conditions for course completion: Learning outcomes: Brief outline of the course: Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks. Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents. Course language: Notes: Course assessment Total number of assessed students: 17			
Learning outcomes:         Brief outline of the course:         Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks.         Recommended literature:         Special and research literature connected to Diplomaa theses according to recommendations of supervisor.         Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998         ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.         ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.         Course language:         Notes:         Course assessment         Total number of assessed students: 17			
Brief outline of the course: Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks. Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents. Course language: Notes: Course assessment			
Recommended literature:         Special and research literature connected to Diplomaa theses according to recommendations of supervisor.         Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998         ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.         ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.         Course language:         Notes:         Course assessment         Total number of assessed students: 17			
Course language: Notes: Course assessment Total number of assessed students: 17			
Notes: Course assessment Total number of assessed students: 17			
Course assessment			
Course assessment Total number of assessed students: 17			
abs n			
94.12 5.88			
Provides: doc. RNDr. Jozef Jirásek, PhD.			
Date of last modification: 03.05.2015			
Annroved prof PNDr Viliam Coffort DrSe			

University: P. I. Šafárik University in Košice			
Faculty: Faculty of Science			
Course ID: ÚINF/       Course name: Seminar on security of computer networks         DSB1b/15       Course name: Seminar on security of computer networks			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present			
Number of ECTS credits: 2			
Recommended semester/trimester of the course: 3.			
Course level: II.			
Prerequisities:			
Conditions for course completion:			
Learning outcomes: In the seminar form to study new knowledges in the area of cryptology and security of computer networks. To follow current state in the area using conference proceedings and special journals.			
<b>Brief outline of the course:</b> Seminar is oriented to an individual work with students which have the diploma theses in the area: the security of computer networks.			
Recommended literature: Special and research literature connected to Diplomaa theses according to recommendations of supervisor. Katuščák, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.			
Course language:			
Notes:			
Course assessment Total number of assessed students: 16			
abs n			
100.0 0.0			
Provides: doc. RNDr. Jozef Jirásek, PhD.			
Date of last modification: 03.05.2015			
Approved: prof. RNDr. Viliam Geffert, DrSc.			

University: P. J. Šafárik University in Košice	University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science				
Course ID: ÚINF/ Course name: Seminar to SDI1a/15	diploma theses in informatics			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of ECTS credits: 2				
Recommended semester/trimester of the course	se: 2.			
Course level: II.				
Prerequisities: ÚINF/PDSI1/15				
Conditions for course completion:				
Learning outcomes: Monitoring and public presentation of work done so fare on thesis preparation				
<b>Brief outline of the course:</b> Every thesis has a compulsory theoretical part and may also contain a software part. To gain recognition, the following is necessary: a detailed compilation of studied literature (a minimum of thirty pages) and at least twenty pages of text containing the candidate's own views of the problem area, possible research goals, own results are welcome (if the thesis is purely theoretical, this will be judged more strictly). For the SW part: a tested implementation (must conform to user requirements, help and user friendly user interface not necessary at this stage) and access to source texts. For both parts there will be an oral presentation and discussion.				
Recommended literature:				
Course language:				
Notes:				
Course assessment Total number of assessed students: 169				
abs	n			
94.67 5.33				
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Ondrej Krídlo, PhD.				
Date of last modification: 03.05.2015				
Approved: prof. RNDr. Viliam Geffert, DrSc.				

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	cience					
<b>Course ID:</b> ÚINF/ SDI1b/15	Course name: Seminar to	diploma theses in informatics				
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent					
Number of ECTS cr	edits: 2					
Recommended seme	ster/trimester of the cours	e: 3.				
Course level: II.						
Prerequisities: ÚINF	C/SDI1a/15					
Conditions for cours	e completion:					
Learning outcomes: Monitoring and public presentation of work done so fare on thesis preparation						
<b>Brief outline of the course:</b> Every thesis has a compulsory theoretical part and may also contain a software part. To gain recognition, the following is necessary: a detailed compilation of studied literature (a minimum of thirty pages) and at least twenty pages of text containing the candidate's own views of the problem area, possible research goals, own results are welcome (if the thesis is purely theoretical, this will be judged more strictly). For the SW part: a tested implementation (must conform to user requirements, help and user friendly user interface not necessary at this stage) and access to source texts. For both parts there will be an oral presentation and discussion.						
Recommended literature:						
Course language:						
Notes:						
Course assessment Total number of assessed students: 160						
	abs n					
99.38 0.63						
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Ondrej Krídlo, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						
University: P. J. Šafá	University: P. J. Šafárik University in Košice					
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Faculty: Faculty of S	cience					
<b>Course ID:</b> KPPaPZ/SPVKE/07	<b>Course name:</b> Social-Psychological Training of Coping with Critical Life Situations					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of ECTS cr	edits: 2					
Recommended seme	ster/trimes	ter of the course: 2.				
Course level: II.						
Prerequisities:						
Conditions for cours	e completi	on:				
Learning outcomes:						
Brief outline of the c	ourse:					
Recommended litera	iture:					
Course language:						
Notes:						
Course assessment Total number of asses	ssed studen	ts: 126				
abs		n	Z			
97.62	97.62 2.38 0.0					
Provides: Mgr. Ondrej Kalina, PhD.						
Date of last modification: 11.02.2021						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J	University: P. J. Šafárik University in Košice							
Faculty: Facult	Faculty: Faculty of Science							
<b>Course ID:</b> ÚIN PRJm1a/15	INF/       Course name: Software project							
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present								
Number of EC	TS credits: 4							
Recommended	semester/trime	ster of the cours	e: 1.	_				
Course level: II	•							
Prerequisities:								
Conditions for	course complet	ion:						
Learning outco To learn a meth specifications, s	omes: ods in a preparation solution, implem	tion of some biggenentation, testing)	er software in all	phases of its life	cycle (analysis,			
The students an They report reg defense session This semester is system specific Project themes enrolment for t subjects (neural systems and co above subjects <b>Recommended</b>	Brief outline of the course: The students are expected to work on their own on a project specified by the project supervisor. They report regularly on their progress. Before recognition they report on their progress in public defense session before an examination board. This semester is mainly devoted to a detailed analysis of user requirements and corresponding system specification. Project themes will be published at the Computer Science Department prior to the students final enrolment for the following year. The projects will be divided into five areas according to their subjects (neural networks, computer network security, mathematical models, logic of information systems and computer graphics). The student shall enrol in one of the seminars dealing with the above subjects in accordance with the subject of his/her project.							
Course languag	ge:							
Notes:	Notes:							
Course assessment Total number of assessed students: 33								
Α	В	B C D E FX						
72.73 9.09 3.03 3.03 9.09 3.03								
Provides: Mgr.	Alexander Szab	ari, PhD.						
Date of last mo	dification: 03.0	5.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.								

University: P I	Šafárik Univers	ity in Košice					
Equity: Facult	v of Sojongo						
Faculty: Facult			•		_		
<b>Course ID:</b> UIN PRJm1b/15	NF/ Course na	Course name: Sofware project					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present							
Number of EC	TS credits: 4				-		
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2.				
Course level: II	•						
Prerequisities:							
Conditions for	course completi	on:					
<b>Learning outco</b> To learn a meth specifications, s	omes: ods in a preparation solution, implement	ion of some bigge entation, testing)	er software in all	phases of its lif	è cycle (analysis,		
Brief outline of The work in the on a documetati	the course: seminar continu ion of the project	es on the project and a public pre	by a realisation of the	of the developed results.	l solution, a work		
Recommended	literature:						
Course languag	ge:						
Notes:							
Course assessment Total number of assessed students: 14							
А	В	С	D	Е	FX		
78.57	78.57 7.14 7.14 0.0 0.0 7.14						
Provides: Mgr. Alexander Szabari, PhD.							
Date of last modification: 03.05.2015							
Approved: prof. RNDr. Viliam Geffert, DrSc.							

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚTVŠ/ TVa/11	Course name: Sports Activities I.
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: cor	nd the method: ce rse-load (hours): dy period: 28 mbined, present
Number of ECTS cr	edits: 2
Recommended seme	ster/trimester of the course: 1.
Course level: I., I.II.,	II.
Prerequisities:	
Conditions for course Conditions for course Min. 80% of active p Learning outcomes: Learning outcomes:	e completion: e completion: articipation in classes.
Increasing physical relationship of studer	condition and performance within individual sports. Strengthening the its to the selected sports activity and its continual improvement.
Brief outline of the c Brief outline of the co Within the optional s University provides a floorball, yoga, pilate tennis, sports for unfi In the first two seme and particularities of a physical condition, c Last but not least, the means of a special pr In addition to these physical education tra the premises of the fac	ourse: burse: ubject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik for students the following sports activities: aerobics, basketball, badminton, es, swimming, body-building, indoor football, self-defence and karate, table it persons, streetball, tennis, and volleyball. sters of the first level of education students will master basic characteristics individual sports, motor skills, game activities, they will improve level of their oordination abilities, physical performance, and motor performance fitness. important role of sports activities is to eliminate swimming illiteracy and by ogram of medical physical education to influence and mitigate unfitness. sports, the Institute offers for those who are interested winter and summer anings with an attractive program and organises various competitions, either at culty or University or competitions with national or international participation.

#### **Course language:**

Notes:

Course assessment Total number of assessed students: 14050								
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs	
88.48	0.07	0.0	0.0	0.0	0.04	7.51	3.9	
<b>Provides:</b> Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.								
Date of last modification: 18.03.2019								
Approved: prof. RNDr. Viliam Geffert, DrSc.								

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚTVŠ/ TVb/11	Course name: Sports Activities II.
Course type, scope a Course type: Practiv Recommended cou Per week: 2 Per stu Course method: co	and the method: ce rse-load (hours): ady period: 28 mbined, present
Number of ECTS cr	edits: 2
Recommended seme	ester/trimester of the course: 2.
Course level: I., I.II.,	II.
Prerequisities:	
<b>Conditions for course</b> Conditions for course Final assessment and	se completion: e completion: active participation in classes - min. 75%.
Learning outcomes: Learning outcomes: Increasing physical relationship of studer	condition and performance within individual sports. Strengthening the its to the selected sports activity and its continual improvement.

#### Brief outline of the course:

Brief outline of the course:

Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, basketball, badminton, floorball, yoga, pilates, swimming, body-building, indoor football, self-defence and karate, table tennis, sports for unfit persons, streetball, tennis, and volleyball.

In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness. In addition to these sports, the Institute offers for those who are interested winter and summer

physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

#### **Recommended literature:**

#### **Course language:**

Notes:

Course assessment Total number of assessed students: 11330								
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs	
85.75	0.56	0.02	0.0	0.0	0.05	9.87	3.75	
<b>Provides:</b> Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.								
Date of last modification: 18.03.2019								
Approved: prof. RNDr. Viliam Geffert, DrSc.								

University:	P. J. Šafá	rik University i	n Košice					
Faculty: Fa	culty of S	cience						
<b>Course ID:</b> TVc/11	ÚTVŠ/	Course name: Sports Activities III.						
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined, present								
Recommen	ded seme	ster/trimester	of the cours	<b>e:</b> 3.				
Course leve	el: I., I.II.,	II.						
Prerequisit	ies:							
Conditions	for cours	e completion:						
Learning o	utcomes:							
Brief outlin	e of the c	ourse:						
Recommen	ded litera	ture:						
Course lang	guage:							
Notes:								
Course asso Total numb	e <b>ssment</b> er of asses	ssed students: 8	383					
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs	
90.11	0.05	0.01	0.0	0.0	0.02	4.04	5.76	
<b>Provides:</b> Mgr. Marcel Čurgali, Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.								
Date of last modification: 03.05.2015								
Approved: prof. RNDr. Viliam Geffert, DrSc.								

University:	University: P. J. Šafárik University in Košice						
Faculty: Fa	culty of S	cience					
<b>Course ID:</b> TVd/11	ÚTVŠ/	Course name: Sports Activities IV.					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined, present							
Number of	ECTS cr	edits: 2					
Recommen	ded seme	ster/trimester	of the cours	<b>e:</b> 4.			
Course leve	el: I., I.II.,	II.					
Prerequisit	ies:						
Conditions	for cours	e completion:					
Learning o	utcomes:						
Brief outlin	e of the c	ourse:					
Recommen	ded litera	ture:					
Course lang	guage:						
Notes:							
Course asso Total numb	e <b>ssment</b> er of asses	ssed students: 5	101				
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.2	85.2 0.29 0.04 0.0 0.0 0.0 6.76 7.7						
<b>Provides:</b> Mgr. Marcel Čurgali, Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
Date of last modification: 03.05.2015							
Approved:	prof. RNI	Dr. Viliam Geff	ert, DrSc.				

University: P. J. Šafá	rik University in Košice						
Faculty: Faculty of Science							
<b>Course ID:</b> ÚMV/ NPR/19	Course name: Stochastic processes						
Course type, scope a Course type: Lectur Recommended cou Per week: 3 / 2 Per Course method: pro	and the method: re / Practice rse-load (hours): study period: 42 / 28 esent						
Number of ECTS cr	edits: 6						
Recommended seme	ester/trimester of the course: 4.						
Course level: II.							
Prerequisities:							
<b>Conditions for cours</b> Test and individual p Exam	se completion: roject work.						
Learning outcomes: To obtain knowledge domain. To study properties of their application in fi	e of the stationary stochastic processes analysis in time domain and spectral of random processes with discrete time (time series) and continuous time and nance.						
<b>Brief outline of the o</b> 1. Stationary precess 2. Time domain analy 3. Frequency domain 4. Prediction of time 5. Random processes 6. Brownian motion, 7. The Black-Scholes	course: , linear process, causal and invertible process. ysis (autocovariance and partial autocovariance function) analysis (spectral density and distribution function, periodogram) series with continuous time (fundamental concepts) Itô's process, Itô's lemma and its application s formula						
Recommended litera 1. Brockwell P., Dav York, 2016 2. Prášková Z.: Zákla 3. Tsay R.: Analysis 4. Shumway R., Stof Springer, New York, 5. Melicherčík I., Ola 2005 (in Slovak) 6. Oksendal B.K.: St	ature: is R.: Introduction to Time Series and Forecasting, 3rd ed., Springer, New ady náhodných procesů II, Karolinum, Praha, 2004 (in Czech) of Financial Time Series, 3rd ed., Wiley Interscience, New Jersey, 2010 fer D.: Time Series Analysis and Its Applications with R Examples, 4th ed., 2017 śarová L., Úradníček V.: Kapitoly z finančnej matematiky, Epos, Bratislava, ochastic Differential Equations, 6th ed., Springer, 2014						
<b>Course language:</b> Slovak							
Notes:							

Course assessment Total number of assessed students: 55							
A B C D E FX							
32.73	29.09	16.36	12.73	7.27	1.82		
Provides: prof.	RNDr. Ivan Žežu	ıla, CSc., RNDr.	Martina Hančov	á, PhD.			
Date of last modification: 11.03.2019							
Approved: prof. RNDr. Viliam Geffert, DrSc.							

University: P. J	. Šafárik Univers	ity in Košice					
Faculty: Facult	y of Science						
<b>Course ID:</b> ÚIN SVK1/15	rse ID: ÚINF/ Course name: Student scientific conference						
Course type, sc Course type: Recommended Per week: Per Course metho	cope and the met d course-load (h r study period: d: present	thod: ours):					
Number of EC	1 S credits: 4		4				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 4.				
Course level: 1.	, 11.						
Prerequisities:							
Conditions for	course completi	on:					
Learning outco	omes:						
Brief outline of	the course:						
Recommended	literature:						
Course languag	ge:						
Notes:							
Course assessment Total number of assessed students: 171							
А	В	С	D	Е	FX		
100.0 0.0 0.0 0.0 0.0							
Provides:							
Date of last modification: 03.05.2015							
Approved: prof. RNDr. Viliam Geffert, DrSc.							

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of Science						
Course ID: ÚTVŠ/ LKSp/13	Course name: Summer Course-Rafting of TISA River					
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: cor	nd the method: ce rse-load (hours): y period: 36s mbined, present					
Number of ECTS cr	edits: 2					
Recommended seme	ster/trimester of the course:					
Course level: I., II.						
Prerequisities:						
Conditions for course Conditions for course Attendance Final assessment: Rat	e completion: completion: ft control on the waterway (attended/not attended)					
Learning outcomes: Learning outcomes: Students have knowled	edge of rafts (canoe) and their control on waterway.					
<b>Brief outline of the c</b> Brief outline of the co 1. Assessment of diff 2. Safety rules for raf 3. Setting up a crew 4. Practical skills trai 5. Canoe lifting and co 6. Putting the canoe i 7. Getting in the canoe 8. Exiting the canoe 9. Taking the canoe o 10. Steering a) The pry stroke (on b) The draw stroke 11. Capsizing 12. Commands	ourse: ourse: iculty of waterways ting ning using an empty canoe carrying n the water without a shore contact ne out of the water fast waterways)					
Recommended litera	Recommended literature:					
Course language:						
Notes:						

<b>Course assessment</b> Total number of assessed students: 153					
abs	n				
45.75	54.25				
Provides: Mgr. Dávid Kaško, PhD.					
Date of last modification: 18.03.2019					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚTVŠ/ KP/12	Course name: Survival Course
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: cor	nd the method: ce rse-load (hours): y period: 36s mbined, present
Number of ECTS cr	edits: 2
Recommended seme	ster/trimester of the course:
Course level: I., II.	
Prerequisities:	
<b>Conditions for cours</b> Conditions for course Attendance Final assessment: cor	e completion: completion: ntinuous fulfilment of all tasks within the course
Learning outcomes: Learning outcomes: Students will be far conditions as they wi and demanding situa course develops team require overcoming o	niliarized with principles of safe stay and movement in extreme natural ll obtain theoretical knowledge and practical skills to solve the extraordinary tions connected with survival and minimization of damage to health. The n work and students will learn how to manage and face the situations that of obstacles.
<ul> <li>Brief outline of the c</li> <li>Brief outline of the c</li> <li>Brief outline of the c</li> <li>Lectures: <ol> <li>Principles of behave</li> <li>Preparation and lead</li> <li>Objective and subjic</li> <li>Principles of hygic</li> <li>Exercises: <ol> <li>Movement in terrat</li> <li>Preparation of imp</li> <li>Water treatment and</li> </ol> </li> </ol></li></ul>	ourse: Durse: Viour and safety for movement and stay in unknown mountains adership of tour ective danger in mountains one and prevention of damage to health in extreme conditions in, orientation and navigation in terrain (compasses, GPS) rovised overnight stay ad food preparation.
Recommended litera	iture:
Course language:	
Notes:	

Course assessment Total number of assessed students: 393					
abs	n				
44.53	55.47				
Provides: MUDr. Peter Dombrovský, Mgr. Marek Valanský					
Date of last modification: 15.03.2019					
Approved: prof. RNDr. Viliam Geffert, DrSc.					

University: P. J.	University: P. J. Šafárik University in Košice					
Faculty: Faculty	Faculty: Faculty of Science					
<b>Course ID:</b> ÚIN SLO1a/15	NF/ Course n	Course name: Symbolic logic				
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present						
Number of EC	<b>FS credits:</b> 5					
Recommended	semester/trime	ester of the cours	e: 2.			
Course level: I.	, II					
Prerequisities:						
Conditions for	course complet	ion:				
Learning outcomes: To understand basic notions of sentence and predicate logic - sentence, sentence scheme, provability, satisfiability, term, formula. Brief outline of the course: Predicate logic - logic language syntax and semantics, term, formula, Axioms, proof, provability.						
Interpretation, truth, model. Correctness of the predicate logic.						
Recommended literature: GOLDSTERN M., JUDAH H.: The Incompleteness Phenomenon, A New Course in Mathematical Logic, A K Peters, Wellesley, Massachusetts, 1995 http://cs.ics.upjs.sk/~krajci/skola/vyucba/ucebneTexty/logika/logika.pdf						
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 394						
А	В	C	D	E	FX	
24.87	9.9	12.44	11.68	27.92	13.2	
Provides: prof. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J	University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science						
<b>Course ID:</b> ÚIN SLO1b/15	NF/ Co	Course name: Symbolic logic				
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present						
Number of EC	TS credit	<b>s:</b> 5				
Recommended	semester	/trimes	ster of the cours	e: 3.		
Course level: I.	, II.					
Prerequisities:	ÚINF/SL	O1a/15				
Conditions for	course co	mpleti	on:			
<b>Learning outcomes:</b> To understand basic notions of predicate logic – inductive strutures, completeness.						
Brief outline of the course: Boolean algebras. Syntactic model, completeness of predicate logic. Inductive structures in general.						
Recommended literature: GOLDSTERN M., JUDAH H.: The Incompleteness Phenomenon, A New Course in Mathematical Logic, A K Peters, Wellesley, Massachusetts, 1995 http://cs.ics.upjs.sk/~krajci/skola/vyucba/ucebneTexty/logika/logika.pdf						
Course languag	ge:					
Notes:						
Course assessment Total number of assessed students: 70						
А	В		С	D	Е	FX
28.57	12.8	6	25.71	4.29	11.43	17.14
Provides: prof. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Viliam Geffert, DrSc.						

University: P. J. Šafárik University in Košice					
Faculty: Facult	Faculty: Faculty of Science				
Course ID: KPPaPZ/UPR/0	3 Course na	Course name: The Art of Aiding by Verbal Exchange			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of EC	Number of ECTS credits: 2				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 4.		
Course level: II	- -				
Prerequisities:					
<b>Conditions for</b>	course completi	on:			
Learning outcomes:					
Brief outline of the course:					
Recommended	Recommended literature:				
Course language:					
Notes:					
Course assessment Total number of assessed students: 49					
А	В	С	D	Е	FX
85.71	4.08	2.04	2.04	2.04	4.08
Provides: Mgr. Ondrej Kalina, PhD.					
Date of last modification: 18.03.2019					
Approved: prof. RNDr. Viliam Geffert, DrSc.					