CONTENT

1. Certified training course	
2. Citation in Slovak scientific journal	4
3. Citation in international scientific journal.	5
4. Citation in monograph	6
5. Co-investigator of international project	
6. Co-investigator of the applied research project	
7. Co-worker of local project	9
8. Combinatorial algorithms	
9. Computational complexity and models	
10. Dissertation examination	
11. Elaboration of reviewer report	14
12. English Language for PhD Students 1	
13. English Language for PhD Students 2	
14. Enumeration of combinatorial objects	
15. Graph theory	
16. Group theory	
17. Individual study of scientific literature I	
18. Individual study of scientific literature II	
19. International Journal.	
20. International Study Stay less than 30 Days	
21. International Study Stay more than 30 Days	
22. International conference abroad	
23. International peer-reviewed proceedings	
24. Lattice theory	
25. Local Conference	
26. Local conference with international participation	
27. Local journal	
28. Matroid theory	
29. Member of the internal project team	
30. Membership in conference organising committee	
31. Monograph	
32. Monograph in a renowned publishing house	
33. Non-Reviewed International or National Proceedings	
34. Ordered algebraic structures.	
35. Patent, invention, software	
36. Pedagogy for University Teachers	
37. PhD thesis defence	
38. Polyhedral theory	
39. Popularisation of science	
40. Presentation of results in seminar	
41. Principal investigator of an internal grant (VVGS)	
42. Probability method in combinatorics	
43. Psychology for University Lecturers	
44. Q1 journal as co-author	
45. Q1 journal as first or corresponding author	
46. Q2 journal as co-author	
47. Q2 journal as first or corresponding author	
48. Q3 journal as co-author	
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49. Q3 journal as first or corresponding author	
50. Q4 journal as co-author.	61
51. Q4 journal as first or corresponding author	
52. SCI or SCOPUS citation	
53. Scientific work after sending to the editorial office	64
54. Selected topics in graph theory I	65
55. Selected topics in graph theory II	
56. Spring School for PhD Students	
57. Supervision of student scientific work	71
58. Teaching activities 1 h/s	72
59. Teaching activities 2 h/s	73
60. Teaching activities 3 h/s	74
61. Teaching activities 4 h/s	75
62. Theory of planar graphs	
63. Thesis consultant	78
64. Thesis supervising	79
65. Topological graph theory	80
66. Universal algebra	

University: P. J. Šafárik University in KošiceFaculty: Faculty of ScienceCourse ID: ÚMV/ COK/22Course name: Certified training con COK/22Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: presentNumber of ECTS credits: 4	ourse	
Course ID: ÚMV/ COK/22Course name: Certified training con COK/22Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present	burse	
COK/22 Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present	burse	
Course type: Recommended course-load (hours): Per week: Per study period: Course method: present		
Course method: present		
Number of ECTS credits: 4		
Recommended semester/trimester of the course:		
Course level: III.		
Prerequisities:		
Conditions for course completion: Completion of a certified professional/training course. Learning outcomes:		
The PhD student acquires up-to-date scientific knowledge work and familiarizes himself with the methodologies of He confronts his own knowledge and skills with other cour peer discussion in the given scientific field.	f making scientific knowledge available.	
Brief outline of the course:		
Recommended literature:		
Course language:		
Notes:		
Course assessment		
Total number of assessed students: 0	abs n	
	n	
	n 0.0	
abs		
abs 0.0		

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ dCDC/22	Course name: Citation	in Slovak scientific journal
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 2	
Recommended seme	ster/trimester of the cou	irse:
Course level: III.		
Prerequisities:		
Conditions for cours Citation in a national	1	
researched field, bas problem in such a wa source demonstrates	ed on the ability to form ay that generates new known the competence to com- tific knowledge, at the high	d very well-founded scientific knowledge in the nulate research questions, to reflect on a scientific owledge. At the same time, a citation in an indexed nunicate new knowledge, which is a significant ghest expert level.
Recommended litera	ature:	
Course language:		
Notes:		
~	· · · · · · · · · · · · · · · · · · ·	
Course assessment Total number of asse	ssed students: 0	
	ssed students: 0 abs	n
		n 0.0
	abs	
Total number of asse	abs 0.0	

	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ Course name: Citation in international scientific journal ICZC/22 Course name: Citation in international scientific journal		
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	edits: 4	
Recommended seme	ester/trimester of the cou	ırse:
Course level: III.		
Prerequisities:		
Conditions for cours Obtained citation in a	se completion: a foreign scientific journa	ıl.
researched field, bas problem in such a w source demonstrates contribution to scient	ed on the ability to form ay that generates new know	d very well-founded scientific knowledge in the nulate research questions, to reflect on a scientific owledge. At the same time, a citation in an indexed nmunicate new knowledge, which is a significant ghest expert level
Brief outline of the o		
Brief outline of the or Recommended literation		
Recommended litera		
Recommended litera Course language:	ature:	
Recommended litera Course language: Notes: Course assessment	ature:	n
Recommended litera Course language: Notes: Course assessment	ature: ssed students: 0	n 0.0
Recommended litera Course language: Notes: Course assessment	ature: ssed students: 0 abs	
Recommended litera Course language: Notes: Course assessment Total number of asse	ature: ssed students: 0 abs 0.0	

	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ Course name: Citation in monograph		
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 8	
Recommended seme	ester/trimester of the cours	ie:
Course level: III.		
Prerequisities:		
Conditions for cours Obtained citation reg	se completion: sistered in SCI or Scopus.	
researched field, bas problem in such a wa source demonstrates	ed on the ability to formul ay that generates new know the competence to comm tific knowledge, at the highe	very well-founded scientific knowledge in the late research questions, to reflect on a scientific reledge. At the same time, a citation in an indexed unicate new knowledge, which is a significant est expert level.
Recommended litera		
Recommended intera	iture:	
Course languages		
Course language:		
Course language: Notes: Course assessment Total number of asse	ssed students: 0	
Notes: Course assessment	ssed students: 0 abs	n
Notes: Course assessment		n 0.0
Notes: Course assessment	abs	
Notes: Course assessment Total number of asse	abs 0.0	

	rik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ Course name: Co-investigator of international project		
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	edits: 15	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours Membership in the re	se completion: esearch team of an internatio	nal project.
	by solving a specific task	within a team of international project solvers.
task, adhere to the ti experience from the creation of measurab	me schedule and fulfill the implementation of an inter- ile outputs, grant funding of	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal mational project, participation in its key stages,
task, adhere to the ti experience from the creation of measurab Brief outline of the c	me schedule and fulfill the implementation of an inter ile outputs, grant funding of a course:	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal mational project, participation in its key stages,
task, adhere to the ti experience from the creation of measurab Brief outline of the c Recommended litera	me schedule and fulfill the implementation of an inter ile outputs, grant funding of a course:	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal mational project, participation in its key stages,
task, adhere to the ti experience from the creation of measurab Brief outline of the c	me schedule and fulfill the implementation of an inter ile outputs, grant funding of a course:	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal mational project, participation in its key stages,
task, adhere to the ti experience from the creation of measurab Brief outline of the c Recommended litera	me schedule and fulfill the implementation of an inter ile outputs, grant funding of a course:	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal mational project, participation in its key stages,
task, adhere to the ti experience from the creation of measurab Brief outline of the c Recommended litera Course language:	me schedule and fulfill the implementation of an inter ile outputs, grant funding of a course: ature:	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal mational project, participation in its key stages,
task, adhere to the ti experience from the creation of measurab Brief outline of the of Recommended litera Course language: Notes: Course assessment	me schedule and fulfill the implementation of an inter ile outputs, grant funding of a course: ature:	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal mational project, participation in its key stages,
task, adhere to the ti experience from the creation of measurab Brief outline of the of Recommended litera Course language: Notes: Course assessment	me schedule and fulfill the implementation of an inter- ile outputs, grant funding of a course: ature:	rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal national project, participation in its key stages, science.
task, adhere to the ti experience from the creation of measurab Brief outline of the of Recommended litera Course language: Notes: Course assessment	me schedule and fulfill the implementation of an inter- ile outputs, grant funding of a course: ature: essed students: 2 abs	n
task, adhere to the ti experience from the creation of measurab Brief outline of the of Recommended litera Course language: Notes: Course assessment Total number of asse	me schedule and fulfill the implementation of an inter- ile outputs, grant funding of a course: ature: essed students: 2 abs 100.0	n

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ Course name: Co-investigator of the applied research project SPAV/22		
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	redits: 5	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours Co-investigator of th	se completion: e applied research project	
to the solution of the tasks. By solving an objective according to own activities with c	e project objective of applied applied research project, 1 to the established procedure colleagues, to participate in t	cipate in teamwork, to bring his own contribution d research and to take responsibility for assigned he acquires the ability to implement the project , to follow the project schedule, to coordinate his he creation of applied research outputs. The PhD cal course of a grant project with a focus on applied
Brief outline of the o	course:	
Recommended litera	ature:	
Course language:		
Notes:		
Course assessment Total number of asse	ssed students: 0	
	abs	n
0.0 0.0		
Provides:		
Provides: Date of last modifica	ation: 08.11.2022	

	árik University in Košio	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ Course name: Co-worker of local project SDPR/22		
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	urse-load (hours): dy period:	
Number of ECTS ci	redits: 10	
Recommended sem	ester/trimester of the	course:
Course level: III.		
Prerequisities:		
Conditions for cour Co-investigator of th	-	
Learning outcomes: The PhD student der		participate in teamwork, to bring his own contribution
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co	nonstrates the ability to he project objective a project, he acquires th ocedure, to follow the ipate in the creation of purse of the grant project	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the	nonstrates the ability to he project objective a project, he acquires th ocedure, to follow the ipate in the creation of ourse of the grant project course:	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the Recommended liter	nonstrates the ability to he project objective a project, he acquires th ocedure, to follow the ipate in the creation of ourse of the grant project course:	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the o Recommended liter Course language:	nonstrates the ability to he project objective a project, he acquires th ocedure, to follow the ipate in the creation of ourse of the grant project course:	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the Recommended liter	nonstrates the ability to he project objective a c project, he acquires th ocedure, to follow the ipate in the creation of ourse of the grant project course: ature:	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the of Recommended liter Course language: Notes: Course assessment	nonstrates the ability to he project objective a c project, he acquires th ocedure, to follow the ipate in the creation of ourse of the grant project course: ature:	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the of Recommended liter Course language: Notes: Course assessment	nonstrates the ability to he project objective a c project, he acquires th ocedure, to follow the ipate in the creation or ourse of the grant project course: ature: essed students: 14	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience et.
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the of Recommended liter Course language: Notes: Course assessment	nonstrates the ability to he project objective a c project, he acquires th ocedure, to follow the ipate in the creation or ourse of the grant project course: ature: essed students: 14 abs	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience et.
The PhD student der to the solution of t solving the domestic to the established pr colleagues, to partic from the practical co Brief outline of the o Recommended liter Course language: Notes: Course assessment Total number of asse	nonstrates the ability to he project objective a c project, he acquires the ocedure, to follow the ipate in the creation or ourse of the grant project course: ature: essed students: 14 abs 100.0	nd to take responsibility for the assigned tasks. By ne ability to implement the project intention according project schedule, to coordinate his own activities with f outputs. The PhD student gains valuable experience et.

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	Science	
ourse ID: ÚMV/ KOA/10Course name: Combinatorial algorithms		
Course type, scope a Course type: Lectur Recommended cou Per week: 3 Per stu Course method: pro	re rse-load (hours): ıdy period: 42	
Number of ECTS cr	edits: 5	
Recommended seme	ester/trimester of the cours	e: 2., 4.
Course level: III.		
Prerequisities:		
	optimal solution, respective	n that returns the optimal solution or a acceptable ly, of a selected graph problem given by a suitable
Brief outline of the o	course:	
Recommended litera	ature:	
Course language: Slovak and English		
Notes:		
Course assessment Total number of asse	essed students: 2	
	N P	
0.0 100.0		
	0.0	100.0
Provides: doc. RND		100.0
Provides: doc. RNDr Date of last modifica	. Roman Soták, PhD.	100.0

VYMD/15 Course type, scope an Course type: Lecture Recommended cour Per week: 2 Per stud	Course name: Computational complexity and models ad the method:
VYMD/15 Course type, scope ar Course type: Lecture Recommended cour Per week: 2 Per stud	nd the method:
Course type: Lecture Recommended cour Per week: 2 Per stud	
Course method: pres	ly period: 28
Number of ECTS cre	dits: 9
Recommended semes	ter/trimester of the course: 3.
Course level: III.	
Prerequisities:	
Conditions for course Written test combined	e completion: with an oral examination.
of algorithms, fundan about reducibility amo	
machines, RAM and H2. Basic complexityEXPSPACE.3. P versus NP, L vers	space complexity, basic computational models: single- and multi-tape Turing ASP models, unit and logarithmic costs. classes: L, NL, P, NP, PSPACE, NPSPACE, EXPTIME, NEXPTIME us NL. Examples of complete problems in these classes. d logarithmic space reducibilities, definition and basic properties of complete
 5. NP-completenss of 6. Variants of SAT, pro 7. Other NP-complete salesman problem. 8. Subexponential dete balancing. Restricted 	the Boolean formula satisfiability (SAT). oblems related to graph coloring. problems: vertex cover, Hamiltionian paths, subset sum, balancing, traveling erministic solutions for selected NP-complete problems: planar 3-colorability variants with more efficient solutions. lasses: Savitch theorem, inductive counting.
10. Problems complete Boolean formulas (QE	e for NL, P, and PSPACE: graph accessibily (GAP), circuit-value, quantified BF). Islation theorems for time and space. exity classes. exity classes. ierarchy.

J.E. Hopcroft, R.Motwani, J.D. Ullman: Introduction to automata theory, languages, and computation, Addison-Wesley, 2007.

M. Sipser: Introduction to the Theory of Computation, Thomson, 2nd edition, 2006.

S. Arora, B. Barak: Computational Complexity: A Modern Approach, Cambridge Univ. Pess, 2009.

C. Calude and J. Hromkovič: Complexity: A Language-Theoretic Point of View, in G. Rozenberg and A. Salomaa, Handbook of Formal Languages II, Springer, 1997.

G.Brassard, P.Bradley: Fundamentals of algorithmics, Prentice Hall, 1996.

Ch. H. Papadimitriou: Computational Complexity, Addison-Wesley, 1994.

D.P.Bovet, P.Crescenzi: Introduction to the theory of complexity, Prentice Hall, 1994.

Course language:

Slovak or english

Notes:

Content prerequisity: Basic knowlegde in the area of formal languages, automata theory, and programming.

programming.	
Course assessment	
Total number of assessed students: 30	
Ν	Р
0.0	100.0
Provides: prof. RNDr. Viliam Geffert, DrSc.	
Date of last modification: 23.11.2021	
Approved: prof. RNDr. Tomáš Madaras, PhD.	

University: P. J. Šafá	rik University in Koš	sice		
Faculty: Faculty of Science				
Course ID: ÚMV/ dDZS/14	JMV/ Course name: Dissertation examination			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period:			
Number of ECTS cr	edits: 20			
Recommended seme	ster/trimester of the	e course:		
Course level: III.				
Prerequisities:				
Conditions for cours Acquiring the require	-	in the structure defined by the study plan.		
Learning outcomes: Evaluation of student	's competences with	respect to the profile of the graduate.		
•	al exam is organised ident (the course is o	I as a discourse focusing on 3 courses serving as credit chosen by the supervisor of the student after consulting e).		
Recommended litera	ture:			
Course language: slovak				
Notes:				
Course assessment Total number of asse	ssed students: 32			
	N P			
	0.0 100.0			
Provides:				
Date of last modifica	tion: 03.05.2015			
Annroved prof DNI	Dr. Tomáš Madaras, I	2hD		

Faculty: Faculty of S			
	Science		
Course ID: ÚMV/ VPZP/22	The second		
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): ly period:		
Number of ECTS cr	redits: 3		
Recommended seme	ester/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours Elaboration of review	-		
		fically based knowledge in the field of study, as lapproaches. Demonstrates the ability to critically	
assess a professiona recommend another sciences to his own f	l problem and its proposed solution. He applies know ield.	solution, as well as to evaluate it and possibly redge and skills from the field of pedagogical	
assess a professiona recommend another sciences to his own f Brief outline of the c	l problem and its proposed solution. He applies know ield.	solution, as well as to evaluate it and possibly	
assess a professiona recommend another sciences to his own f Brief outline of the o Recommended litera	l problem and its proposed solution. He applies know ield.	solution, as well as to evaluate it and possibly	
assess a professiona recommend another sciences to his own f Brief outline of the o Recommended litera Course language:	l problem and its proposed solution. He applies know ield.	solution, as well as to evaluate it and possibly	
assess a professiona recommend another sciences to his own f Brief outline of the o Recommended litera	l problem and its proposed solution. He applies know ield. course: ature:	solution, as well as to evaluate it and possibly redge and skills from the field of pedagogical	
assess a professiona recommend another sciences to his own f Brief outline of the o Recommended liters Course language: Notes: Course assessment	l problem and its proposed solution. He applies know ield. course: ature: essed students: 0 abs	n	
assess a professiona recommend another sciences to his own f Brief outline of the o Recommended litera Course language: Notes: Course assessment Total number of asse	l problem and its proposed solution. He applies know ield. course: ature:	solution, as well as to evaluate it and possibly redge and skills from the field of pedagogical	
assess a professiona recommend another sciences to his own f Brief outline of the o Recommended liters Course language: Notes: Course assessment	l problem and its proposed solution. He applies know ield. course: ature: essed students: 0 abs	n	
assess a professiona recommend another sciences to his own f Brief outline of the o Recommended litera Course language: Notes: Course assessment Total number of asse	l problem and its proposed solution. He applies know ield. course: ature: essed students: 0 abs 0.0	n	

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: CJP/ Course name: English Language for PhD Students 1 AJD1/07				
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: distance, present				
Number of ECTS credits: 2				
Recommended semester/trimester of the course: 1.				
Course level: III.				
Prerequisities:				
Conditions for course completion: Completion of e-course English for PhD Students (lms.upjs.sk), consultations (1-3). Written assignments - Professional/Academic CV, Short Academic Biography.				
Learning outcomes: The development of students' language skills - reading, writing, listening, speaking; improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects; development of pragmatic competence - students acquire skills for effective and purposeful communication, with focus on Academic English and English for specific/professional purposes, level B2.				
Brief outline of the course: Specific aspects of academic and professional English with focus on correct pronunciation, vocabulary development (noun and verb collocations, phrasal verbs, prepositional phrases, word- formation, formal/informal language, etc.), selected aspects of English grammar (prepositions, grammar tenses, passive voice, etc.), academic writing (professional/academic CV, Short Academic Biography).				
Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí – cvičebnica. Košice, Vydavateľstvo ŠafárikPress, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008. Štepánek, L., J. De Haff a kol.: Academic English-Akademická angličtina. Grada Publishing, a.s., 2011. Armer, T.: Cambridge English for Scientists. CUP, 2011. Ims.upjs.sk				
Course language:				
English, level B2 according to CEFR				

Course assessment Total number of assessed students: 780					
N Ne P Pr abs neabs					
0.0 0.0 45.64 0.0 54.23 0.13					
Provides: Mgr. Zuzana Kolaříková, PhD.					
Date of last modification: 06.09.2024					
Approved: prof. RNDr. Tomáš Madaras, PhD.					

Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) Learning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional burposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.		COURSE INFORMATION LETTER			
Course ID: CJP/ (JD2/07 Course name: English Language for PhD Students 2 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: distance, present Yumber of ECTS credits: 3 Recommended semester/trimester of the course: 2. Course level: III. Prerequisities: Conditions for course completion: Test, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) Acarning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional surposes, level B2. Strief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolafiková, Z., Pe	University: P. J. Šafá	rik University in Košice			
LD2/07 Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: distance, present Number of ECTS credits: 3 Recommended semester/trimester of the course: 2. Course level: III. Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) Learning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list). English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. <t< th=""><th>Faculty: Faculty of S</th><th>cience</th></t<>	Faculty: Faculty of S	cience			
Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: distance, present Wumber of ECTS credits: 3 Recommended semester/trimester of the course: 2. Course level: III. Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS)					
Recommended semester/trimester of the course: 2. Course level: III. Prerequisities: Conditions for course completion: Test, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) cearning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolafiková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. UpJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafařikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP,	Course type: Practic Recommended cour Per week: 2 Per stu	ce rse-load (hours): idy period: 28			
Course level: III. Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) Learning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠaťaříkPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Number of ECTS cr	redits: 3			
Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) Learning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional burposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Recommended seme	ester/trimester of the course: 2.			
Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) .carning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Course level: III.				
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Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Recommended litera	ature:			
	Kolaříková, Z., Petru UPJŠ Košice, 2021. Tomaščíková, S., Roz Vydavateľstvo Šafári McCarthy, M., O'De Štepánek, L., J. De H 2011.	nňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). zenfeld, J. Developing Academic English in Speaking and Writing. ikPress, 2021. II, F.: Academic Vocabulary in Use. CUP, 2008. Iaff a kol.: Academic English-Akademická angličtina. Grada Publishing, a.s.,			
Course language: B2 level according to CEFR	Course language: B2 level according to	o CEFR			
	Notes:				

Course assessment Total number of assessed students: 774					
N Ne P Pr abs neabs					
0.26 0.0 94.06 1.03 4.52 0.13					
Provides: Mgr. Zuzana Kolaříková, PhD.					
Date of last modification: 05.02.2024					
Approved: prof. RNDr. Tomáš Madaras, PhD.					

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of Science				
Course ID: ÚMV/ dEKO/10				
Course type, scope a Course type: Lectu Recommended cou Per week: 4 Per stu Course method: pro	re rse-load (hours): Idy period: 56			
Number of ECTS cr	edits: 7			
Recommended seme	ester/trimester of the cour	se: 2., 4.		
Course level: III.				
Prerequisities:				
Conditions for cours A student is evaluate	se completion: d according to an oral exan	nination.		
		on theory and on special examples sees how to use matical objects.		
Enumeration of inject	permutation group. Burn ctive functions. Enumeration	side's Lemma. Pólya's Enumeration Theorem. on of trees. Enumeration of graphs of given order ralisations of Pólya's Enumeration Theorem.		
Recommended liter F. Harary, E. M. Palr	ature: ner: Graphical Enumeration	n, Academic Press, 1973		
Course language: Slovak and English				
Notes:				
Course assessment Total number of asse	ssed students: 1			
	N P			
	0.0 100.0			
Provides: RNDr. Igo	r Fabrici, Dr. rer. nat.			
Date of last modifica	ation: 17.03.2022			
Annroved: prof RN	Dr. Tomáš Madaras, PhD.			

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚMV/ dTGF/10	Course name: Graph theory
Course type, scope a Course type: Lectur Recommended cour Per week: 3 Per stu Course method: pre	e rse-load (hours): dy period: 42
Number of ECTS cr	edits: 5
Recommended seme	ster/trimester of the course: 1.
Course level: III.	
Prerequisities:	
theorems from the lead the connections betwe	e completion: rse, it is necessary to demonstrate the ability to formulate definitions and ctured material together with their proofs, and to present an understanding of een particular concepts and results. subject is based on the results of an oral exam (consisting of two theoretical
	course, the student is acquainted with other advanced topics of graph theory, by basic courses in discrete mathematics during the bachelor or master degree
Automorphism group	s (2 weeks) n subgraphs (2 weeks) os of graphs (2 weeks) nry properties (3 weeks) ns (2 weeks)
J.Bang-Jensen and G. London, 2001	R. Murty, Graph Theory, Springer-Verlag, 2008 . Gutin: Digraphs: Theory, Algorithms and Applications, Springer-Verlag eory, Springer-Verlag, New York, 1997
Course language: Slovak and English	
Notes:	

Course assessment Total number of assessed students: 23	
Ν	Р
0.0	100.0
Provides: doc. RNDr. Roman Soták, PhD., prof. Fabrici, Dr. rer. nat.	RNDr. Tomáš Madaras, PhD., RNDr. Igor
Date of last modification: 20.09.2021	
Approved: prof. RNDr. Tomáš Madaras, PhD.	

Faculty: Faculty of ScienceCourse ID: ÚMV/ dTGR/10Course name: Group theoryCourse type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: presentNumber of ECTS credits: 7Recommended semester/trimester of the course: Course level: III.			
dTGR/10 Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present Number of ECTS credits: 7 Recommended semester/trimester of the course:			
Course type: Lecture Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present Number of ECTS credits: 7 Recommended semester/trimester of the course:	4.		
Recommended semester/trimester of the course:	4.		
Course level: III.			
Prerequisities:			
Conditions for course completion: written and oral exam			
Learning outcomes: The students learn basic concepts and methods of parts of mathematics.	group theory and their applications in various		
Brief outline of the course: Groups of symmetries, abstract groups. Subgroup subgroups, factorization. Classification of finit permutations, cyclic index, Burnside's lemma, Po Groups in linear algebra.	tely generated Abelian groups. Groups of		
Recommended literature: S. MacLane, G. Birkhoff: Algebra, Alfa Bratislava L. Beran: Grupy a svazy, SNTL Praha, 1974 D.A.R. Wallace: Groups,rings and fields, Springer J. J. Rotman: Advanced Modern Algebra, Amer. M	1998		
Course language: Slovak or English			
Notes:			
Course assessment Total number of assessed students: 21			
N P			
0.0	0.0 100.0		
Provides: doc. RNDr. Miroslav Ploščica, CSc.			
Date of last modification: 08.02.2022			
Approved: prof. RNDr. Tomáš Madaras, PhD.			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of Science			
Course ID: ÚMV/ dISLa/14	Course name: Individual study of scientific literature I		
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:		
Number of ECTS cr	edits: 12		
Recommended seme	ster/trimester of the cours	e: 1., 2	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language: Slovak and English			
Notes:			
Course assessment Total number of asse	ssed students: 41		
abs n			
100.0 0.0			
Provides:			
Date of last modifica	ition: 03.05.2015		
Approved: prof. RNI	Dr. Tomáš Madaras, PhD.		

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of Science				
Course ID: ÚMV/ dISLb/14				
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent			
Number of ECTS cr				
Recommended seme	ster/trimester of the cours	e: 3., 4		
Course level: III.				
Prerequisities:				
Conditions for cours	se completion:			
Learning outcomes:				
Brief outline of the o	course:			
Recommended litera	ature:			
Course language: Slovak and English				
Notes:				
Course assessment Total number of asse	ssed students: 40			
abs n				
100.0 0.0				
Provides:				
Date of last modifica	ation: 03.05.2015			
Approved: prof. RN	Dr. Tomáš Madaras, PhD.			

	arik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ ZC/22	Course name: Internationa	al Journal
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	rse-load (hours): dy period:	
Number of ECTS c	redits: 8	
Recommended sem	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted	se completion: in a foreign journal as an au	uthor/co-author.
level of ability to ide He demonstrates the applying them critica an innovative way, a according to the high	entify, evaluate, and apply co e ability to reflect on a scien ally. He demonstrates the con s well as to generate new ori est qualitative and ethical sta	/co-author, the PhD student demonstrates a high rrect scientific methods or research methodology. tific problem by using the latest approaches and mpetence to use existing theories and concepts in iginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates eviewers' suggestions, to finalize his own ideas.
Brief outline of the	course:	
Recommended liter	ature:	
Course language:		
Notes:		
Course assessment		
Total number of asse	essed students: 1	
	abs	n
		n 0.0
	abs	
Total number of asse	abs 100.0	

:	rik University in Košic	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ ZSP1/22	Course name: Intern	ational Study Stay less than 30 Days
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 5	
Recommended seme	ster/trimester of the o	course:
Course level: III.		
Prerequisities:		
Conditions for cours Completion of a fore	se completion: ign study stay lasting l	ess than 30 days.
Learning outcomes: By completing a shore	rter study stay. the PhD	student demonstrates the ability to reflect on research
By completing a short problems and work of while being able to go in more than one lang in a group with the air of research, to practio	critically with sources enerate new knowledge guage. He acts as a resp m of pushing the bound ce and to the wider pub	e student demonstrates the ability to reflect on research at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas olic. He can competently argue and explain his ideas.
By completing a shor problems and work of while being able to go in more than one lang in a group with the air of research, to practic Brief outline of the c	critically with sources enerate new knowledge guage. He acts as a resp m of pushing the bound ce and to the wider pub	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas
By completing a shor problems and work of while being able to go in more than one lang in a group with the air of research, to practice Brief outline of the c Recommended litera	critically with sources enerate new knowledge guage. He acts as a resp m of pushing the bound ce and to the wider pub	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas
By completing a shorp problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the c Recommended litera Course language:	critically with sources enerate new knowledge guage. He acts as a resp m of pushing the bound ce and to the wider pub	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the c Recommended litera Course language: Notes:	critically with sources enerate new knowledge guage. He acts as a resp m of pushing the bound ce and to the wider pub	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the c Recommended litera Course language:	critically with sources enerate new knowledge guage. He acts as a response of pushing the bound ce and to the wider pub course: nture:	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	critically with sources enerate new knowledge guage. He acts as a response of pushing the bound ce and to the wider pub course: nture: ssed students: 8 abs	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas olic. He can competently argue and explain his ideas.
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	critically with sources enerate new knowledge guage. He acts as a response of pushing the bound ce and to the wider pub course: nture:	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas olic. He can competently argue and explain his ideas.
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	critically with sources enerate new knowledge guage. He acts as a response of pushing the bound ce and to the wider pub course: nture: ssed students: 8 abs	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas olic. He can competently argue and explain his ideas.
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	critically with sources enerate new knowledge guage. He acts as a response of pushing the bound ce and to the wider pub course: nture: ssed students: 8 abs 100.0	at an expert level and in an interdisciplinary context, e. He is able to actively communicate at an expert level onsible independent scientist, works independently and laries of knowledge and transferring them to other areas olic. He can competently argue and explain his ideas.

Faculty: Faculty of S	árik University in Ko	sice
racuity. Faculty of S	Science	
Course ID: ÚMV/ ZSP2/22	Course name: Inte	ernational Study Stay more than 30 Days
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	ırse-load (hours): dy period:	
Number of ECTS ci	redits: 10	
Recommended seme	ester/trimester of th	e course:
Course level: III.		
Prerequisities:		
Conditions for cour Completion of a fore	se completion: eign study stay lasting	g more than 30 days.
by completing the	stary stary, the the	student demonstrates the ability to reflect on research
problems and work while being able to g in more than one lang in a group with the ai of research, to practi	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p	es at an expert level and in an interdisciplinary context, dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas public. He can competently argue and explain his ideas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course:	es at an expert level and in an interdisciplinary context, dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the Recommended liter	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course:	es at an expert level and in an interdisciplinary context, dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the Recommended liter Course language:	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course:	es at an expert level and in an interdisciplinary context, dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the Recommended liter	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course: ature:	es at an expert level and in an interdisciplinary context, dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the of Recommended liter Course language: Notes: Course assessment	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course: ature:	es at an expert level and in an interdisciplinary context dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the of Recommended liter Course language: Notes: Course assessment	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course: ature: essed students: 0	es at an expert level and in an interdisciplinary context dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas public. He can competently argue and explain his ideas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the of Recommended liter Course language: Notes: Course assessment Total number of asse	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course: ature: essed students: 0 abs	es at an expert level and in an interdisciplinary context, dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas public. He can competently argue and explain his ideas
problems and work while being able to g in more than one lang in a group with the ai of research, to practi Brief outline of the of Recommended liter Course language: Notes: Course assessment	critically with source generate new knowled guage. He acts as a re- im of pushing the bou ce and to the wider p course: ature: essed students: 0 abs 0.0	es at an expert level and in an interdisciplinary context, dge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas public. He can competently argue and explain his ideas

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ MKZ/22	Course name: Internationa	al conference abroad
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	redits: 10	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for course Active participation	se completion: in an international conference	e abroad.
demonstrates a high research methodolog scientific problem b competence to use e	level of ability to identify, by in his scientific field. He by using the latest approach xisting theories and concept owledge and communicate	scientific conference abroad, the phD student evaluate, and apply correct scientific methods or demonstrates the ability to reflect on a specific hes and applying them critically. Demonstrates ts in an innovative way, as well as generate new research results to a wider audience by adequate
Brief outline of the o	course:	
Recommended litera	ature:	
Course language:		
Notes:		
Course assessment Total number of asse	and students, 24	
	ssed students: 34	
	abs	n
		n 0.0
Provides:	abs	
	abs 100.0	

	arik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ RZ/22	Course name: Internationa	al peer-reviewed proceedings
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): dy period:	
Number of ECTS cr	redits: 5	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour A publication publis		gn or national proceedings as an author/co-author.
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	y, evaluate, and apply correct scientific methods bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions,
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the c	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own id Brief outline of the o Recommended liters Course language:	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own id Brief outline of the o Recommended liters Course language:	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas. course: ature:	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language: Notes:	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas. course: ature:	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language: Notes:	logy. He demonstrates the a and applying them critically is in an innovative way, as wel h according to the highest q strates the ability to critically leas. course: ature:	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The v evaluate and respond to reviewers' suggestions,
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language: Notes:	logy. He demonstrates the a and applying them critically is in an innovative way, as wel h according to the highest q strates the ability to critically leas. course: ature: essed students: 20 abs	hility to reflect on a scientific problem by using bility to reflect on a scientific problem by using here the demonstrates the competence to use existing has to generate new original scientific knowledge, pualitative and ethical standards of the field. The here evaluate and respond to reviewers' suggestions, n
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own id Brief outline of the o Recommended liters Course language: Notes: Course assessment Total number of asse	logy. He demonstrates the a and applying them critically is in an innovative way, as well h according to the highest q strates the ability to critically leas. course: ature: essed students: 20 abs 100.0	hility to reflect on a scientific problem by using bility to reflect on a scientific problem by using here the demonstrates the competence to use existing has to generate new original scientific knowledge, pualitative and ethical standards of the field. The here evaluate and respond to reviewers' suggestions, n

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ dTZV/10	Course name: Lattice theo	ry
Course type, scope a Course type: Lectur Recommended cou Per week: 2 Per stu Course method: pre	re rse-load (hours): Idy period: 28	
Number of ECTS cr	edits: 5	
Recommended seme	ster/trimester of the cours	e: 2., 4.
Course level: III.	· · · · · · · · · · · · · · · · · · ·	
Prerequisities:		
Conditions for cours Awarded according t	se completion: o written and oral exam.	
Learning outcomes: The students learn ba in various parts of ma	-	Lattice theory and gain the ability to apply them
	dular lattices, Boolean algeb s. Completeness and complet	oras. Ideals, reprezentation of distibutive lattices ions. Algebraic properties of lattices, congruence
B. A. Davey, H. A. P	attice Theory (2nd edition),	ces and order, Cambridge University Press 1990
Course language: Slovak and English		
Notes:		
Course assessment Total number of asse	ssed students: 6	
	Ν	Р
	0.0	100.0
	0.0	100.0
Provides: doc. RNDr	: Miroslav Ploščica, CSc.	100.0
Provides: doc. RNDr Date of last modifica	: Miroslav Ploščica, CSc.	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	science	
Course ID: ÚMV/ DK/22	Course name: Local Confe	erence
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	redits: 2	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours Active participation	se completion: in the home conference.	
degree of ability to id in his scientific field using the latest appro- theories and concepts	lentify, evaluate, and apply co l. He demonstrates the abili aches and applying them crit s in an innovative way, as we	conference, the PhD student demonstrates a high prrect scientific methods or research methodology ty to reflect on a specific scientific problem by ically. Demonstrates competence in using existing Il as generating new original scientific knowledge audience using adequate means and through the
Brief outline of the o	course:	
Recommended litera	ature:	
Course language:		
Notes:		
Course assessment Total number of asse	ssed students: 10	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	ation: 05.03.2024	

DKZU/22 Image: Course type, scope and the method: Course type, scope and the method: Course type; Recommended course-load (hours): Per week: Per study period: Course method: present Image: Course method: Number of ECTS credits: 5 Image: Course method: Recommended semester/trimester of the course: Image: Course level: Course level: III. Image: Conditions for course completion: Active participation in a national conference with foreign participation. Image: Conditions for course completion: Active participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates completence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Image: Course language: Recommended literature: Image: Course language: Notes: Image: Course language: 100.0 0.0 Provides: Image: Course language: Date of last modification: 08:11.2022 Image: Course language:<	University P I Šafá	rik University in Košice	
Course ID: ÚMV/ DKZU/22 Course name: Local conference with international participation Course type, scope and the method: Course type: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present Course method: present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: Notes: n 100.0 0.0 Provides: D Date of last modification: 08.11.2022 D	-		
Course type: Recommended course-load (hours): Per week: Per study period: Course method: present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conticions for course completion: Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: Course assessment 100.0 0.0 100.0 0.0 0.0 Provides: Date of last modification: 08.11.2022 0.0	Course ID: ÚMV/ DKZU/22		erence with international participation
Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: Course assessment 100.0 0.0 Provides: Data of last modification: 08.11.2022	Course type: Recommended cour Per week: Per stud	rse-load (hours): y period:	
Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: Course assessment Total number of assessed students: 17 abs n 100.0 0.0 Provides: Date of last modification: 08.11.2022	1		
Course level: III. Prerequisities: Conditions for course completion: Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific mobel by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: Course assessment Total number of assessed students: 17 abs n 100.0 0.0 Provides: Date of last modification: 08.11.2022			
Prerequisities: Conditions for course completion: Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: 100.0 0.0 Provides: Date of last modification: 08.11.2022		ster/trimester of the cours	Se:
Conditions for course completion: Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: Course assessment 100.0 0.0 Provides: Date of last modification: 08.11.2022			
Active participation in a national conference with foreign participation. Learning outcomes: By actively participating in a scientific conference, the PhD student demonstrates a high degree of ability to identify, evaluate, and apply correct scientific methods or research methodology in his scientific field. He demonstrates the ability to reflect on a specific scientific problem by using the latest approaches and applying them critically. Demonstrates competence to use existing theories and concepts in an innovative way, as well as generate new original scientific knowledge and communicate research results to a wider audience by adequate means and through Slovak or a foreign language. Brief outline of the course: Recommended literature: Course language: Notes: Course assessment Total number of assessed students: 17 abs n 100.0 0.0 Provides: Date of last modification: 08.11.2022			
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Recommended literature: Course language: Notes: Course assessment Total number of assessed students: 17 abs 100.0 0.0 Provides: Date of last modification: 08.11.2022	ability to identify, ev scientific field. He de latest approaches and and concepts in an i communicate researc	aluate, and apply correct s monstrates the ability to re applying them critically. I nnovative way, as well as	cientific methods or research methodology in his flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and
Course language: Notes: Course assessment Total number of assessed students: 17 abs n 100.0 0.0 Provides: Date of last modification: 08.11.2022	Brief outline of the c	ourse:	
Notes:	Recommended litera	ture:	
Course assessment Total number of assessed students: 17 abs n 100.0 0.0 Provides: Date of last modification: 08.11.2022	Course language:		
Total number of assessed students: 17 abs n 100.0 0.0 Provides:	Notes:		
100.0 0.0 Provides:	Course assessment Total number of asses	ssed students: 17	
Provides: Date of last modification: 08.11.2022		abs	n
Date of last modification: 08.11.2022		100.0	0.0
	Provides:		•
America de a secto DND a Trans (*) (a da en DI D	Date of last modifica	tion: 08.11.2022	
Approved: prof. RNDr. Tomáš Madaras, PhD.	Approved: prof. RNI	Dr. Tomáš Madaras, PhD.	

University: P. J. Safa	árik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ DC/22	Course name: Local journ	al
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 6	
Recommended sem	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted	se completion: l in a national journal as auth	or/co-author.
level of ability to ide He demonstrates the applying them critic an innovative way, a according to the high	entify, evaluate, and apply co e ability to reflect on a scient ally. He demonstrates the co is well as to generate new or nest qualitative and ethical sta	/co-author, the PhD student demonstrates a high rrect scientific methods or research methodology. tific problem by using the latest approaches and mpetence to use existing theories and concepts in iginal scientific knowledge, which he can publish indards of the field. The PhD student demonstrates eviewers' suggestions, to finalize his own ideas.
Brief outline of the	course:	
Recommended liter	ature:	
Course language:		
Notes:		
Course assessment Total number of asse	essed students: 2	
	abs	n
	100.0	0.0
	100.0	
Provides:	100.0	<u> </u>
Provides: Date of last modific		

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ dTMT/10	Course name: Matroid the	ory
Course type, scope a Course type: Lectur Recommended cou Per week: 4 Per stu Course method: pre	re rse-load (hours): dy period: 56	
Number of ECTS cr	edits: 7	
Recommended seme	ster/trimester of the cours	e: 1., 3.
Course level: III.		
Prerequisities:		
Conditions for cours A student is evaluate	e completion: d according to an oral exami	nation.
	inted with special parts of 1 plines of discrete mathemati	matroid theory and with possibilities how to use cs.
homeomorphisms ve	ion, minor of a matroid. C rsus matroid minors. Planar g ary matroids. Block designs	onnected matroids. Whitney's Theorem. Graph graphs and their duals. Representation of a matroid versus matroids. Extremal problems in matroids.
	nture: Did Theory, Academic Press Theory, Oxford University I	
Course language: Slovak and English		
Notes:		
Course assessment Total number of asse	ssed students: 1	
	Ν	Р
	0.0	100.0
Provides: doc. RNDr	. Roman Soták, PhD.	
Date of last modifica	tion: 17.03.2022	
	Dr. Tomáš Madaras, PhD.	

	árik University in Košice	
Faculty: Faculty of	Science	
Course ID: ÚMV/ SIG/22	Course name: Member	of the internal project team
Course type, scope Course type: Recommended cou Per week: Per stu Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 3	
Recommended sem	ester/trimester of the cou	irse:
Course level: III.		
Prerequisities:		
Conditions for cour Co-worker of projec	rse completion: et supported by internal gra	ant schemes (VVGS)
	monstrates the ability to pa	rticipate in teamwork, to bring his own contribution
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of th	monstrates the ability to pa he project objective with grant, he acquires the abil re, adhere to the project sch he creation of outputs. Th he grant project.	
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of th Brief outline of the	monstrates the ability to pa he project objective with grant, he acquires the abil re, adhere to the project sch he creation of outputs. Th he grant project. course:	rticipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the redule, coordinate his own activities with colleagues,
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of th Brief outline of the Recommended liter	monstrates the ability to pa he project objective with grant, he acquires the abil re, adhere to the project sch he creation of outputs. Th he grant project. course:	rticipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the redule, coordinate his own activities with colleagues,
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of th Brief outline of the Recommended liter Course language:	monstrates the ability to pa he project objective with grant, he acquires the abil re, adhere to the project sch he creation of outputs. Th he grant project. course:	rticipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the redule, coordinate his own activities with colleagues,
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of th Brief outline of the Recommended liter	monstrates the ability to pa he project objective with grant, he acquires the abil re, adhere to the project sch he creation of outputs. Th he grant project. course: rature:	rticipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the redule, coordinate his own activities with colleagues,
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of the Brief outline of the Recommended liter Course language: Notes: Course assessment	monstrates the ability to pa he project objective with grant, he acquires the abil re, adhere to the project sch he creation of outputs. Th he grant project. course: rature:	rticipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the redule, coordinate his own activities with colleagues,
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of the Brief outline of the Recommended liter Course language: Notes: Course assessment	monstrates the ability to pa he project objective with grant, he acquires the abili- re, adhere to the project sch he creation of outputs. Th he grant project. course: rature:	articipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the nedule, coordinate his own activities with colleagues, e PhD student gains valuable experience from the
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of the Brief outline of the Recommended liter Course language: Notes: Course assessment	monstrates the ability to pa he project objective with grant, he acquires the abili- re, adhere to the project sch he creation of outputs. Th he grant project. course: rature: essed students: 4 abs	nticipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the nedule, coordinate his own activities with colleagues, e PhD student gains valuable experience from the n
The PhD student der to the solution of t the internal VVGS established procedur and participate in th practical course of th Brief outline of the Recommended liter Course language: Notes: Course assessment Total number of asse	monstrates the ability to pa he project objective with grant, he acquires the abili- re, adhere to the project sch he creation of outputs. Th he grant project. course: rature: essed students: 4 abs 100.0	nticipate in teamwork, to bring his own contribution in the internal grant system at UPJŠ. By solving lity to implement the project plan according to the nedule, coordinate his own activities with colleagues, e PhD student gains valuable experience from the n

	arik University in Ko	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ POVK/22	Course name: Mer	mbership in conference organising committee
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): dy period:	
Number of ECTS cr	redits: 3	
Recommended seme	ester/trimester of th	e course:
Course level: III.		
Prerequisities:		
Conditions for cours Work in the organizi		conference
By working in the o	organizing committe	e of the conference, the PhD student demonstrates the
abilities and compete to manage the implem in writing using vario level with various typ decisions.	organizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces	· · · · · · · · · · · · · · · · · · ·
By working in the of abilities and compete to manage the implem in writing using vario level with various typ decisions.	organizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professiona
By working in the of abilities and compete to manage the implem in writing using various level with various typ decisions. Brief outline of the of	organizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course:	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professiona
By working in the or abilities and competer to manage the implem in writing using varior level with various typ decisions. Brief outline of the or Recommended litera	organizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course:	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professiona
By working in the of abilities and compete to manage the implem in writing using various level with various typ	organizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course:	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professiona
By working in the of abilities and compete to manage the implem in writing using vario level with various typ decisions. Brief outline of the of Recommended litera Course language:	organizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course: ature:	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professiona
By working in the of abilities and compete to manage the implem in writing using various level with various typ decisions. Brief outline of the of Recommended literat Course language: Notes: Course assessment	organizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course: ature:	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professiona
By working in the of abilities and compete to manage the implem in writing using various level with various typ decisions. Brief outline of the of Recommended literat Course language: Notes: Course assessment	erganizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course: ature: essed students: 4	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professiona asary, correctly recommend solutions or make independen
By working in the or abilities and competer to manage the implem in writing using varior level with various typ decisions. Brief outline of the or Recommended litera Course language: Notes: Course assessment Total number of asse	erganizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course: ature: essed students: 4 abs	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professional stary, correctly recommend solutions or make independen
By working in the of abilities and compete to manage the implem in writing using various level with various typ decisions. Brief outline of the of Recommended literat Course language: Notes: Course assessment	erganizing committe ences to organize a so nentation in terms of ous technical means a bes of people, if neces course: ature: essed students: 4 abs 100.0	e of the conference, the PhD student demonstrates the cientific or professional event independently or in a team time and content, to communicate effectively verbally and s needed, including in a foreign language at a professional stary, correctly recommend solutions or make independen

	arik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ MONB/22	Course name: Monogr	aph
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): dy period:	
Number of ECTS cr	edits: 20	
Recommended seme	ester/trimester of the co	urse:
Course level: III.		
Prerequisities:		
Conditions for cours Co-author of the more	-	
evaluate, and apply of to reflect on a scient demonstrates the con as to generate new of qualitative and ethic	correct scientific methods tific problem by using the mpetence to use existing original scientific knowle cal standards of the field	ent demonstrates a high level of ability to identify, s or research methodology. It demonstrates the ability he latest approaches and applying them critically. He theories and concepts in an innovative way, as well edge, which he can publish according to the highest d. The doctoral student demonstrates the ability to suggestions, to finalize his own ideas.
Brief outline of the o	course:	
	atura.	
Recommended liter		
Recommended litera Course language:		
Course language:		
Course language: Notes: Course assessment		n
Course language: Notes: Course assessment	essed students: 0	n 0.0
Course language: Notes: Course assessment	essed students: 0 abs	
Course language: Notes: Course assessment Total number of asse	essed students: 0 abs 0.0	

	árik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ MONA/22	Course name: Monograph	in a renowned publishing house
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pr	rse-load (hours): dy period:	
Number of ECTS cr	redits: 40	
Recommended sem	ester/trimester of the course	2:
Course level: III.		
Prerequisities:		
Conditions for cour Co-author of a mono	se completion: ograph in a renowned publish	ing house.
He demonstrates the applying them critic in an innovative wa publish according to	e ability to reflect on a scient ally. He demonstrates the co by, as well as to generate ne the highest qualitative and et	rect scientific methods or research methodology. ific problem by using the latest approaches and ompetence to use existing theories and concepts w original scientific knowledge, which he can chical standards of the field. The doctoral student respond to reviewers' suggestions, to finalize his
Brief outline of the	course:	
Recommended liter	ature:	
Course language:		
Course language:		
Course language: Notes: Course assessment		n
Course language: Notes: Course assessment	essed students: 0	n 0.0
Course language: Notes: Course assessment	essed students: 0 abs	
Course language: Notes: Course assessment Total number of asse	essed students: 0 abs 0.0	

University: P. J. Sala	1 TT · · · TZ ··	
	rik University in Košice	
Faculty: Faculty of S	1	
Course ID: ÚMV/ NRZ/22	Course name: Non-Review	wed International or National Proceedings
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	redits: 2	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours A publication publis	-	gn or national journal as an author/co-author.
demonstrates the ab methodology. He de approaches and apply	ility to identify, evaluate, a monstrates the ability to re ying them critically. He dem	al journal as an author/co-author, the PhD student nd apply correct scientific methods or research flect on a scientific problem by using the latest constrates the competence to use existing theories
he can publish accord	rding to the highest qualitation	generate new original scientific knowledge, which tive and ethical standards of the field. The phD vn thoughts in a written speech.
he can publish accord	rding to the highest qualitation the ability to finalize his ov	tive and ethical standards of the field. The phD
he can publish accor student demonstrates	rding to the highest qualitates the ability to finalize his over	tive and ethical standards of the field. The phD
he can publish according student demonstrates Brief outline of the c	rding to the highest qualitates the ability to finalize his over	tive and ethical standards of the field. The phD
he can publish according student demonstrates Brief outline of the control Recommended literation	rding to the highest qualitates the ability to finalize his over	tive and ethical standards of the field. The phD
he can publish accor student demonstrates Brief outline of the c Recommended liters Course language:	rding to the highest qualitates the ability to finalize his ov course: ature:	tive and ethical standards of the field. The phD
he can publish accorstudent demonstrates Brief outline of the of Recommended litera Course language: Notes: Course assessment	rding to the highest qualitates the ability to finalize his ov course: ature:	tive and ethical standards of the field. The phD
he can publish accors student demonstrates Brief outline of the of Recommended litera Course language: Notes: Course assessment	rding to the highest qualitates the ability to finalize his over course: ature: ssed students: 4	tive and ethical standards of the field. The phD vn thoughts in a written speech.
he can publish accors student demonstrates Brief outline of the of Recommended litera Course language: Notes: Course assessment	rding to the highest qualitates the ability to finalize his over course: ature: ssed students: 4 abs	n
he can publish accorstudent demonstrates Brief outline of the of Recommended litera Course language: Notes: Course assessment Total number of asse	rding to the highest qualitation in a state ability to finalize his over course: ature: assed students: 4 abs 100.0	n

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ dUAS/10	Course name: Ordered alg	ebraic structures
Course type, scope a Course type: Lectur Recommended cour Per week: 3 Per stu Course method: pre	re rse-load (hours): dy period: 42	
Number of ECTS cr	edits: 5	
Recommended seme	ster/trimester of the cours	e: 2., 4.
Course level: III.		
Prerequisities:		
Conditions for cours examination	e completion:	
ordered algebraic str them and generalize; is to have sufficient r	uctures, which to combine knowledge to apply to specif nathematical knowledge and	dern algebra. Acquire the basics of the theory of with the acquired knowledge of algebra, extend fic problems and mathematical problems. The aim d apparatus to enable the independent solution of d the publication of these results.
and orthogonality, or	nearly ordered, lattice orde	red groups. Convex subgroups, absolute value nedean ordered structures. Partially ordered and s.
T.S.Blyth: Lattices an E.Harsheim: Ordered	dered algebraic systems, Per	ures, Springer Verlag, London, 2005.
Course language: Slovak and English		
Notes:		
Course assessment Total number of asse	ssed students: 4	
	Ν	Р
	0.0	100.0
Provides: prof. RND	r. Danica Studenovská, CSc.	
Date of last modifica	tion: 24.11.2021	
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Approved: prof. RNDr. Tomáš Madaras, PhD.

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ PVS/04	Course name: Patent, inve	ntion, software
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): y period:	
Number of ECTS cr	edits: 2	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours Patent filed, inventio	e completion: n, software product created.	
	nonstrates the ability to creat interdisciplinary scale or in	e an innovative product in a given scientific field, technical practice
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asse	ssed students: 2	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion: 08.11.2022	
Approved: prof. RNI	Dr. Tomáš Madaras, PhD.	

University: P. J. Šafărik University in Košice Faculty: Faculty of Science Course ID: KPE/ PgVU/17 Course name: Pedagogy for University Teachers Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: distance, present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
Course ID: KPE/ PgVU/17 Course name: Pedagogy for University Teachers Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: distance, present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro university-level professional subjects. Identify and specify educational procedures of a uni teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
PgVU/17 Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: distance, present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: distance, present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro- university-level professional subjects. Identify and specify educational procedures of a uni teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro-university-level professional subjects. Identify and specify educational procedures of a uniteacher aimed at effective teaching management, pedagogical diagnostics, and assessment	
Course level: III. Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessmination	
Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessmed to a sessement.	
Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro- university-level professional subjects. Identify and specify educational procedures of a uni- teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
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After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro- university-level professional subjects. Identify and specify educational procedures of a uni- teacher aimed at effective teaching management, pedagogical diagnostics, and assessme	
learning outcomes. Recognize different approaches to pedagogical evaluation and their implement effective educational process at the university level. Skills Implement effective educational methods and techniques into the teaching of professional su tailored to the needs of university students. Conduct pedagogical diagnostics, assess st progress, and apply appropriate evaluation methods to improve learning outcomes. Analy reflect on one's own teaching process, identify areas for improvement, and enhance the te of professional subjects, including the rationalization of the time and content structure of tea Present specific proposals for improving the teaching process, including the use of new techno and innovative pedagogical approaches. Competencies Confidently and effectively manage the teaching of university subjects, applying educ competencies that consider the specifics of higher education. Critically reflect on one pedagogical practice and the learning outcomes of students to improve teaching metho achieve a higher quality of the educational process. Apply innovative solutions to streamli optimize the teaching process, aiming to increase the engagement and success of university streamling outcomes is process.	iss of ersity nt of ct or jects lents e and ching hing

The personality of a university teacher. Teaching styles. Student in university education. Student learning styles. Possibilities of adapting teaching styles and student learning styles. University teacher–student interaction and communication in the teaching process. Pedagogical competencies

of a university teacher. Didactic analysis of the curriculum; teaching materials and textbooks. Forms of university teaching. Methods of university teaching. Verification methods and student assessment. Creation of a didactic test. Designing university teaching process. University teacher self-reflection.

Recommended literature:

Beránek, J. (2023). Moderní pedagogické metody a přístupy. Praha: Portál.

Fiala, M. (2023). Didaktika a metodika v současné škole. Praha: Grada Publishing.

Kováč, M. (2023). Vzdelávanie v 21. storočí: Inovatívne prístupy a metódy. Nitra: Vydavateľstvo UKF v Nitre.

Koudelka, J. (2023). Moderní didaktika a její aplikace. Praha: Karolinum.

Křížová, M., & Šebová, P. (2023). Vzdělávání učitelů: Teoretické a praktické přístupy. Praha: Triton.

Kučerová, M. (2023). Vzdělávání učitelů a profesionální rozvoj. Praha: Triton.

Mocová, M., & Lázňovská, M. (2023). Pedagogika a jej aplikácie v praxi. Bratislava:

Vydavateľstvo Spolku slovenských pedagogických pracovníkov.

Novák, J., & Pol, M. (2024). Pedagogické výzkumy a inovace ve vzdělávání. Praha: Portál.

Sikora, J. (2022). Didaktika a metodika vzdelávania: Nové výzvy a trendy. Bratislava:

Vydavateľstvo Univerzity Komenského v Bratislave.

Škoda, J. (2022). Efektivní výuka: Praktické strategie a metody. Praha: Grada Publishing. Švec, J. (2023). Didaktika a školní politika: Teorie a praxe. Praha: Grada Publishing. Vojtová, K. (2024). Diferenciace a inkluze ve vzdělávání. Praha: Wolters Kluwer.

Course language:

slovak

Notes:

TUCS.		
Course assessment Total number of assessed studen	ts: 121	
abs	n	neabs
98.35	0.0	1.65
Provides: doc. PaedDr. Renáta (Drosová, PhD.	
Date of last modification: 14.09	0.2024	
Approved: prof. RNDr. Tomáš M	Madaras, PhD.	

University: P. J. Šaf	árik University in Košice	2	
Faculty: Faculty of	Science		
Course ID: ÚMV/ ODP/14	Course name: PhD th	esis defence	
Course type, scope Course type: Recommended cou Per week: Per stu Course method: pr	urse-load (hours): dy period: resent		
Number of ECTS c			
	ester/trimester of the co	ourse:	
Course level: III.			
Prerequisities:			
Conditions for cour	se completion:		
Learning outcomes	:		
Brief outline of the	course:		
Recommended liter	ature:		
Course language:			
Notes:			
Course assessment Total number of ass	essed students: 38		
	Ν	Р	
	0.0	100.0	
Provides:			
Date of last modific	ation: 07.12.2021		
Approved: prof. RN	Dr. Tomáš Madaras, PhI	D.	

Faculty: Faculty of So	cience
Course ID: ÚMV/ dPLT/10	Course name: Polyhedral theory
Course type, scope an Course type: Lectur Recommended cour Per week: 4 Per stue Course method: pre	e ·se-load (hours): dy period: 56
Number of ECTS cre	edits: 7
Recommended semes	ster/trimester of the course: 4.
Course level: III.	
Prerequisities:	
theorems from the lec the relationships betw	e completion: rse, it is necessary to demonstrate the ability to formulate definitions and ctured material together with their proofs, and to present an understanding of yeen particular concepts and results. subject is based on the results of an oral exam (consisting of two theoretical
Learning outcomes: After completing the convex polyhedra and	course, the student will be acquainted with basic overview of the theory of a polyhedral maps.
Week 2: Basic prope Euler's formula and it Week 3: Platonic, Arc Weeks 4 - 6: Characte Week 7: Hamiltonian Week 8: The longest of Week 9: Face vectors Weeks 10 - 11: Local Week 12: Sphere insc	omplexes, maps, planar graphs. erties of three-dimensional convex polyhedra (operations with polyhedra, s consequences). chimedean and related polyhedra. erization of graphs of convex polyhedra, Steinitz's theorem.
B. Grunbaum: Conver G.M. Ziegler: Lecture	é mnohosteny, Veda Bratislava 1981 x polytopes (2nd edition), Springer New York, 2003 es on Polytopes, Springer-Verlag, New York, 1996 s: Light subgraphs of graphs embedded in the plane - a survey, Discrete
Course language:	

Notes: Basic knowledge of geometry and advanced know	ledge of graph theory are assumed.
Course assessment Total number of assessed students: 4	
Ν	Р
0.0	100.0
Provides: prof. RNDr. Tomáš Madaras, PhD.	
Date of last modification: 14.09.2021	
Approved: prof. RNDr. Tomáš Madaras, PhD.	

	arik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ POP/22	Course name: Popularisat	tion of science
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	rse-load (hours): dy period:	
Number of ECTS c	redits: 5	
Recommended sem	ester/trimester of the cours	se:
Course level: III.		
Prerequisities:		
Conditions for cour		
Learning outcomes: Demonstrated ability communication, iden	y to present science to the ntify the target group and a	lay public, use interactive methods of scientific dapt the communication language to the level of
Learning outcomes: Demonstrated ability communication, iden professional knowled	y to present science to the ntify the target group and a	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups
Learning outcomes: Demonstrated ability communication, iden professional knowled	y to present science to the ntify the target group and a dge. A PhD student is able to entific work, but also in the	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci	y to present science to the ntify the target group and a dge. A PhD student is able to entific work, but also in the course:	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci Brief outline of the	y to present science to the ntify the target group and a dge. A PhD student is able to entific work, but also in the course:	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci Brief outline of the Recommended liter	y to present science to the ntify the target group and a dge. A PhD student is able to entific work, but also in the course:	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci Brief outline of the Recommended liter Course language:	y to present science to the ntify the target group and a dge. A PhD student is able to entific work, but also in the course: ature:	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci Brief outline of the Recommended liter Course language: Notes: Course assessment	y to present science to the ntify the target group and a dge. A PhD student is able to entific work, but also in the course: ature:	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci Brief outline of the Recommended liter Course language: Notes: Course assessment	y to present science to the ntify the target group and a dge. A PhD student is able to entific work, but also in the course: ature:	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups wider context of science.
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci Brief outline of the Recommended liter Course language: Notes: Course assessment	y to present science to the ntify the target group and ad dge. A PhD student is able to entific work, but also in the course: ature: essed students: 0 abs	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups wider context of science. n
Learning outcomes: Demonstrated ability communication, iden professional knowled in the field of his sci Brief outline of the of Recommended liter Course language: Notes: Course assessment Total number of asse	y to present science to the ntify the target group and addge. A PhD student is able to entific work, but also in the course: ature: essed students: 0 abs 0.0	lay public, use interactive methods of scientific dapt the communication language to the level of arouse interest and motivate specific target groups wider context of science. n

	árik University in Košic	-
Faculty: Faculty of S	Science	
Course ID: ÚMV/ VYS/22	Course name: Presen	tation of results in seminar
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	irse-load (hours): dy period:	
Number of ECTS cr	redits: 5	
Recommended sem	ester/trimester of the c	ourse:
Course level: III.		
Prerequisities:		
Conditions for cour Presentation at the se	-	
Learning outcomes:		he DhD student domenstrates the shilles to it.
By actively particip evaluate, and apply demonstrates the abia and applying them c an innovative way, a research results by a	ating in the seminar, the correct scientific method ility to reflect on a spect ritically. Demonstrates as well as generating no dequate means and thro	he PhD student demonstrates the ability to identify, ods or research methodology in his field of study. He ific scientific problem by using the latest approaches competence in using existing theories and concepts in ew original scientific knowledge and communicating ugh Slovak or a foreign language.
By actively particip evaluate, and apply demonstrates the abia and applying them c an innovative way, a research results by a Brief outline of the	ating in the seminar, t correct scientific metho ility to reflect on a spec ritically. Demonstrates as well as generating no dequate means and thro course:	ds or research methodology in his field of study. He ific scientific problem by using the latest approaches competence in using existing theories and concepts in ew original scientific knowledge and communicating
By actively particip evaluate, and apply demonstrates the abia and applying them c an innovative way, a research results by a Brief outline of the Recommended liter	ating in the seminar, t correct scientific metho ility to reflect on a spec ritically. Demonstrates as well as generating no dequate means and thro course:	ds or research methodology in his field of study. He ific scientific problem by using the latest approaches competence in using existing theories and concepts in ew original scientific knowledge and communicating
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By actively particip evaluate, and apply demonstrates the abia and applying them c an innovative way, a research results by a Brief outline of the a Recommended liter Course language: Notes:	ating in the seminar, t correct scientific metho ility to reflect on a spec ritically. Demonstrates as well as generating no dequate means and thro course:	ds or research methodology in his field of study. He ific scientific problem by using the latest approaches competence in using existing theories and concepts in ew original scientific knowledge and communicating
By actively particip evaluate, and apply demonstrates the abi and applying them c an innovative way, a research results by a Brief outline of the Recommended liter Course language:	ating in the seminar, t correct scientific metho ility to reflect on a spec ritically. Demonstrates as well as generating no dequate means and thro course: ature:	ds or research methodology in his field of study. He ific scientific problem by using the latest approaches competence in using existing theories and concepts in ew original scientific knowledge and communicating
By actively particip evaluate, and apply demonstrates the abia and applying them of an innovative way, a research results by a Brief outline of the Recommended liter Course language: Notes: Course assessment	ating in the seminar, t correct scientific metho ility to reflect on a spec ritically. Demonstrates as well as generating no dequate means and thro course: ature:	ds or research methodology in his field of study. He ific scientific problem by using the latest approaches competence in using existing theories and concepts in ew original scientific knowledge and communicating
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By actively particip evaluate, and apply demonstrates the abia and applying them of an innovative way, a research results by a Brief outline of the Recommended liter Course language: Notes: Course assessment	ating in the seminar, t correct scientific metho ility to reflect on a spec ritically. Demonstrates as well as generating no dequate means and thro course: ature: essed students: 54 abs	he ds or research methodology in his field of study. He ific scientific problem by using the latest approaches competence in using existing theories and concepts in ew original scientific knowledge and communicating ugh Slovak or a foreign language.
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	rik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ ZRIG/22	Course name: Principal in	vestigator of an internal grant (VVGS)
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	edits: 10	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours Principal investigato	se completion: r of an internal grant (VVGS	8)
problem within the in their time schedule, the internal VVGS g established procedur	nternal grant system at UPJŠ. measurable outputs and ade grant acquires the ability to e, to be responsible for achie	cess a successful application for his own research Acquires skills with the design of research stages, equate distribution of funds. The very solution of implement the project intention according to the eving the set outputs. As a responsible researcher,
the PhD student acquiof results.	ires competencies in project	management, its administration, and presentation
-		management, its administration, and presentation
of results.	course:	management, its administration, and presentation
of results. Brief outline of the o	course:	management, its administration, and presentation
of results. Brief outline of the o Recommended litera	course:	management, its administration, and presentation
of results. Brief outline of the o Recommended liter: Course language:	course: ature:	management, its administration, and presentation
of results. Brief outline of the of Recommended liters Course language: Notes: Course assessment	course: ature:	n nanagement, its administration, and presentation
of results. Brief outline of the of Recommended liters Course language: Notes: Course assessment	course: ature: essed students: 9	
of results. Brief outline of the of Recommended liters Course language: Notes: Course assessment	essed students: 9 abs	n
of results. Brief outline of the of Recommended litera Course language: Notes: Course assessment Total number of asse	course: ature: essed students: 9 abs 100.0	n

	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚMV/ dPMK/10	Course name: Probability method in combinatorics
Course type, scope a Course type: Lectur Recommended cou Per week: 4 Per stu Course method: pro	re rse-load (hours): Idy period: 56
Number of ECTS cr	edits: 7
Recommended seme	ester/trimester of the course: 1., 3.
Course level: III.	
Prerequisities:	
to present proofs of s of application is requ	of the probabilistic method, the ability to formulate definitions and statements, tatements, to explain the individual steps in proofs and to mention possibilities
The evaluation is bas	
Learning outcomes: Introduction to the r combinatorics and g probability in proving	andomness in graph theory and applications of the probabilistic method in
Learning outcomes: Introduction to the r combinatorics and g probability in proving forms of this method Brief outline of the of 1. Probability Theory graph) 2. Probabilistic Me intersecting sets syste 3. Linearity of Expect 4. Alterations (Market 5. The Second Mome	andomness in graph theory and applications of the probabilistic method in graph theory. The obtained overview of the ways of using basic results of g the existence of objects with the required properties, understanding of various and knowledge of possible applications.
Learning outcomes: Introduction to the r combinatorics and g probability in proving forms of this method Brief outline of the of 1. Probability Theory graph) 2. Probabilistic Me intersecting sets syste 3. Linearity of Expect 4. Alterations (Marko 5. The Second Mome 6. The Lovász Local 7. Chernoff bound Recommended litera 1. N. Alon, J. Spence 2. M. Molloy, B. Rec	andomness in graph theory and applications of the probabilistic method in graph theory. The obtained overview of the ways of using basic results of g the existence of objects with the required properties, understanding of various and knowledge of possible applications. course: y (probability space, event, probability, random variable, expectation, random thod - First Moment Principle (Ramsey numbers, hypergraph coloring, em/Kneser graph, pairs of sets) etation (Hamiltonian graphs, splitting graphs) ov's inequality, independent sets, high girth and high chromatic number) ent (Chebyshev's inequality, threshold functions, the clique number) Lemma (hypergraph coloring again, directed cycles)
Learning outcomes: Introduction to the r combinatorics and g probability in proving forms of this method Brief outline of the of 1. Probability Theory graph) 2. Probabilistic Me intersecting sets syste 3. Linearity of Expect 4. Alterations (Marko 5. The Second Mome 6. The Lovász Local 7. Chernoff bound Recommended litera 1. N. Alon, J. Spence 2. M. Molloy, B. Rec	andomness in graph theory and applications of the probabilistic method in graph theory. The obtained overview of the ways of using basic results of g the existence of objects with the required properties, understanding of various and knowledge of possible applications. course: // (probability space, event, probability, random variable, expectation, random thod - First Moment Principle (Ramsey numbers, hypergraph coloring, em/Kneser graph, pairs of sets) etation (Hamiltonian graphs, splitting graphs) ov's inequality, independent sets, high girth and high chromatic number) ent (Chebyshev's inequality, threshold functions, the clique number) Lemma (hypergraph coloring again, directed cycles) ature: pr: The Probabilistic Method, John Wiley, 1991 ed: Graph Colourings and the Probabilistic Method, Springer, 2002

Course assessment Total number of assessed students: 12	
N	Р
0.0	100.0
Provides: RNDr. Igor Fabrici, Dr. rer. nat.	
Date of last modification: 19.10.2021	
Approved: prof. RNDr. Tomáš Madaras, PhD.	

	COURSE INFORMATION LETTER
University: P. J. Šafá	árik University in Košice
Faculty: Faculty of S	Science
Course ID: KPPaPZ/PsVU/17	Course name: Psychology for University Lecturers
Course type, scope a Course type: Lectu Recommended cou Per week: Per stud Course method: dis	re irse-load (hours): dy period: 28s
Number of ECTS cr	redits: 5
Recommended seme	ester/trimester of the course:
Course level: III.	
Prerequisities:	
Learning outcomes: After completing the summarize and explae motivation psychology health psychology. T for the professional, to create and implement and develop the con- the application of p	tiput, its analysis as of the course are listed in the electronic bulletin board of the course. The course, students will gain knowledge that allows them to understand, ain selected psychological knowledge from cognitive psychology, emotion and gy, personality psychology, developmental, social, educational psychology and they will acquire skills to apply the above psychological knowledge necessary competent performance of university teaching practice of doctoral students the teaching of a professional topic with applied psychological knowledge mpetences to create and implement teaching of a professional topic with sychological knowledge, as well as to evaluate their performance and the classmates in the form of constructive feedback.
The content of the corpsychology of emotion psychology and hear interactive, experient of independence, act in the teaching processocial and competent student relationship of	ourse is based on selected psychological knowledge of cognitive psychology, ons and motivation, personality psychology, developmental, social, educational alth psychology. Teaching is realized by a combination of lectures with tial methods, discussion, open communication with mutual respect, support tivity and motivation of students. Syllabus: University teacher and his work ess with a focus on: teachers in relation to themselves (cognitive, personal, cies in the use of methods), in relation to students and as part of the teacher- on the basis of selected areas of cognitive psychology, psychology of emotions elopmental psychology, social psychology, educational psychology and health

psychology with application to the university environment

Recommended literature:

Alexitch, L. R. (2005). Applying social psychology to education. Social Psychology.–Ed.: Schneider F., Gruman J., Coutts L.–Sage Publications, Inc, 205-228. Fry, H., Ketteridge, S., & Marshall, S. (2008). A handbook for teaching and learning in higher

Fry, H., Ketteridge, S., & Marshall, S. (2008). A handbook for teaching and learning in higher education: Enhancing academic practice. Routledge.

Mareš, J.: Pedagogická psychologie. Portál, 2013.

Kniha psychologie. Universum, 201 Čáp, J., Mareš, J.: Psychologie pro u Vágnerová, M.: Školní poradenská p	čitele. Praha: Portál 2007.	Praha: Karolínum 2005.
Course language: slovak		
Notes:		
Course assessment Total number of assessed students: 8	37	
abs	n	neabs
98.85	0.0	1.15
Provides: PhDr. Anna Janovská, Phl).	
Date of last modification: 02.12.202	24	
Approved: prof. RNDr. Tomáš Mad	aras, PhD.	

Faculty: Faculty of S		
Faculty. Faculty Of S	Science	
Course ID: ÚMV/ Q1SA/22	Course name: Q1 journal	as co-author
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	redits: 30	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted	se completion: in a journal of category Q1	as co-author.
He demonstrates the applying them critical	ability to reflect on a scienally. He demonstrates the con	tific problem by using the latest approaches and npetence to use existing theories and concepts in
according to the high the ability to criticall	est qualitative and ethical sta y evaluate and respond to re	ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
according to the high the ability to critical Brief outline of the c	est qualitative and ethical sta y evaluate and respond to re course:	ndards of the field. The PhD student demonstrates
according to the high the ability to critical Brief outline of the o Recommended liter	est qualitative and ethical sta y evaluate and respond to re course:	ndards of the field. The PhD student demonstrates
according to the high the ability to critical Brief outline of the o Recommended liter Course language:	est qualitative and ethical sta y evaluate and respond to re course:	ndards of the field. The PhD student demonstrates
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according to the high the ability to criticall Brief outline of the o Recommended liter: Course language: Notes: Course assessment	est qualitative and ethical sta y evaluate and respond to re course: ature:	ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
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according to the high the ability to criticall Brief outline of the o Recommended liter: Course language: Notes: Course assessment Total number of asse	est qualitative and ethical sta y evaluate and respond to re course: ature: essed students: 2 abs 100.0	ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.

Eagulture Eagurlture - f	5	
Faculty: Faculty of	Science	
Course ID: ÚMV/ Q11A/22	Course name: Q1 journal	as first or corresponding author
Course type, scope Course type: Recommended cou Per week: Per stu Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 40	
Recommended sem	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted	-	as first or corresponding author.
	degree of ability to identify	y, evaluate, and apply correct scientific methods
the latest approaches theories and concept which he can publis PhD student demon to finalize his own io	blogy. He demonstrates the a s and applying them critically is in an innovative way, as well sh according to the highest q strates the ability to critically deas.	ability to reflect on a scientific problem by using A He demonstrates the competence to use existing as to generate new original scientific knowledge, qualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions,
the latest approaches theories and concept which he can publis PhD student demon	blogy. He demonstrates the a s and applying them critically is in an innovative way, as well sh according to the highest q strates the ability to critically deas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing ll as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
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the latest approaches theories and concept which he can publis PhD student demon- to finalize his own is Brief outline of the	blogy. He demonstrates the a s and applying them critically is in an innovative way, as well sh according to the highest q strates the ability to critically deas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing ll as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
the latest approaches theories and concept which he can publis PhD student demon to finalize his own ic Brief outline of the Recommended liter	blogy. He demonstrates the a s and applying them critically is in an innovative way, as well sh according to the highest q strates the ability to critically deas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing ll as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
the latest approaches theories and concept which he can publis PhD student demon- to finalize his own io Brief outline of the Recommended liter Course language:	blogy. He demonstrates the a s and applying them critically is in an innovative way, as well sh according to the highest q strates the ability to critically deas. course: rature:	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing ll as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
the latest approaches theories and concept which he can publis PhD student demon- to finalize his own id Brief outline of the Recommended liter Course language: Notes: Course assessment	blogy. He demonstrates the a s and applying them critically is in an innovative way, as well sh according to the highest q strates the ability to critically deas. course: rature:	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing ll as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
the latest approaches theories and concept which he can publis PhD student demon- to finalize his own id Brief outline of the Recommended liter Course language: Notes: Course assessment	blogy. He demonstrates the a s and applying them critically is in an innovative way, as well sh according to the highest q strates the ability to critically deas. course: rature: essed students: 5	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing ll as to generate new original scientific knowledge, pualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions,
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Faculty Faculty of		
Faculty: Faculty of S	Science	
Course ID: ÚMV/ Q2SA/22	Course name: Q2 journal	as co-author
Course type, scope a Course type: Recommended cou Per week: Per stuc Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	redits: 20	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted	se completion: in a journal of category Q2	as co-author.
		prrect scientific methods or research methodology. tific problem by using the latest approaches and
an innovative way, a according to the high	s well as to generate new ori est qualitative and ethical sta	mpetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
an innovative way, a according to the high	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re	mpetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates
an innovative way, a according to the high the ability to critical Brief outline of the o Recommended liter	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course:	mpetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates
an innovative way, a according to the high the ability to criticall Brief outline of the c	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course:	mpetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates
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an innovative way, a according to the high the ability to criticall Brief outline of the o Recommended liters Course language: Notes: Course assessment Total number of asse	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course: ature: essed students: 4 abs 100.0	npetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.

Ea avaltava Ea14	árik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ Q21A/22	Course name: Q2 journal	as first or corresponding author
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 30	
Recommended sem	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted	1	as first or corresponding author.
	degree of ability to identify	y, evaluate, and apply correct scientific methods
the latest approaches theories and concept which he can publis PhD student demons to finalize his own io	s and applying them critically s in an innovative way, as wel sh according to the highest q strates the ability to critically deas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing Il as to generate new original scientific knowledge, qualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions,
the latest approaches theories and concept which he can publis PhD student demons	s and applying them critically s in an innovative way, as wel sh according to the highest q strates the ability to critically deas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing ll as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
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the latest approaches theories and concept which he can publis PhD student demons to finalize his own id Brief outline of the	s and applying them critically s in an innovative way, as wel sh according to the highest q strates the ability to critically deas.	bility to reflect on a scientific problem by using 7. He demonstrates the competence to use existing 11 as to generate new original scientific knowledge, pualitative and ethical standards of the field. The
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the latest approaches theories and concept which he can publis PhD student demons to finalize his own id Brief outline of the Recommended liter Course language: Notes: Course assessment	s and applying them critically s in an innovative way, as well sh according to the highest q strates the ability to critically deas. course: rature: essed students: 1 abs	hility to reflect on a scientific problem by using A. He demonstrates the competence to use existing Il as to generate new original scientific knowledge, pualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions, n
the latest approaches theories and concept which he can publis PhD student demons to finalize his own id Brief outline of the Recommended liter Course language: Notes: Course assessment Total number of asse	s and applying them critically s in an innovative way, as well sh according to the highest q strates the ability to critically deas. course: rature: essed students: 1 abs 100.0	hility to reflect on a scientific problem by using A. He demonstrates the competence to use existing Il as to generate new original scientific knowledge, pualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions, n

Faculty: Faculty of S		
raculty: raculty of S	cience	
Course ID: ÚMV/ Q3SA/22	Course name: Q3 journal	as co-author
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 15	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours Publication accepted	se completion: in a journal of category Q3	as co-author.
degree of ability to id He demonstrates the	entify, evaluate, and apply co ability to reflect on a scien	co-author, the PhD student demonstrates a high prrect scientific methods or research methodology. tific problem by using the latest approaches and
according to the high	s well as to generate new ori est qualitative and ethical sta	mpetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
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according to the high the ability to criticall Brief outline of the c Recommended litera	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course:	ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates
according to the high the ability to criticall Brief outline of the c Recommended liters Course language:	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course: ature:	ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates
according to the high the ability to criticall Brief outline of the o Recommended liters Course language: Notes: Course assessment	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course: ature:	ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates
according to the high the ability to criticall Brief outline of the o Recommended liters Course language: Notes: Course assessment	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course: ature: ssed students: 1	ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
according to the high the ability to criticall Brief outline of the o Recommended liters Course language: Notes: Course assessment	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course: ature: ssed students: 1 abs	n n n n n n
according to the high the ability to criticall Brief outline of the o Recommended liters Course language: Notes: Course assessment Total number of asse	s well as to generate new ori est qualitative and ethical sta y evaluate and respond to re course: ature: ssed students: 1 abs 100.0	n n n n n n

Faculty: Faculty of S		
- acturity of L	Science	
Course ID: ÚMV/ Q31A/22	Course name: Q3 journal	as first or corresponding author
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): dy period:	
Number of ECTS cr	redits: 25	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted		as first or corresponding author
demonstrates a high or research methodo the latest approaches	degree of ability to identify logy. He demonstrates the a	e first or corresponding author, the PhD student y, evaluate, and apply correct scientific methods bility to reflect on a scientific problem by using
which he can publis	s in an innovative way, as wel h according to the highest q strates the ability to critically	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The average evaluate and respond to reviewers' suggestions,
which he can publish PhD student demonst	s in an innovative way, as wel h according to the highest q strates the ability to critically leas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
which he can publis PhD student demons to finalize his own ic	s in an innovative way, as wel h according to the highest q strates the ability to critically leas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
which he can publish PhD student demonst to finalize his own ic Brief outline of the c	s in an innovative way, as wel h according to the highest q strates the ability to critically leas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
which he can publis PhD student demons to finalize his own ic Brief outline of the c Recommended liter	s in an innovative way, as wel h according to the highest q strates the ability to critically leas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
which he can publish PhD student demonst to finalize his own ic Brief outline of the of Recommended liters Course language:	s in an innovative way, as wel h according to the highest q strates the ability to critically leas course: ature:	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
 which he can publish PhD student demonstation to finalize his own id Brief outline of the of Recommended literation Course language: Notes: Course assessment 	s in an innovative way, as wel h according to the highest q strates the ability to critically leas course: ature:	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
 which he can publish PhD student demonstation to finalize his own id Brief outline of the of Recommended literation Course language: Notes: Course assessment 	s in an innovative way, as wel h according to the highest q strates the ability to critically leas course: ature:	l as to generate new original scientific knowledge, pualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions,
 which he can publish PhD student demonstation to finalize his own id Brief outline of the of Recommended literation Course language: Notes: Course assessment 	s in an innovative way, as well h according to the highest q strates the ability to critically leas course: ature: essed students: 0 abs	as to generate new original scientific knowledge, pualitative and ethical standards of the field. The v evaluate and respond to reviewers' suggestions,
which he can publish PhD student demons to finalize his own ic Brief outline of the of Recommended liters Course language: Notes: Course assessment Total number of asse	s in an innovative way, as welch according to the highest quarter the ability to critically deas course: ature: essed students: 0 abs 0.0	as to generate new original scientific knowledge, pualitative and ethical standards of the field. The v evaluate and respond to reviewers' suggestions,

	árik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ Q4SA/22	Course name: Q4 journal	as co-author
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	irse-load (hours): dy period:	
Number of ECTS c	redits: 10	
Recommended sem	ester/trimester of the cour	se:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted	se completion: l in a journal of category Q4	as co-author.
1 1 1 1 1 1	1 1	
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate	t on a scientific problem by strates the competence to u enerate new original scientific ve and ethical standards of the and respond to reviewers' s	ethods or research methodology. He demonstrates y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability uggestions, to finalize his own ideas.
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the	t on a scientific problem by strates the competence to u enerate new original scientific and ethical standards of t and respond to reviewers' s course:	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the Recommended liter	t on a scientific problem by strates the competence to u enerate new original scientific and ethical standards of t and respond to reviewers' s course:	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the Recommended liter Course language:	t on a scientific problem by strates the competence to u enerate new original scientific and ethical standards of t and respond to reviewers' s course:	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the Recommended liter Course language: Notes:	t on a scientific problem by strates the competence to u enerate new original scientific and ethical standards of t and respond to reviewers' s course:	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the Recommended liter Course language:	t on a scientific problem by strates the competence to u enerate new original scientific and ethical standards of t and respond to reviewers' s course: ature:	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the of Recommended liter Course language: Notes: Course assessment	t on a scientific problem by strates the competence to u enerate new original scientific and ethical standards of t and respond to reviewers' s course: ature:	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the of Recommended liter Course language: Notes: Course assessment	essed students: 0	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability uggestions, to finalize his own ideas.
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the of Recommended liter Course language: Notes: Course assessment	essed students: 0 abs	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability uggestions, to finalize his own ideas.
the ability to reflect critically. He demon way, as well as to ge the highest qualitativ to critically evaluate Brief outline of the of Recommended liter Course language: Notes: Course assessment Total number of asse	essed students: 0 abs 0.0	y using the latest approaches and applying them se existing theories and concepts in an innovative fic knowledge, which he can publish according to he field. The PhD student demonstrates the ability uggestions, to finalize his own ideas.

	arik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ Q41A/22	Course name: Q4 journal	as first or corresponding author
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pr	irse-load (hours): dy period:	
Number of ECTS cr	redits: 20	
Recommended seme	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Publication accepted		as first or corresponding author.
		e first or corresponding author, the PhD student
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	y, evaluate, and apply correct scientific methods bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions,
or research methodo the latest approaches theories and concepts which he can publis PhD student demons	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liter	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas.	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language:	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas. course: ature:	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language: Notes: Course assessment	logy. He demonstrates the a and applying them critically s in an innovative way, as wel h according to the highest q strates the ability to critically leas. course: ature:	bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language: Notes: Course assessment	essed students: 2	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The v evaluate and respond to reviewers' suggestions,
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language: Notes: Course assessment	essed students: 2 abs	hility to reflect on a scientific problem by using bility to reflect on a scientific problem by using here the demonstrates the competence to use existing has to generate new original scientific knowledge, pualitative and ethical standards of the field. The here evaluate and respond to reviewers' suggestions, n
or research methodo the latest approaches theories and concepts which he can publis PhD student demons to finalize his own ic Brief outline of the o Recommended liters Course language: Notes: Course assessment Total number of asse	essed students: 2 abs abs abs and applying them critically sin an innovative way, as well h according to the highest q strates the ability to critically deas. course: ature:	hility to reflect on a scientific problem by using bility to reflect on a scientific problem by using here the demonstrates the competence to use existing has to generate new original scientific knowledge, pualitative and ethical standards of the field. The here evaluate and respond to reviewers' suggestions, n

University: P. J. Šafár	ik University in Košice	
Faculty: Faculty of So	cience	
Course ID: ÚMV/ SCI/22	Course name: SCI or SC	OPUS citation
Course type, scope an Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period:	
Number of ECTS cre	edits: 8	
Recommended semes	ster/trimester of the cour	se:
Course level: III.		
Prerequisities:		
Conditions for cours Obtained citation regi	e completion: stered in SCI or Scopus.	
researched field, base problem in such a wa source demonstrates	ed on the ability to formu y that generates new know	very well-founded scientific knowledge in the late research questions, to reflect on a scientific vledge. At the same time, a citation in an indexed nunicate new knowledge, which is a significant est expert level.
Brief outline of the c	ourse:	
Recommended litera	ture:	
Course language:		
Notes:		
Course assessment Total number of asses	sed students: 3	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion: 08.11.2022	

University: P. J. Šafa	árik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ VPZ/22	Course name: Scientific w	ork after sending to the editorial office
Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr	ırse-load (hours): dy period:	
Number of ECTS cr	redits: 5	
Recommended sem	ester/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cour Scientific work after	se completion: being sent to the editorial of	fice as an author/co-author.
demonstrates a high or research methodo the latest approaches theories and concept which he can publis	degree of ability to identify blogy. He demonstrates the a s and applying them critically s in an innovative way, as well h according to the highest q	fic journal as an author/co-author, the PhD student y, evaluate, and apply correct scientific methods bility to reflect on a scientific problem by using y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The e his own ideas in a structured form.
Brief outline of the	course:	
Recommended liter	ature:	
Course language:		
Notes:		
Course assessment Total number of asse	essed students: 8	
	abs	n
	100.0	0.0
Provides:		
Date of last modific	ation: 08.11.2022	

University: P. J. Šafán	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ dVTGa/10	Course name: Selected top	ics in graph theory I
Course type, scope a Course type: Lectur Recommended cour Per week: 2 Per stu Course method: pre	e ·se-load (hours): dy period: 28	
Number of ECTS cro	edits: 7	
Recommended seme	ster/trimester of the course	e: 2.
Course level: III.		
Prerequisities:		
theorems from the lec the relationships betw	rse, it is necessary to demo ctured material together with yeen particular concepts and	onstrate the ability to formulate definitions and a their proofs, and to present an understanding of results. Its of an oral exam (consisting of two theoretical
are not covered by b master degree study, a	basic or advanced courses	inted with specific topics of graph theory which in discrete mathematics during the bachelor or research of teams, whose members contribute to hematics.
3-colourability of gra	n graph theory (5 weeks) phs (4 weeks)	bourhoods of vertices (4 weeks)
Recommended litera Recent publications f	ture: rom international scientific j	ournals.
Course language: Slovak and English		
Notes:		
Course assessment Total number of asses	ssed students: 20	
	Ν	Р
	0.0	100.0
Provides: doc. RNDr. Fabrici, Dr. rer. nat.	Roman Soták, PhD., prof. I	RNDr. Tomáš Madaras, PhD., RNDr. Igor
Date of last modifica	tion: 20.09.2021	

Approved: prof. RNDr. Tomáš Madaras, PhD.

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ dVTGb/10	Course name: Selected top	pics in graph theory II
Course type, scope a Course type: Lectur Recommended cour Per week: 2 Per stu Course method: pre	e rse-load (hours): dy period: 28	
Number of ECTS cr	edits: 7	
Recommended seme	ster/trimester of the cours	e: 3.
Course level: III.		
Prerequisities:		
theorems from the lead the relationships betw	rse, it is necessary to dem ctured material together with veen particular concepts and	onstrate the ability to formulate definitions and h their proofs, and to present an understanding of l results. Its of an oral exam (consisting of two theoretical
are not covered by I master degree study,	basic or advanced courses	inted with specific topics of graph theory which in discrete mathematics during the bachelor or f research of teams, whose members contribute to thematics.
	olane graphs (4 weeks) ar graph colourings (4 week (3 weeks)	s)
Recommended litera Recent literature from	ture: n international scientific jou	rnals.
Course language: Slovak and English		
Notes:		
Course assessment Total number of asses	ssed students: 25	
	Ν	Р
	0.0	100.0
Provides: doc. RNDr Danica Studenovská,	· · · ·	RNDr. Tomáš Madaras, PhD., prof. RNDr.

Date of last modification: 20.09.2021

Approved: prof. RNDr. Tomáš Madaras, PhD.

Faculty: Faculty of Science

Course ID: Dek. PF	Course name: Spring School for PhD Students
UPJŠ/JSD/14	

Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 4d

Course method: distance, present

Number of ECTS credits: 2

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

Conditions for course completion:

Active participation in the Spring School of PhD students of UPJŠ.

Learning outcomes:

By actively participating in the Spring School of PhD Students of UPJŠ, the PhD student demonstrates a high level of ability to process the issues of his dissertation for a multidisciplinary audience with an emphasis on clarifying the motivation, scientific problem, processing methodology and own contribution to the solution of the selected topic. The PhD student demonstrates the ability to professionally discuss various research topics, present his own positions and accept a plurality of opinions. Demonstrates the ability to communicate research results to a wider professional audience with adequate means and through the Slovak language.

Brief outline of the course:

1. Interdisciplinary lectures from the fields of medicine, natural sciences, law, public affairs, humanities. Lecturers - top foreign or national experts from the mentioned fields.

2. Scientific lectures in sections created within related disciplines. Lecturers - top experts from UPJŠ from the mentioned fields.

3. Scientific contributions of PhD students in sections of related fields.

4. Panel discussions on the issue of PhD studies and current trends in the development of scientific disciplines at UPJŠ.

Recommended literature:

Proceedings of the Spring School of Doctoral Students.

Course language:

Notes:

Course assessment

Total number of assessed students: 202

abs	n
100.0	0.0

Provides: doc. RNDr. Andrea Straková Fedorková, PhD.

Date of last modification: 08.11.2022

Approved: prof. RNDr. Tomáš Madaras, PhD.

Faculty: Faculty of S	rik University in Košice	
Faculty. Faculty of S	cience	
Course ID: ÚMV/ VPSV/22	Course name: Supervision	n of student scientific work
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 8	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours Supervision of Stude	se completion: nt's Scientific Activity	
scientifically based k	nowledge in the field of stud	OČ, the PhD student demonstrates broad and y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed
skills from the field of	evaluate it and possibly pro of pedagogical sciences to h	pose another solution. He applies knowledge and
skills from the field of Brief outline of the c	evaluate it and possibly pro of pedagogical sciences to h course:	pose another solution. He applies knowledge and
skills from the field of	evaluate it and possibly pro of pedagogical sciences to h course:	pose another solution. He applies knowledge and
skills from the field of Brief outline of the c	evaluate it and possibly pro of pedagogical sciences to h course:	pose another solution. He applies knowledge and
skills from the field of Brief outline of the of Recommended liters	evaluate it and possibly pro of pedagogical sciences to h course:	pose another solution. He applies knowledge and
skills from the field of Brief outline of the of Recommended litera Course language:	evaluate it and possibly pro of pedagogical sciences to h course: nture:	pose another solution. He applies knowledge and
skills from the field of Brief outline of the of Recommended litera Course language: Notes: Course assessment	evaluate it and possibly pro of pedagogical sciences to h course: nture:	pose another solution. He applies knowledge and
skills from the field of Brief outline of the of Recommended litera Course language: Notes: Course assessment	evaluate it and possibly pro of pedagogical sciences to h course: nture: ssed students: 0	opose another solution. He applies knowledge and is own field.
skills from the field of Brief outline of the of Recommended litera Course language: Notes: Course assessment	evaluate it and possibly pro of pedagogical sciences to h course: nture: ssed students: 0 abs	n
skills from the field of Brief outline of the of Recommended litera Course language: Notes: Course assessment Total number of asse	evaluate it and possibly pro of pedagogical sciences to h course: nture: ssed students: 0 abs 0.0	n

	ärik University in Koš	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ PPC1/22	Course name: Teach	hing activities 1 h/s
Course type, scope Course type: Recommended cou Per week: Per stu Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 2	
Recommended sem	ester/trimester of the	course:
Course level: III.		
Prerequisities:	_	
Conditions for cour Direct teaching activ	-	
Learning outcomes		udent demonstrates the ability to transfer and integrate
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and	al activity, the PhD stu s own field of study d strategies of study g He is capable of desig current trends in highe digital competencies.	udent demonstrates the ability to transfer and integrate v into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process er education and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and Brief outline of the	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies.	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and Brief outline of the Recommended liter	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies.	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. The in accordance with a communication and Brief outline of the Recommended liter Course language:	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies.	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and Brief outline of the Recommended liter	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies. course: rature:	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies. course: rature:	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies. course: rature: essed students: 4	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process or education and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies. course: rature: essed students: 4 abs	n
Through pedagogica knowledge from hi right techniques and learning outcomes. The in accordance with a communication and Brief outline of the Recommended liter Course language: Notes: Course assessment Total number of asset	al activity, the PhD stu is own field of study d strategies of study g He is capable of desig current trends in highe digital competencies. course: rature: essed students: 4 abs 100.0	n

	árik University in Košice	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ PPC2/22	Course name: Teaching	activities 2 h/s
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 4	
Recommended sem	ester/trimester of the cou	'se:
Course level: III.		
Prerequisities:		
Conditions for cour Direct teaching activ	se completion: vity 2 semester hours	
Learning outcomes		demonstrates the ability to transfer and integrate
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and	al activity, the PhD student s own field of study into l strategies of study group He is capable of designing current trends in higher edu digital competencies.	demonstrates the ability to transfer and integrate education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process cation and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the	al activity, the PhD student s own field of study into l strategies of study group He is capable of designing current trends in higher edu digital competencies.	education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the Recommended liter	al activity, the PhD student s own field of study into l strategies of study group He is capable of designing current trends in higher edu digital competencies.	education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with a communication and Brief outline of the Recommended liter Course language:	al activity, the PhD student s own field of study into l strategies of study group He is capable of designing current trends in higher edu digital competencies.	education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the Recommended liter	al activity, the PhD student s own field of study into l strategies of study group He is capable of designing current trends in higher edu digital competencies. course: ature:	education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process
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Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment	al activity, the PhD student s own field of study into l strategies of study group He is capable of designing current trends in higher edu digital competencies. course: ature:	education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process cation and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment	al activity, the PhD student s own field of study into d strategies of study group He is capable of designing current trends in higher edu digital competencies. course: rature: essed students: 41 abs	education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process cation and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment Total number of asse	al activity, the PhD student s own field of study into d strategies of study group He is capable of designing current trends in higher edu digital competencies. course: ature: essed students: 41 abs 100.0	education. He is able to select and apply the management, higher education and evaluation of and implementing part of the educational process cation and the requirements placed on the level of

E	árik University in Koš	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ PPC3/22	Course name: Teac	hing activities 3 h/s
Course type, scope Course type: Recommended cou Per week: Per stu Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 6	
Recommended sem	ester/trimester of the	e course:
Course level: III.		
Prerequisities:		
Conditions for cour Direct teaching activ	rse completion: vity 3 semester hours	
Learning outcomes		
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and	al activity, the PhD st s own field of study d strategies of study g He is capable of desig current trends in higher digital competencies.	udent demonstrates the ability to transfer and integrate y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process er education and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and Brief outline of the	al activity, the PhD st s own field of study d strategies of study g He is capable of desig current trends in highe digital competencies.	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process
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Through pedagogica knowledge from hi right techniques and learning outcomes. The in accordance with a communication and Brief outline of the Recommended liter Course language:	al activity, the PhD st s own field of study d strategies of study g He is capable of desig current trends in highe digital competencies.	y into education. He is able to select and apply the group management, higher education and evaluation of gning and implementing part of the educational process
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Through pedagogica knowledge from hi right techniques and learning outcomes. The in accordance with a communication and Brief outline of the Recommended liter Course language: Notes: Course assessment Total number of asset	al activity, the PhD st s own field of study d strategies of study g He is capable of desig current trends in higher digital competencies. course: rature: essed students: 0 abs 0.0	n

E	árik University in Koši	
Faculty: Faculty of S	Science	
Course ID: ÚMV/ PPC4/22	Course name: Teaching activities 4 h/s	
Course type, scope Course type: Recommended cou Per week: Per stu Course method: pr	ırse-load (hours): dy period:	
Number of ECTS c	redits: 8	
Recommended sem	ester/trimester of the	course:
Course level: III.		
Prerequisities:		
Conditions for cour Direct teaching activ	rse completion: vity 4 semester hours	
Learning outcomes		
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and	al activity, the PhD stu s own field of study d strategies of study gr He is capable of design current trends in higher digital competencies.	ident demonstrates the ability to transfer and integrate into education. He is able to select and apply the roup management, higher education and evaluation of ning and implementing part of the educational process r education and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. in accordance with a communication and Brief outline of the	al activity, the PhD stu s own field of study d strategies of study gr He is capable of design current trends in higher digital competencies.	into education. He is able to select and apply the roup management, higher education and evaluation of ning and implementing part of the educational process
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Through pedagogica knowledge from hi right techniques and learning outcomes. The in accordance with a communication and Brief outline of the Recommended liter Course language:	al activity, the PhD stu s own field of study d strategies of study gr He is capable of design current trends in higher digital competencies.	into education. He is able to select and apply the roup management, higher education and evaluation of ning and implementing part of the educational process
Through pedagogica knowledge from hi right techniques and learning outcomes. The in accordance with a communication and Brief outline of the Recommended liter	al activity, the PhD stu s own field of study d strategies of study gr He is capable of design current trends in higher digital competencies. course: rature:	into education. He is able to select and apply the roup management, higher education and evaluation of ning and implementing part of the educational process
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Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment	al activity, the PhD stu s own field of study d strategies of study gr He is capable of design current trends in higher digital competencies. course: rature:	into education. He is able to select and apply the roup management, higher education and evaluation of ning and implementing part of the educational process r education and the requirements placed on the level of
Through pedagogica knowledge from hi right techniques and learning outcomes. I in accordance with o communication and Brief outline of the Recommended liter Course language: Notes: Course assessment	al activity, the PhD stu s own field of study d strategies of study gr He is capable of design current trends in higher digital competencies. course: rature: essed students: 9 abs	n
Through pedagogica knowledge from hi right techniques and learning outcomes. The in accordance with a communication and Brief outline of the Recommended liter Course language: Notes: Course assessment Total number of asset	al activity, the PhD stu s own field of study d strategies of study gr He is capable of design current trends in higher digital competencies. course: rature: essed students: 9 abs 100.0	n

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚMV/ dTPG/14		
Course type, scope a Course type: Lectur Recommended cour Per week: 4 Per stu Course method: pre	e rse-load (hours): dy period: 56	
Number of ECTS cr	edits: 7	
Recommended seme	ster/trimester of the cours	e: 1., 3.
Course level: III.		
Prerequisities:		
theorems from the lead the relationships betw	rse, it is necessary to dem ctured material together with veen particular concepts and	onstrate the ability to formulate definitions and h their proofs, and to present an understanding of results. Its of an oral exam (consisting of two theoretical
Learning outcomes: After completing the to planar and plane g		equainted with basic and advanced topics related
Week 2: Planar and p Weeks 3 - 5: Charact Week 6: Euler's form Weeks 7 - 10: Local s	ls of topology of the plane. lanar graphs, outerplanar gr erization theorems for plana ula and its consequences.	-
S. Jendrol', H-J. Voss	a: Planar graphs: Theory an	d Algorithms, Dover Publications, 2008. embedded in the plane - A survey, Discrete
Course language: Slovak and English		
Notes:		
Course assessment Total number of asse	ssed students: 0	
	Ν	Р
	0.0	0.0

Provides: prof. RNDr. Tomáš Madaras, PhD.

Date of last modification: 14.04.2022

Approved: prof. RNDr. Tomáš Madaras, PhD.

Faculty: Faculty of ScienceCourse ID: ÚMV/ KZP/22Course name: Thesis conCourse type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: presentNumber of ECTS credits: 4		
KZP/22 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		
Course type: Recommended course-load (hours): Per week: Per study period: Course method: present Number of ECTS credits: 4	'se:	
	se:	
	'se:	
Recommended semester/trimester of the cour		
Course level: III.		
Prerequisities:		
Conditions for course completion: Final thesis consultant.		
knowledge in the field of study, as well as know Demonstrates the ability to critically assess a p well as to evaluate it and possibly propose anoth the field of pedagogical sciences to his own field	ent demonstrates broad and scientifically based vledge of a wide range of methods and approaches. professional problem and its proposed solution, as her solution. He applies knowledge and skills from d.	
Brief outline of the course:		
Recommended literature:		
Course language:		
Notes:		
Course assessment Total number of assessed students: 10		
abs	n	
100.0 0.0		
Provides:		
Date of last modification: 08.11.2022		
Approved: prof. RNDr. Tomáš Madaras, PhD.		

University: P. J. Šafá	rik University in Košice	e
Faculty: Faculty of S	cience	
Course ID: ÚMV/ VZP/22	Course name: Thesis supervising	
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 8	
Recommended seme	ster/trimester of the c	ourse:
Course level: III.		
Prerequisities:		
Conditions for cours Supervisor of the fina	-	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogi	d of study, as well as kr ility to critically assess and possibly propose an cal sciences to his own	student demonstrates broad and scientifically based nowledge of a wide range of methods and approaches. a professional problem and its proposed solution, as nother solution. He applies knowledge and skills from field.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asse	ssed students: 0	
	abs	n
	0.0 0.0	
Provides:		
Date of last modifica	tion: 08.11.2022	
	Dr. Tomáš Madaras, Phl	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of Science		
Course ID: ÚMV/ dTTG/10		
Course type, scope a Course type: Lectu Recommended cou Per week: 4 Per stu Course method: pro	re rse-load (hours): ıdy period: 56	
Number of ECTS cr	edits: 7	
Recommended seme	ester/trimester of the cours	e: 1., 3.
Course level: III.		
Prerequisities:		
Conditions for cours Skúška	se completion:	
Learning outcomes: Oboznámiť sa so zák		kami Topologickej teórie grafov.
Farbenia grafov na p	ny. Vnorenia. Napäťové grafy	v a pokrývajúce priestory. Rod grafov. Rody grúp. onfigurácie. Reprezentativita grafov na plochách. urácie pre plochy.
2. B. Mohar, C., Tho 2001	cker: Topological Graph The	eory, John Wiley and Sons, New York, 1987 ,The Johns Hopkins University Press, Baltimore, ag, Berlin, 1974
Course language: Slovak or English		
Notes:		
Course assessment Total number of assessed students: 18		
	N P	
	0.0	100.0
Provides: doc. RND	r. Roman Soták, PhD.	
Date of last modification: 26.01.2022		
2		

UAL/10 Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present Number of ECTS credits: 5 Recommended semester/trimester of the course: 1., 3. Course level: III. Prerequisities: Conditions for course completion: Exam consisting of a written test and of a oral examination. Learning outcomes: To achieve a basic orientation in the methods of modern algebra. Follow up on the acquired knowledge of algebra, expand it and generalize; gain additional knowledge of universal algebra and be able to apply it to specific situations. The aim is to have sufficient mathematical knowledge and apparatus to enable the independent solution of various problems related to scientific research and the publication of these results. Brief outline of the course: Relations, operations, algebraic structures. Congruences, homomorphism and isomorphism theorems. Application to abstract automata and other structures. Automorphism groups and endomorphism monoids of algebraic structures, abstract and concrete representation problem. Subalgebras. Direct and subdirest product. Direct and inverse limit of algebras. Terms. Free algebras. Birkhoff theorems about varieties. Structures and 1st order logic. Recommended literature: G. Grätzer: Universal Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. S. Burris, H.P.Sankappanavar: A Course in Universal Algebra. Springer-Verlag, 1981; online http://orion.math.iastate.edu/cliff/BurrisSanka.pdf.	University: P. J. Šafá		
attraction attraction attraction attractent attractin at		cience	
Course type: Lecture Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present Number of ECTS credits: 5 Recommended semester/trimester of the course: 1., 3. Course level: III. Prerequisities: Conditions for course completion: Exam consisting of a written test and of a oral examination. Learning outcomes: To achieve a basic orientation in the methods of modern algebra. Follow up on the acquired knowledge of algebra, expand it and generalize; gain additional knowledge of universal algebra and be able to apply it to specific situations. The aim is to have sufficient mathematical knowledge and apparatus to enable the independent solution of various problems related to scientific research and the publication of these results. Brief outline of the course: Relations, operations, algebraic structures. Congruences, homomorphism and isomorphism theorems. Application to abstract automata and other structures. Automorphism groups and endomorphism monoids of algebraic structures, abstract and concrete representation problem Subalgebras. Direct and subdirest product. Direct and inverse limit of algebras. Terms. Free algebras. Birkhoff theorems about varieties. Structures and 1st order logic. Recommended literature: G. Grätzer: Universal Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. S.Burris, H.P.Sankappanavar: A Course in Universal Algebra. Springer-Verlag, 1981; online http://orion.math.iastate.edu/cliff/Burris	Course ID: ÚMV/ dUAL/10		
Recommended semester/trimester of the course: 1., 3. Course level: III. Prerequisities: Conditions for course completion: Exam consisting of a written test and of a oral examination. Learning outcomes: To achieve a basic orientation in the methods of modern algebra. Follow up on the acquired knowledge of algebra, expand it and generalize; gain additional knowledge of universal algebra and be able to apply it to specific situations. The aim is to have sufficient mathematical knowledge and apparatus to enable the independent solution of various problems related to scientific research and the publication of these results. Brief outline of the course: Relations, operations, algebraic structures. Congruences, homomorphism and isomorphism theorems. Application to abstract automata and other structures. Automorphism groups and endomorphism monoids of algebraic structures, abstract and concrete representation problem Subalgebras. Direct and subdirest product. Direct and inverse limit of algebras. Terms. Free algebras. Birkhoff theorems about varieties. Structures and 1st order logic. Recommended literature: G. Grätzer: Universal Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. S. Burris, H.P. Sankappanavar: A Course in Universal Algebra. Springer-Verlag, 1981; online http://orion.math.iastate.edu/cliff/BurrisSanka.pdf. V.P.Snaith: Groups, Rings and Galois Theory, Word Scientific Publ. Co.,New Jersey-London-Singapore, 2003. M. Kolibiar a kol.: Algebra a pribuzné disciplíny, Bratislava, 1992. B. Jónsson: Topics in Universal Algebra, Springer-	Course type: Lectur Recommended cour Per week: 3 Per stu	re rse-load (hours): Idy period: 42	
Course level: III. Prerequisities: Conditions for course completion: Exam consisting of a written test and of a oral examination. Learning outcomes: To achieve a basic orientation in the methods of modern algebra. Follow up on the acquired knowledge of algebra, expand it and generalize; gain additional knowledge of universal algebra and be able to apply it to specific situations. The aim is to have sufficient mathematical knowledge and apparatus to enable the independent solution of various problems related to scientific research and the publication of these results. Brief outline of the course: Relations, operations, algebraic structures. Congruences, homomorphism and isomorphism theorems. Application to abstract automata and other structures. Automorphism groups and endomorphism monoids of algebraic structures, abstract and concrete representation problem Subalgebras. Direct and subdirest product. Direct and inverse limit of algebras. Terms. Free algebras. Birkhoff theorems about varieties. Structures and 1st order logic. Recommended literature: G. Grätzer: Universal Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. S.Burris, H.P.Sankappanavar: A Course in Universal Algebra. Springer-Verlag, 1981; online http://orion.math.iastate.edu/cliff/BurrisSanka.pdf. V.P.Snaith: Groups, Rings and Galois Theory, Word Scientific Publ. Co.,New Jersey-London-Singapore, 2003. M. Kolibiar a kol.: Algebra a pribuzné discipliny, Bratislava, 1992. B. Jónsson: Topics in Universal Algebra, Springer-Verlag, 1972.	Number of ECTS cr	edits: 5	
 Prerequisities: Conditions for course completion: Exam consisting of a written test and of a oral examination. Learning outcomes: To achieve a basic orientation in the methods of modern algebra. Follow up on the acquired knowledge of algebra, expand it and generalize; gain additional knowledge of universal algebra and be able to apply it to specific situations. The aim is to have sufficient mathematical knowledge and apparatus to enable the independent solution of various problems related to scientific research and the publication of these results. Brief outline of the course: Relations, operations, algebraic structures. Congruences, homomorphism and isomorphism theorems. Application to abstract automata and other structures. Automorphism groups and endomorphism monoids of algebraic structures, abstract and concrete representation problem. Subalgebras. Direct and subdirest product. Direct and inverse limit of algebras. Terms. Free algebras. Birkhoff theorems about varieties. Structures and Ist order logic. Recommended literature: G. Grätzer: Universal Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. S.Burris, H.P.Sankappanavar: A Course in Universal Algebra. Springer-Verlag, 1981; online http://orion.math.iastate.edu/cliff/BurrisSanka.pdf. V.P.Snaith: Groups, Rings and Galois Theory, Word Scientific Publ. Co.,New Jersey-London-Singapore, 2003. M. Kolibiar a kol.: Algebra a pribuzné disciplíny, Bratislava, 1992. B. Jónsson: Topics in Universal Algebra, Springer-Verlag, 1972. 	Recommended seme	ester/trimester of the course: 1., 3.	
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To achieve a basic orientation in the methods of modern algebra. Follow up on the acquired knowledge of algebra, expand it and generalize; gain additional knowledge of universal algebra and be able to apply it to specific situations. The aim is to have sufficient mathematical knowledge and apparatus to enable the independent solution of various problems related to scientific research and the publication of these results. Brief outline of the course: Relations, operations, algebraic structures. Congruences, homomorphism and isomorphism theorems. Application to abstract automata and other structures. Automorphism groups and endomorphism monoids of algebraic structures, abstract and concrete representation problem. Subalgebras. Direct and subdirest product. Direct and inverse limit of algebras. Terms. Free algebras. Birkhoff theorems about varieties. Structures and 1st order logic. Recommended literature: G. Grätzer: Universal Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. S.Burris, H.P.Sankappanavar: A Course in Universal Algebra. Springer-Verlag, 1981; online http://orion.math.iastate.edu/cliff/BurrisSanka.pdf. V.P.Snaith: Groups, Rings and Galois Theory, Word Scientific Publ. Co.,New Jersey-London-Singapore, 2003. M. Kolibiar a kol.: Algebra a príbuzné disciplíny, Bratislava, 1992. B. Jónsson: Topics in Universal Algebra, Springer-Verlag, 1972.			
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 G. Grätzer: Universal Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. S.Burris, H.P.Sankappanavar: A Course in Universal Algebra. Springer-Verlag, 1981; online http://orion.math.iastate.edu/cliff/BurrisSanka.pdf. V.P.Snaith: Groups, Rings and Galois Theory, Word Scientific Publ. Co.,New Jersey-London-Singapore, 2003. M. Kolibiar a kol.: Algebra a príbuzné disciplíny, Bratislava, 1992. B. Jónsson: Topics in Universal Algebra, Springer-Verlag, 1972. 	To achieve a basic of knowledge of algebra and be able to apply if and apparatus to enable	a, expand it and generalize; gain additional knowledge of universal algebra it to specific situations. The aim is to have sufficient mathematical knowledge ole the independent solution of various problems related to scientific research	
Course language:	To achieve a basic of knowledge of algebra and be able to apply if and apparatus to enable and the publication of Brief outline of the c Relations, operation theorems. Application subalgebras. Direct	a, expand it and generalize; gain additional knowledge of universal algebra it to specific situations. The aim is to have sufficient mathematical knowledge ole the independent solution of various problems related to scientific research f these results. course: is, algebraic structures. Congruences, homomorphism and isomorphism on to abstract automata and other structures. Automorphism groups and olds of algebraic structures, abstract and concrete representation problem, and subdirest product. Direct and inverse limit of algebras. Terms. Free	
Slovak and English	To achieve a basic of knowledge of algebra and be able to apply if and apparatus to enable and the publication of Brief outline of the c Relations, operation theorems. Application endomorphism mono Subalgebras. Direct algebras. Birkhoff the Recommended litera G. Grätzer: Universa S.Burris, H.P.Sankap online http://orion.ma V.P.Snaith: Groups, F Singapore, 2003. M. Kolibiar a kol.: A	a, expand it and generalize; gain additional knowledge of universal algebra it to specific situations. The aim is to have sufficient mathematical knowledge ole the independent solution of various problems related to scientific research f these results. Fourse: is, algebraic structures. Congruences, homomorphism and isomorphism on to abstract automata and other structures. Automorphism groups and oids of algebraic structures, abstract and concrete representation problem and subdirest product. Direct and inverse limit of algebras. Terms. Free eorems about varieties. Structures and 1st order logic. nture: I Algebra, 2nd Edition, Springer Verlag, Berlin - New York, 2008. panavar: A Course in Universal Algebra. Springer-Verlag, 1981; ath.iastate.edu/cliff/BurrisSanka.pdf. Rings and Galois Theory, Word Scientific Publ. Co.,New Jersey-London- lgebra a príbuzné disciplíny, Bratislava, 1992.	

Course assessment Total number of assessed students: 5	
N	Р
0.0	100.0
Provides: prof. RNDr. Danica Studenovská, CSc.	
Date of last modification: 24.11.2021	
Approved: prof. RNDr. Tomáš Madaras, PhD.	