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University: P. J. Šafá:	rik University in Košice					
Faculty: Faculty of Science						
Course ID: ÚMV/ ATA/22	Course name: Algebra and theoretical arithmetic					
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 1 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 14 esent					
Recommended seme	eulls: 5					
Course level: II						
Prerequisities:						
<b>Conditions for cours</b> During the term, eac based on the overall p Marking classification FX:0%-50%	e completion: h student receives marks for two written exams. Final marking is assigned points for the work throughout the term, for homework and their presentation. on: A:91%-100%, B:81%-90%, C:71%-80%, D:61%-70%, E:51%-60%,					
Learning outcomes: Obtain knowledge ab the orderigs on them. 1. familiarise themsel forward arguments, 2. gain a deeper und interconnections, 3. be able to define an 4. know how to solv obtained results.	out sets N, Z, Q and R, about their axiomatic building-up, the operations and The student will lves with mathematical culture, ways of thinking, self-expression and putting derstanding of the base terminology of real analysis, their properties and nd interpret key terms, prove their basic properties and relationships, re tasks focused on utilising the aforementioned concepts and interpret the					
Brief outline of the c Ordered Domains, A: Definition and Proper Number-Theoretic Pr The Rational Number Integral Domains and Cantor Sequences, N Ordered Fields, Relat the Completeness of t the Isomorphism of C the Complex Number	ourse: xioms for Rings, Construction for Rings, rties of the Integers, roperties of the Integers, rs, The Arithmetic of the Rational Numbers, I Quotient Fields, The Arithmetic of Sequences, ull Sequences, The Real Numbers, ions between Ordered Fields and the Field of Rational Numbers, he Real Numbers, more Theorems on Ordered and Complete, Ordered Fields, Complete, Ordered Fields, rs					
<b>Recommended litera</b> T. Katriňák, M. Gava Bratislava, 1985.	t <b>ure:</b> lec, E. Gedeonová, J. Smítal: Algebra a teoretická aritmetika (1), Alfa,					

T. Šalát, A. Haviar, T. Hecht, T. Katriňák: Algebra a teoretická aritmetika (2), Alfa, Bratislava, 1986.

G. Birkhoff, S. Mac Lane: Prehl'ad modernej algebry, Alfa, Bratislava, 1979.

N. T. Hamilton, J. Landin: Set Theory. The Structure of Arithmetic, Dover Publications, Inc., 2018.

Course language: Slovak							
Notes:							
Course assessment Total number of assessed students: 71							
А	A B C D E FX						
43.66	43.66 26.76 14.08 12.68 2.82 0.0						
Provides: prof. RNDr. Jozef Doboš, CSc.							
Date of last modification: 25.04.2022							
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.							

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚMV/ AIM/22	Course name: Application of ICT into mathematics teaching
Course type, scope a Course type: Practic Recommended cou Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent
Number of ECTS cr	edits: 2
Recommended seme	ster/trimester of the course: 3.
Course level: II.	
Prerequisities: ÚMV	/DDMb/22
Conditions for course To master specific m of mathematical edu to assess and evaluat support active learnin and research approad teaching of mathema effective use of infor several possibilities of Rating: Entry questionnaire - Design and solution of Test for the application Project for the application topic - 10 b. Didactic processing of Test for solving conse Participating in a dise Use of CAS in solvin Design of examples to Classification scale: A: 91 % - 100 %, B: 8	The completion: eans of information and communication technologies usable for the support cation and for solving various types of mathematical problems. To be able e the suitability and ways of using selected types of modern technologies to ng of mathematics. To be able to apply the basic principles of constructivism thes to the teaching of mathematics in the planning and preparation of the tics. To be able to find and prepare ideas and examples for meaningful and mation and communication technologies in the teaching process, to point out of solving mathematical problems. 2 b. 2 b. 2 b. 5 f motivational word problems for the use of systems of linear equations - 5 b. 5 on of a spreadsheet in solving mathematical problems - 4 b. 5 cation of the EUR model or research-oriented teaching in teaching a selected of a selected construction task - 5 b. 5 truction tasks - 4 b. 5 cussion forum - 2 b. 5 g tasks - 5 b. 5 for the use of CAS in teaching mathematics - 8 b. 5 solving tasks - 5 b. 5 for the use of CAS in teaching mathematics - 8 b. 5 solving tasks - 5 0%.
Learning outcomes: Students will learn statechnologies in solv suggestions for the environment support modern information	andard work procedures for the use of modern information and communication ing mathematical problems. Students will be provided with examples and use of modern information technologies in creating a stimulating learning ting active learning mathematics. Students will gain skills in the use of technologies in modeling real situations and exploring mathematical patterns.

specific topics in school mathematics with effective and meaningful use of modern information technologies.

#### Brief outline of the course:

1. Integration of modern information technologies into mathematical education.

2. - 3. Possibilities of using mathematical tools of a spreadsheet in modeling and solving algorithmic problems in teaching mathematics.

4. - 5. Constructivist conception of teaching mathematics, research of properties of mathematical objects and their mutual relations.

6. - 7. Solving construction tasks, examining the properties of identical and similar transformations and their use in solving problems.

8. Possibilities of using dynamic geometric systems in solving selected types of stereometry tasks.

9. - 10. Mathematical modeling and problem solving in the CAS environment. The position of CAS in the teaching of mathematics.

#### **Recommended literature:**

Oldknow, A., Taylor, R., Tetlow, L.: Teaching Mathematics Using ICT, Bloomsbury Publishing, 2010.

Lukáč, S.: Multimédiá a počítačom podporované učenie sa v matematike, PF UPJŠ Košice 2001. Johnston-Wilder, S., Pimm, D.: Teaching secondary mathematics with ICT, Open University Press, 2005.

Vaníček, J.: Počítačové kognitivní technologie ve výuce geometrie. Pedagogická fakulta Univerzity Karlovy, 2009.

#### **Course language:**

Slovak

#### Notes:

**Course assessment** 

Total number of assessed students: 202

44.06 28.71 15.35 7.43 4.46 0.0	А	В	С	D	Е	FX
	44.06	28.71	15.35	7.43	4.46	0.0

Provides: doc. RNDr. Stanislav Lukáč, PhD.

**Date of last modification:** 19.04.2022

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚM APM/19	Course ID: ÚMV/ PM/19Course name: Applications of mathematics						
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present							
Number of EC	<b>FS credits:</b> 2						
Recommended	semester/trimes	ster of the cours	e: 2.				
Course level: II	•						
Prerequisities:							
<b>Conditions for</b> Presentation on	<b>course completi</b> the chosen topic	<b>on:</b> during the semir	nar.				
<b>Learning outcomes:</b> Students get an overview of applications of mathematics and its tools in various areas of human activity.							
<ol> <li>Applications of graphs in analysis of complex networks, their central actors and their community structure.</li> <li>Statistical methods used in shape recognition (geometric morphometrics, principal component analysis, linear regression) with application in the analysis of dinosaur skulls and other examples of the use of shape recognition in practice.</li> </ol>							
Recommended 1. E. A. Robinso 2. U. Brandes, T Computer Scier 3. Karchynskay J. P., de Winter, Obesity for Add	literature: on, D. H. Ullmar F. Erlebach: Netw ice, 3418), 2005. a, V., Kopčáková A. F. a Reijneve blescents? Int. J.	nn: A mathematic vork Analysis: M h, J., Klein, D., G ld, S. A. (2020). Environ. Res. Pu	al look at politic ethodological Fc ába, A., Madaras Is BMI a Valid In blic Health, 17, 4	s, CRC Press, 20 oundations (Lect sová-Gecková, A ndicator of Over 1815.	010. ture Notes in A., van Dijk, tweight and		
Course language: Slovak							
Notes:							
Course assessm Total number of	ent fassessed studen	ts: 28					
А	В	С	D	Е	FX		
82.14	17.86	0.0	0.0	0.0	0.0		
<b>Provides:</b> RND Kiseľák, PhD., c	r. Andrej Gajdoš loc. RNDr. Danie	, PhD., doc. RND el Klein, PhD., pi	Dr. Martina Hančo of. RNDr. Tomá	ová, PhD., doc. š Madaras, PhD	Mgr. Jozef		

**Date of last modification:** 25.08.2022

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚFV/ ASFU/22	Course name: Astrophysics
Course type, scope a Course type: Lectur Recommended cour Per week: 2 Per stu Course method: pro	and the method: re rse-load (hours): udy period: 28 esent
Number of ECTS cr	edits: 2
Recommended seme	ester/trimester of the course: 3.
Course level: II.	
Prerequisities:	
Conditions for cours To successfully comp	se completion: plete the course, the student must demonstrate sufficient understanding of the

To successfully complete the course, the student must demonstrate sufficient understanding of the basic knowledge of the structure and evolution of the universe. Knowledge of the basic properties of stars and methods of their determination, the structure, evolution and energy sources of stars, the structure of matter in the universe and its evolution is required. The condition for obtaining credits is passing a written or oral exam, preparation, and presentation of a semester essay. The credit evaluation of the course considers the following student workload: direct teaching (1 credit) and assessment (1 credits). The minimum threshold for completing the course is to obtain at least 50% of the total score, using the following rating scale: A (90-100%), B (80-89%), C (70-79%), D (60- 69%), E (50-59%), Fx (0-49%).

### Learning outcomes:

After completing the lectures, the student will master the basic knowledge about the properties of stars and methods of their determination, structure, evolution and energy sources of stars, the structure of matter in the universe and its evolution. It will also have sufficient physical knowledge and mathematical apparatus to enable independent solving of a various tasks related to astrophysical research.

### Brief outline of the course:

1. Basic properties of stars and methods of their determination: radiation flux, apparent and absolute magnitude, distances of stars, colors of stars.

2. Temperature of stars, black body radiation, spectra of atoms and molecules, non-thermal radiation.

3. Spectral classifications, luminosity classes, HR diagram, masses of stars.

4. Structure of stars: basic equations of stellar structure, transfer of energy by radiation and convection, production of energy in stars, fusion reactions.

5. Evolution of stars: interstellar matter and formation of stars and stellar systems, Jeans' criterion, protostars.

6. Evolution of stars: main sequence stars, giants, final stages of star evolution - white dwarfs, neutron stars and black holes.

7. Distribution of matter in the universe: Milky Way, its structure, dynamics, and evolution, types of galaxies, quasars, intergalactic matter, local group of galaxies.

8. Clusters and super-clusters of galaxies, large-scale structure of the universe, dark matter, and dark energy.

9. Evolution of the universe: historical development of views on the universe, Olberson's paradox, gravitational paradox, Cosmological principle.

10. Isotropicity and homogeneity of the universe, relic radiation, expansion of the universe. Steady state theory.

11. Relativistic cosmology: cosmological solutions of Einstein's equations, models of the universe and their properties, theory of the expanding universe, the Big Bang, the age of the universe.

12. Origin of the universe: the initial stages of the expansion of the universe, inflationary expansion and nucleogenesis, the formation of galaxies and galaxy clusters.

#### **Recommended literature:**

1. Carroll, B. W., Ostlie, D. A., An Introduction to Modern Astrophysics, Addison-Wesley Publishing Company, Reading, Massachusetts, 1996;

2. Contopoulos, D. Kotsakis, Cosmology, the structure and evolution of the Universe, Springer, 1984;

3. Pasachoff, J.M., Filippenko, A., The Cosmos: Astronomy in the New Millennium, Cambridge University Press, 2013;

4. Vanýsek, V., Základy astronomie a astrofyziky, Academia, Praha, 1980;

5. Čeman, R., Pittich, E., Vesmír 1 - Slnečná sústava, MAPA Slovakia, Bratislava, 2002;

6. Čeman, R., Pittich, E., Vesmír 2 - Hviezdy - Galaxie, MAPA Slovakia, Bratislava, 2003;

#### **Course language:**

Slovak, English

Notes:

#### Course assessment

Total number of assessed students: 28

А	В	С	D	Е	FX
64.29	32.14	3.57	0.0	0.0	0.0

Provides: doc. RNDr. Rudolf Gális, PhD.

**Date of last modification:** 06.09.2022

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> KPPaPZ/SNP/09	Course name: Bullying, Violence and Their Prevention
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent edits: 2
Recommended seme	star/trimester of the course: 1 3
Course level: II	
Course level: II.	
Prerequisities:	
Active participation - Active participation - Seminar work - 40% Seminar work 2 - 409	n seminars. Detailed information will be given. 20%
Learning outcomes: The student will acq about solving proble of prevention. With implementation of pr and their willingness	uire the latest information about bullying in schools and its consequences, matic situations associated with bullying as well as about possible ways in the seminars, students will develop professional skills through the evention activities. At the same time, their sensitivity to the issue of bullying to actively address it during their pedagogical practice will increase.
Brief outline of the c Aggressive behavior. environment). Manif role of teacher, school level of school, class, activities used in the	ourse: Characteristics of actors of bullying (personality, characteristics of family estations and possible causes of bullying. Bullying as a group process. The and parent in solving bullying. Possibilities of prevention of bullying at the individuals. Primary, secondary and tertiary prevention. Socio-psychological prevention of bullying.
Recommended litera Kolář, M.: Bolest šik 2001 Jánošová a kol. Psych Říčan, P.: Agresivita	anování. Cesta k zastavení epidemie šikanování ve školách. Portál, Praha, nologie školní šikany. Grada, Praha, 2016 a šikana mezi dětmi. Portál, Praha, 1995

## **Course language:**

Notes:

Course assessment Total number of assessed students: 214							
A B C D E FX							
85.51 13.08 0.93 0.47 0.0 0.0							
Provides: doc. Mgr. Mária Bačíková, PhD.							
Date of last modification: 24.06.2022							
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.							

University: P. J. Šafárik University in Košice						
Faculty: Facult	Faculty: Faculty of Science					
Course ID: KP SDaM/15	Course ID: KPO/ SDaM/15Course name: Child and Adolescent Sociology					
Course type, so Course type: J Recommende Per week: 2 P Course metho	cope and the me Lecture d course-load (h er study period: d: present	thod: ours): 28				
Number of EC	TS credits: 2					
Recommended	semester/trimes	ster of the cours	e: 3.			
Course level: II	[.					
Prerequisities:						
Conditions for	Conditions for course completion:					
Learning outcomes:						
Brief outline of the course:						
Recommended literature:						
Course language:						
Notes:						
Course assessment Total number of assessed students: 968						
А	В	С	D	Е	FX	
50.21 29.13 14.98 3.62 1.55 0.52						
Provides: doc. Mgr. Alexander Onufrák, PhD.						
Date of last modification: 29.06.2022						
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.						

University: P. J. Šafárik University in Košice					
Faculty: Facult	Faculty: Faculty of Science				
Course ID: KP MT/09	e ID: KPE/ Course name: Class Management				
Course type, sc Course type: 1 Recommended Per week: 2 P Course metho	ope and the met Practice d course-load (h er study period: d: present	thod: ours): 28			
Number of EC	<b>TS credits:</b> 2				
Recommended	semester/trimes	ster of the cours	e: 2.		
Course level: II	•				
Prerequisities:					
Conditions for	course completi	ion:			
Learning outco	omes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	ge:				
Notes:					
Course assessm Total number of	ent f assessed studen	ıts: 572			
A	В	С	D	Е	FX
53.85	34.79	8.39	1.57	0.52	0.87
Provides: doc. PaedDr. Renáta Orosová, PhD.					
Date of last modification: 12.03.2024					
Approved: prof Kollár, DrSc.	f. PhDr. Ol'ga Or	osová, CSc., prof	E RNDr. Jozef Do	oboš, CSc., prof.	RNDr. Peter

University: P. J. Šafárik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science				
<b>Course ID:</b> ÚFV/ MPPc/15	ourse ID: ÚFV/ PPc/15Course name: Continuous Practice Teaching I				
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 4t Course method: present				
Number of ECTS cro	edits: 2				
Recommended seme	ster/trimester of the cours	e: 3.			
Course level: II.					
Prerequisities: ÚFV/	MPPb/15				
<b>Conditions for cours</b> Confirmed list of sitti extent of 6 lessons of and written preparatio	e completion: ngs in on classes and teaching sitting in on classes and 18 on for the lessons.	ng as a confirmation of attendance in the required physics lessons taught by student. Lesson records			
<b>Learning outcomes:</b> Student gains under t Physics.	the guidance of teacher train	ner practical teaching skills within the subject of			
Brief outline of the c Sitting in on classes, of observed and taug	ourse: teaching physics lessons by ht lessons.	v student, consulted with teacher trainer, analysis			
<b>Recommended litera</b> Textbooks for lower a	ture: and upper secondary school	physics			
<b>Course language:</b> Slovak					
Notes:					
Course assessment Total number of assessed students: 31					
	abs	n			
	100.0	0.0			
Provides: doc. RNDr. Jozef Hanč, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CSc., prof	<sup>2</sup> RNDr. Jozef Doboš, CSc., prof. RNDr. Peter			

University: P. J. Šafá	University: P. J. Šafárik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science					
<b>Course ID:</b> ÚFV/ MPPd/15	ourse ID: ÚFV/ IPPd/15Course name: Continuous Practice Teaching II					
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 6t Course method: present					
Number of ECTS cro	edits: 2					
Recommended seme	ster/trimester of the cou	urse: 4.				
Course level: II.						
Prerequisities: ÚFV/	MPPc/15					
<b>Conditions for cours</b> Confirmed list of sitti extent of 8 lessons of and written preparatio	e completion: ngs in on classes and tead sitting in on classes and a on for the lessons.	ching as a confirmation of attendance in the required 30 physics lessons taught by student. Lesson records				
Learning outcomes: Student gains under t Physics.	he guidance of teacher t	rainer practical teaching skills within the subject of				
Brief outline of the c Sitting in on classes, of observed and taug	ourse: teaching physics lessons nt lessons.	by student, consulted with teacher trainer, analysis				
<b>Recommended litera</b> Textbooks for lower a	ture: and upper secondary scho	ool physics				
<b>Course language:</b> Slovak						
Notes:						
Course assessment Total number of assessed students: 27						
abs n						
	100.0 0.0					
Provides: doc. RNDr. Jozef Hanč, PhD.						
Date of last modification: 03.05.2015						
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CSc., p	rof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter				

University: P. J. Šafá	rik University in Košice				
Faculty: Faculty of S	cience				
Course ID: ÚMV/ Course name: Continuous practice teaching I VSPc/15					
Course type, scope a Course type: Praction Recommended cour Per week: Per stud Course method: pre	nd the method: ce rse-load (hours): ly period: 4t esent				
Number of ECTS cr	edits: 2				
Recommended seme	ster/trimester of the course: 3.				
Course level: II.					
Prerequisities: ÚMV	/VPPb/15				
Teaching of a specific and 6 visitation of cla Submission of written classes visitations, se	ed number of hours and visitations of specified number of classes (18 teaching asses). n assignments (reflection on teaching practice, statement of teaching hours and lected lesson plans).				
Learning outcomes: Application of the k pedagogical practice analysis of the lesson shift his/her knowled	nowledge acquired in didactic courses focused on teaching mathematics in . Development of the student's self-reflection within the framework of the is taught by the student. Identification of the student's weaknesses in order to ge. Acquaint students with the atmosphere and the organization of school.				
Brief outline of the c Visitations of classes Analysis of lessons Lesson plans prepara Classes managed acc Reflection on realize	ourse: in selected lessons tion ording to prepared lesson plan d classes				
Recommended litera Mathematics curricul Hejný, M.: Teória vy M. Hejný, J. Novotna Karlova v Praze - Peo	nture: a and textbooks for middle and secondary schools učovania matematiky 2. Bratislava : SPN 1989 á, N. Stehlíková: Dvacet pět kapitol z didaktiky matematiky 2, Univerzita dagogická fakulta, Praha, 2004				
<b>Course language:</b> Slovak					
Notes:					

<b>Course assessment</b> Total number of assessed students: 109					
abs	n				
100.0	0.0				
<b>Provides:</b> doc. RNDr. Ingrid Semanišinová, PhD., doc. RNDr. Dušan Šveda, CSc., RNDr. Veronika Hubeňáková, PhD.					
Date of last modification: 24.08.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof Kollár, DrSc.	E. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter				

University: P. J. Šafá	rik University in Košice				
Faculty: Faculty of S	Science				
Course ID: ÚMV/ Course name: Continuous practice teaching II VSPd/15					
Course type, scope a Course type: Practi Recommended cou Per week: Per stud Course method: pr	and the method: ce rse-load (hours): ly period: 6t esent				
Number of ECTS cr	redits: 2				
Recommended seme	ester/trimester of the course: 4.				
Course level: II.					
Prerequisities: ÚMV	7/VSPc/15				
Teaching of a specifi and 8 visitation of cl Submission of writte classes visitations, se	ed number of hours and visitations of specified number of classes (30 teaching asses). n assignments (reflection on teaching practice, statement of teaching hours and elected lesson plans).				
Learning outcomes: Application of the k pedagogical practice analysis of the lesson shift his/her knowled	mowledge acquired in didactic courses focused on teaching mathematics in e. Development of the student's self-reflection within the framework of the ns taught by the student. Identification of the student's weaknesses in order to lge. Acquaint students with the atmosphere and the organization of school.				
Brief outline of the of Visitations of classes Analysis of lessons Lesson plans prepara Classes managed acc Reflection on realize	course: s in selected lessons ation cording to prepared lesson plan d classes				
Recommended liter: Mathematics curricu Hejný, M.: Teória vy M. Hejný, J. Novotn Karlova v Praze - Pe	ature: la and textbooks for middle and secondary schools vučovania matematiky 2. Bratislava : SPN 1989 á, N. Stehlíková: Dvacet pět kapitol z didaktiky matematiky 2, Univerzita dagogická fakulta, Praha, 2004				
<b>Course language:</b> Slovak					
Notes:					

Course assessment Total number of assessed students: 98						
abs	n					
100.0	0.0					
<b>Provides:</b> doc. RNDr. Ingrid Semanišinová, PhD., doc. RNDr. Dušan Šveda, CSc., RNDr. Veronika Hubeňáková, PhD.						
Date of last modification: 24.08.2022						
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.						

University: P. J	University: P. J. Šafárik University in Košice				
Faculty: Facult	Faculty: Faculty of Science				
Course ID: KP TTUP/15	PE/ Course name: Creating Text Teaching Aids				
Course type, so Course type: 1 Recommended Per week: 2 P Course metho	cope and the met Practice d course-load (h er study period: d: present	thod: ours): 28			
Number of EC	TS credits: 2				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2.		
Course level: II	•				
Prerequisities:					
<b>Conditions for</b>	course completi	on:			
Learning outco	omes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	ge:				
Notes:					
Course assessm Total number o	nent f assessed studen	ıts: 229			
А	В	С	D	E	FX
57.64	30.13	8.73	2.62	0.87	0.0
Provides: doc. PaedDr. Renáta Orosová, PhD.					
Date of last modification: 12.03.2024					
Approved: prof Kollár, DrSc.	f. PhDr. Ol'ga Oro	osová, CSc., prof	E. RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter

University: P. J	. Šafárik Univers	ity in Košice				
Faculty: Facult	y of Science					
<b>Course ID:</b> KSSFaK/ KJPUAP/15	Course na	Course name: Culture of Spoken Discourse				
Course type, sc Course type: I Recommended Per week: 1 / 2 Course metho	ope and the met Lecture / Practice d course-load (h l Per study perio d: present	hod: ours): od: 14 / 14				
Number of EC'	TS credits: 2					
Recommended	semester/trimes	ter of the cours	se: 1.			
Course level: II	•					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	omes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessm Total number of	ent f assessed studen	ts: 0				
А	В	С	D	E	FX	
0.0	0.0	0.0	0.0	0.0	0.0	
Provides: PhDr	. Iveta Bónová, P	hD.	•			
Date of last mo	dification: 24.06	.2022				
Approved: prof Kollár, DrSc.	ř. PhDr. Oľga Oro	osová, CSc., pro	f. RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter	

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: KPPaPZ/VPU/17	Course name: Developmental Psychology for Teachers						
Course type, scope an Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of ECTS cro	edits: 2						
Recommended seme	ster/trimester of the course: 1.						
Course level: II.							
Prerequisities:							
<b>Conditions for cours</b> Evaluation of particip of seminar work,	e completion: bation in teaching, continuous evaluation of activity in seminars, evaluation						
Learning outcomes: The graduate will un characterize the norm school age and adoles published in foreign the topics covered. The of parents and friends psychology in the pra	derstand the principles of developmental psychology, and will be able to in in separate developmental stages with a specific focus on the period of cence. As part of the seminar work, a students will process current knowledge journals. They will have a knowledge about the current social discourse on the graduate will be able to consider various aspects of the possible influence is on the development of piupils and apply the knowledge of developmental ctice of the teacher.						
Brief outline of the conditional determinants and far Socialization in separation the period of sch development. Application wire relationship with respective separation with the period of sch development.	<b>ourse:</b> actors of development, cognitive development, personality development. rate developmental stages (family, peers, school). Specifics of development ool age, in pubescence and adolescence. Parents and their role in child ation of knowledge of developmental psychology in the teacher's practice th students in different developmental stages, creating a teacher-student ect to the development needs of the student.						
Recommended litera Vágnerová, M. Vývoj Říčan, P. Cesta živote Thorová, K. Vývojov Macek, P. Adolesceno Matějček, Z rôzne o Bačíková, M. Psycho	<b>ture:</b> jová psychologie. Portál, Praha 2000 em. Portál, Praha, 2004. á psychologie. Portál, Praha, 2015. ce. Praha: Portál, 2003 diela lógia rodičovskej kontroly, Šafárik Press, Košice 2019						
Course language:							
Notes:							

Course assessment Total number of assessed students: 109							
A B C D E FX							
77.98	15.6	3.67	2.75	0.0	0.0		
Provides: doc. Mgr. Mária Bačíková, PhD.							
Date of last modification: 24.06.2022							
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.							

University: P. J. Šafárik University in Košice						
Faculty: Facult	y of Sc	cience				
Course ID: ÚF DF1/22	ourse ID: ÚFV/ Course name: Didactics of Physics I F1/22					
Course type, sc Course type: I Recommended Per week: 2 / 2 Course metho	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of EC	TS cre	edits: 4				
Recommended	semes	ster/trimes	ster of the cours	e: 2.		
Course level: II	•					
Prerequisities:						
Prerequisities:         Conditions for course completion:         semester work:         elaborated online assignments in lms.upjs.sk         analysis of model methodologies         elaboration and presentation of own educational activity         oral examination:         clarification of two topics from subject didactics         clarification of the thematic unit         presentation of model methodology         Learning outcomes:         Knowledge and skills in the field of Physics education, overview about the problems of Physics         education, basic skills necessary to prepare and quide educational activities, school experiments,         problem solving and to use modern media for physics education.         Brief outline of the course:         Within the Didactics of Physics subject the core problems of physics education are introduced and case studies of their solving are interpreted. Strategies on design and implementation of educational activities, their evaluation and the use of modern media are introduced and corresponding skills						
Recommended e- version of sci	Recommended literature: e- version of schoolbook Physics for lower secondary school					
Course language: Slovak, English						
Notes:						
Course assessment Total number of assessed students: 27						
А		В	С	D	E	FX
66.67	2	29.63	3.7	0.0	0.0	0.0

Provides: doc. RNDr. Marián Kireš, PhD., RNDr. Katarína Kozelková, PhD.

**Date of last modification:** 07.09.2021

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ DF2/22	Course name: Didactics of Physics II				
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 2 Per Course method: pre	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present				
Number of ECTS cr	edits: 4				
Recommended seme	ester/trimester of the course: 3.				
Course level: II.					
Prerequisities: ÚFV/	/DF1/22				
Conditions for course teaching plan for two micro teaching activi educational project 2 answering questions end-of course oral ex	se completion: lessons 10p ties 20p 0p during the course 10p camination 40p				
Learning outcomes: knowledge and skills education, basic skill problem solving and	s in the field of Physics education, overview about the problems of Physics Is necessary to prepare and quide educational activities, school experiments, to use modern media for physics education				
<ul> <li>Brief outline of the of</li> <li>1. Didactic methods,</li> <li>2. Graphs in education</li> <li>3. Control, evaluation</li> <li>4. Tests</li> <li>5. Everyday physics</li> <li>6. Computer based m</li> <li>7. Using of Internet a</li> <li>8. IBSE</li> <li>9. Informal activities</li> <li>10. Life long learning</li> <li>11. 12. Semestral pro-</li> </ul>	course: forms and tools in physics education on n and assessment of students results, and its application in education neasurements: and multimedia in education to support physics education g, science teacher training oject presentation				
Recommended litera 1.J. Janovič a kol.: D 2.J. Janovič a kol.: V 3.E. Kašpar a kol.: D 4.E. Mechlová: Dida 5.J. Fenclová: Úvod 6.Vachek, J. a kol.: F 7.Svoboda, E. a kol.	ature: idaktika fyziky, MFF UK Bratislava, 1990 ybrané kapitoly didaktiky fyziky, MFF UK Bratislava, 1999 idaktika fyziky, SPN Praha, 1978 ktika fyziky 1, 2, PdF Ostrava, 1989 do teórie a metodológie didaktiky fyziky, SPN Praha, 1982 yzika pre 1. ročník gymnázia. SPN, Bratislava, 1984. Fyzika pre 2. ročník gymnázia. SPN, Bratislava, 1985.				

8.Lepil, O. a kol.: Fyzika pre 3. ročník gymnázia. SPN, Bratislava, 1986. 9. Pišút, J. a kol.: Fyzika pre 4. ročník gymnázia. SPN, Bratislava, 1987. 10. Scholtz, E., Kireš, M.: Fyzika - Kinematika pre osemročné gymnáziá, SPN, Bratislava, 2001, 104 strán, ISBN 80-08-02848-3 11.Blaško, M., Gajdušek, J., Kireš, M., Onderová, Ľ.: Molekulová fyzika a termodynamika pre osemročné gymnáziá, SPN, Bratislava, 2004, 120 strán, ISBN 80-10-00008-6 12. Scholtz, E., Kireš, M.: Fyzika - Dynamika pre osemročné gymnáziá, SPN, Bratislava, 2007, 231 strán, ISBN 80-10-00013-2 School textbooks for Physics education at upper secondary level **Course language:** Slovak, English Notes: **Course assessment** Total number of assessed students: 27 В С D E FX A 77.78 11.11 7.41 0.0 0.0 3.7 Provides: doc. RNDr. Marián Kireš, PhD., RNDr. Katarína Kozelková, PhD. Date of last modification: 07.09.2021

University: P. J. Šafárik University in Košice						
Faculty: Faculty of Science						
<b>Course ID:</b> ÚMV/ DDMa/22	<b>ID:</b> ÚMV/ <b>Course name:</b> Didactics of mathematics I					
Course type, scop Course type: Lea Recommended c Per week: 1 / 1 P Course method:	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 1 Per study period: 14 / 14 Course method: present					
Number of ECTS	credits: 2					
Recommended se	mester/trimes	ster of the cours	<b>e:</b> 1.			
Course level: II.						
Prerequisities:						
<b>Conditions for co</b> Active participation Seminar works - 6	urse completi on - 40% of ass 50% of assessn	on: sessment nent				
The student understands the term function and its various aspects also in the context of different definitions of the term function. He looks critically at the school curriculum from the point of view of the development of the concept of function. It characterizes high-quality formative assessment and can react differently to correct and incorrect student solutions. He applies the acquired knowledge in the design of the lesson plan. He knows the MTSK model and knows how to use it as a tool for his self-reflection.						
<b>Brief outline of the course:</b> The concept of function in mathematics, its aspects, and definitions. The concept of function in the school curriculum, knowledge of the structure of mathematics with respect to the concept of function. Proximal formative assessment, knowledge of the characteristics of learning mathematics. Instrumented formative assessment with a focus on the use of digital technologies for assessment in mathematics. Selection of tasks and digital tools for teaching functions. MTSK model as a tool for teacher self-reflection.						
<b>Recommended literature:</b> Slovak and Czech mathematics textbooks for secondary education. National mathematics curriculum of Slovakia, Czech republic and USA.						
Course language: Slovak						
Notes:						
Course assessment Total number of assessed students: 121						
A	В	С	D	Е	FX	
47.11	34.71	11.57	4.13	2.48	0.0	

Provides: RNDr. Veronika Hubeňáková, PhD.

Date of last modification: 26.08.2022

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	science		
Course ID: ÚMV/ DDMb/22Course name: Didactics of mathematics II			
Course type, scope a Course type: Lectur	and the method: re / Practice		
Recommended cou	rse-load (hours):		
Per week: 2 / 2 Per	study period: 28 / 28		
Course method: pro	esent		

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

**Prerequisities:** ÚMV/DDMa/22

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

Conditions for continuous evaluation:

- 1. Participation in teaching in accordance with the study rules and instructions of the teacher.
- 2. Activity at seminars.
- 3. Homework and continuous written tests.
- 4. Seminar work creation of an output didactic test

Conditions for successful completion of the course:

1. Participation in teaching in accordance with the study regulations and according to the instructions of the teacher;

2. Credits will be awarded to a student who obtains at least 50% of points from homework, at least 50% of points

from written tests, at least 50% of points from the seminar work and at least 50% from the oral exam. 3. Continuous assessment - 60% of the total assessment, oral exam - 40% of the overall assessment At least 90% of points must be obtained to obtain an A rating, at least 80% to obtain a B rating, at least 70% to obtain a C rating, at least 60% to obtain a D rating, and at least 50% points to obtain an E rating.

#### Learning outcomes:

Students will learn the basic principles of teaching mathematics in secondary and primary schools, strategies for solving problems, creating problem systems, logical-didactic analysis of the curriculum and creating didactic tests. At the same time, they will demonstrate the ability to prepare for teaching specific topics with priority in primary school.

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

1. Subject of Didactics of Mathematics, the development of mathematics and mathematics education.

2. Aims and objectives of mathematics teaching

3. Planning in mathematics teaching Logical and didactical curriculum analysis Determination of learning objectives

- 4. 5. Didactical principles, methods of mathematics teaching
- 6. 7. Assessment of learning outcomes, the creation of didactic tests
- 8. Mathematical problems

9. - 10. Construction numeric fields,

11. Theory of elementary functions,

12. - 13. Synthetic and analytic geometry

#### **Recommended literature:**

[1] M.Hejný a kol.: Teorie vyučovania matematiky, SPN Blava 1989, (in slovak)

[2] L.Frantíková,K.Hončarivová,O.Kopanev: Didaktika matematiky, UPJŠ 1982 (in slovak)

[3] R.Fischer, G.Malle: Človek a matematika, SPN Bratislava 1992 (in slovak)

[4] Polya, G.: How to solve it, Princeton University Press, 1957.

[5] Hejný, M., Kuřina, F.: Dítě, škola a matematika: Konstruktivistické přístupy k vyučování. Portál, Praha 2001. (in czech)

[5] Textbooks and collections of assignments for secondary and primary schools

#### **Course language:**

Slovak

Notes:

#### **Course assessment**

Total number of assessed students: 112

А	В	С	D	Е	FX
38.39	31.25	19.64	8.04	2.68	0.0
	V				

Provides: doc. RNDr. Dušan Šveda, CSc.

**Date of last modification:** 05.05.2022

Faculty: Faculty of Science

Course ID: ÚMV/	Course name: Didactics of mathematics III
DDMc/22	

## Course type, scope and the method:

**Course type:** Lecture / Practice

Recommended course-load (hours):

Per week: 2 / 2 Per study period: 28 / 28

Course method: present

**Number of ECTS credits:** 5

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

Course level: II.

Prerequisities: ÚMV/DDMb/22

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

Conditions for continuous evaluation:

1. Participation in teaching in accordance with the study rules and instructions of the teacher.

- 2. Activity.
- 3. Homework and written tests.
- 4. Seminar work and its presentation at the seminar lesson plan on the selected topic

Conditions for successful completion of the course:

1. Participation in teaching in accordance with the study regulations and according to the instructions of the teacher;

2. Credits will be awarded to a student who scores at least 50% on homework assignments, at least 50% on written tests, and at least 50% on a seminar work. A grade of A requires at least 90%, a grade of B requires at least 80%, a grade of C requires at least 70%, a grade of D requires at least 60%, and a grade of E requires at least 50%.

### Learning outcomes:

The student demonstrates a shift in students' cognitive understanding specifically by orienting to some familiar general student problems (e.g., distinguishing between sentences and definitions) and to specific problems in some areas of mathematics (e.g., incorrect use of the equals sign) when solving a homework assignment.

While solving problems on written tests, the student will show that he or she has a conceptual understanding of mathematical concepts, properties and methods from school mathematics and is familiar with some standard and nonstandard procedures that students use when learning mathematics.

When presenting the seminar work, the student demonstrates that he/she is aware of the potential of the chosen topic, the necessary input knowledge of the pupils and the connections within the topic and with other topics, and has developed the objectives of the lesson properly. Furthermore, he/she demonstrates that he/she is aware of the possibilities of the proposed activities, teaching methods, selected tasks (what are their weaknesses and strengths). Demonstrates that he/she reflects on the response to a pupil's mistake in order to help him/her in his/her learning.

### Brief outline of the course:

The content is based on current research findings related to mathematics teacher's specialised knowledge model. We focus mainly on pedagogical content knowledge, specifically knowledge of features of learning mathematics, knowledge of mathematics teaching, and knowledge of mathematics learning standards.

This knowledge is developed in the context of the five essential topics:

- Numbers, variables and numerical operations with numbers

- Relationships, functions, tables, diagrams

- Geometry and measurement
- Combinatorics, probability, statistics

- Logic, reasoning, proofs.

Within these essential topics we deal with the cognitive process of students, different representations of mathematical concepts, students' difficulties and their possible causes, teaching mathematical proofs, developing students' creativity, ways of motivating pupils, and also some didactical theories, such as Van Hiele's theory of geometric thinking. In each topic area we focus on critical points in terms of students' learning and the teaching of mathematics, preferably in secondary school.

### **Recommended literature:**

[1] M.Hejný a kol. Teória vyučovania matematiky. Bratislava: SPN, 1989.

[2] Hejný, M.; Kuřina, F. Dítě, škola a matematika: konstruktivistické přístupy k vyučování. Praha: Portál, 2001.

[3] Hejný, M.; Novotná, J.; Stehlíková, N. Dvacet pět kapitol z didaktiky matematiky. Praha: PedF UK, 2004.

[4] Fischer, R.; Malle, G. Človek a matematika, Bratislava: SPN, 1992.

[5] Vondrová Naďa a kol. Kritická místa matematiky základní školy v řešení žáků. Praha: Karolinum, 2016.

[6] Textbooks and collections of problems and taks for secondary and middle school.

## Course language:

Slovak

Notes:

### **Course assessment**

Total number of assessed students: 124

А	В	С	D	Е	FX
58.87	14.52	16.13	5.65	4.03	0.81

Provides: doc. RNDr. Ingrid Semanišinová, PhD.

**Date of last modification:** 14.04.2022

University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	cience			
Course ID: ÚFV/ DDP1/22	Course name: Diploma Pr	oject I		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent			
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	e: 1.		
Course level: II.				
Prerequisities:				
<b>Conditions for cours</b> regular consultations development, design	e completion: s with diploma thesis supe of investigation plan	ervisor about the progress of diploma project		
Learning outcomes: Student has studied investigation plan, ha	the theoretical background as presented first results, eve	l, formulates research questions, has designed ntually.		
Brief outline of the c Development of diple	Brief outline of the course: Development of diploma project			
Recommended literat Recommended literat Regulations for diplo template for diploma	ture: ture that is included in the di ma thesis preparation thesis	ploma thesis assignments		
Course language: Slovak				
Notes:	Notes:			
Course assessment Total number of assessed students: 2				
	abs	n		
100.0 0.0		0.0		
Provides:				
Date of last modifica	ition: 15.02.2022			
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CSc., prof	. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter		

University: P. J. Šafá	rik University in Košice						
Faculty: Faculty of S	cience						
Course ID: ÚFV/ DDP2/22	Course name: Diploma Project II						
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent						
Number of ECTS cr	edits: 3						
Recommended seme	ster/trimester of the cours	e: 2.					
Course level: II.							
Prerequisities:							
<b>Conditions for cours</b> regular consultaions development and abor regular consultations study of available res first results	<b>Se completion:</b> with diploma thesis super out the investigation sources connected with the d	ervisor about the progress of diploma project iploma thesis assignments					
Learning outcomes: Student understands	the methods of investigation	and he gains first results.					
Brief outline of the of Work on the diploma	ourse: project with regard to the a	ssignemnts of the diploma thesis					
Recommended litera Recommended litera Regulations for diplo template for diploma	ature: ture that is included in the d ma thesis preparation thesis	ploma thesis assignments					
Course language: Slovak							
Notes:							
Course assessment Total number of asse	ssed students: 2						
	abs	n					
100.0 0.0							
Provides:							
Date of last modifica	ntion: 15.02.2022						
Approved: prof. PhD Kollár, DrSc.	Pr. Oľga Orosová, CSc., prof	RNDr. Jozef Doboš, CSc., prof. RNDr. Peter					
University: P. J. Šafá	University: P. J. Šafárik University in Košice						
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Faculty: Faculty of S	Faculty: Faculty of Science						
Course ID: ÚFV/ DDP3/22	<b>Course name:</b> Diploma P	roject III					
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present						
Number of ECTS cr	edits: 3						
Recommended seme	ster/trimester of the cours	se: 3.					
Course level: II.							
Prerequisities:							
<b>Conditions for cours</b> regular consultations development and abo	e completion: s with diploma thesis sup out the project results	ervisor about the progress of diploma project					
Learning outcomes: Student has enough k part based on the pro-	mowledge to prepare a theo blem analysis and drawing	retical part of the diploma thesis and for practical conclusions.					
Brief outline of the c Work on the project w	ourse: with regard to the diploma t	hesis assignments					
Recommended literat Recommended literat Regulations for diplo template for diploma	<b>Recommended literature:</b> Recommended literature that is included in the diploma thesis assignments Regulations for diploma thesis preparation template for diploma thesis						
<b>Course language:</b> Slovak							
Notes:							
<b>Course assessment</b> Total number of asses	ssed students: 5						
	abs n						
	100.0 0.0						
Provides:	Provides:						
Date of last modifica	tion: 15.02.2022						
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CSc., pro	f. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter					

University: P. J	. Šafárik Univers	ity in Košice						
Faculty: Facult	y of Science							
Course ID: ÚF DPOU/22	Course ID: ÚFV/ Course name: Diploma Thesis and its Defence							
Course type, sc Course type: Recommended Per week: Per Course metho	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present							
Number of EC	TS credits: 14							
Recommended	semester/trimes	ster of the cours	e:					
Course level: II	[							
Prerequisities:								
<b>Conditions for</b> Preparation and Presentation of	<b>course completi</b> l submission of d diploma thesis re	on: iploma thesis in j esults and its defe	printed and ele ence in front of	ctronic form. examination boar	<sup>.</sup> d.			
Learning outco Knowledge and results in front	omes: l skills connected of experts.	with selected pro	oblem analysis	and presentation of	of diploma thesis			
Brief outline of Preparation and Printed version Presentation of Discussion on members.	<ul> <li>Brief outline of the course:</li> <li>Preparation and submission of diploma thesis to central registration system.</li> <li>Printed version for reviewing.</li> <li>Presentation of diploma thesis results and answers to the questions of reviewrs.</li> <li>Discussion on the content of diploma thesis and answers to the questions of examination board members.</li> </ul>							
Recommended	literature:							
Course languag	ge:							
Notes:								
Course assessment Total number of assessed students: 3								
A	В	С	D	E	FX			
66.67	33.33	0.0	0.0	0.0	0.0			
Provides:								
Date of last mo	Date of last modification: 15.02.2022							
Approved: prof Kollár, DrSc.	Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.							

University: P. J. Šafá	rik University in Ko	ošice			
Faculty: Faculty of S	cience				
Course ID: ÚMV/ DPP2a/22	ourse ID: ÚMV/ PP2a/22Course name: Diploma project I				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent				
Number of ECTS cr	edits: 1				
Recommended seme	ster/trimester of th	ne course: 1.			
Course level: II.					
Prerequisities:					
Conditions for cours	e completion:				
Learning outcomes:					
Brief outline of the c	ourse:				
Recommended litera	iture:				
Course language:					
Notes:					
Course assessment Total number of asses	ssed students: 12				
	abs	n			
100.0 0.0					
Provides:					
Date of last modifica	tion: 24.08.2022				
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, C	Sc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter			

University: P. J. Šafá	rik University in Koš	iice			
Faculty: Faculty of S	Faculty: Faculty of Science				
Course ID: ÚMV/ DPP2b/22	ourse ID: ÚMV/ Course name: Diploma project II PP2b/22				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent				
Number of ECTS cr	edits: 1				
Recommended seme	ster/trimester of the	e course: 2.			
Course level: II.					
Prerequisities:					
Conditions for cours	e completion:				
Learning outcomes:					
Brief outline of the c	ourse:				
Recommended litera	iture:				
Course language:					
Notes:					
Course assessment Total number of asses	Course assessment Total number of assessed students: 6				
	abs n				
	100.0 0.0				
Provides:					
Date of last modification: 24.08.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.					

University: P. J. Šafá	University: P. J. Šafárik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science					
Course ID: ÚMV/ DPP2c/22	ourse ID: ÚMV/ PP2c/22Course name: Diploma project III					
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent					
Number of ECTS cr	edits: 1					
Recommended seme	ster/trimester of th	le course: 3.				
Course level: 11.						
Prerequisities:						
Conditions for cours	e completion:					
Learning outcomes:						
Brief outline of the c	ourse:					
Recommended litera	ture:					
Course language:						
Notes:						
Course assessment Total number of asses	ssed students: 14					
	abs	n				
	100.0 0.0					
Provides:	Provides:					
Date of last modification: 24.08.2022						
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, C	Sc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter				

University: P. J. Šafá	rik University in K	ošice			
<b>Faculty:</b> Faculty of S	cience				
Course ID: ÚMV/ DPP2d/22	<b>ID:</b> ÚMV/ <b>Course name:</b> Diploma project IV 22				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent				
Number of ECTS cr	edits: 2				
Recommended seme	ster/trimester of t	he course: 4.			
Course level: II.					
Prerequisities:					
Conditions for cours	e completion:				
Learning outcomes:					
Brief outline of the c	ourse:				
Recommended litera	iture:				
Course language:					
Notes:					
Course assessment Total number of asses	ssed students: 13				
	abs	n			
	100.0 0.0				
Provides:					
Date of last modifica	tion: 24.08.2022				
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, C	Sc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter			

University: P. J. Šafá	rik University in Košice							
Faculty: Faculty of Science								
Course ID: KPPaPZ/PUDU/15	Course name: Drug Addiction Prevention in Educational Practice							
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 1 Per Course method: pre	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present							
Number of ECTS cr	edits: 4							
Recommended seme	ster/trimester of the course: 1., 3.							
Course level: II.								
Prerequisities:								
<b>Conditions for cours</b> 1st part of the semes semester evaluation: preparation (10p) and of the evaluation - w 90p and the final grad less: FX. Detailed inf of the subject will be	<b>Se completion:</b> ter evaluation: active participation in the training part (30p). 2nd part of the active participation in workshops (20p) 3rd part of the semester evaluation - l implementation (10p) of block activities (20p, minimum 11 points). 4th part ritten knowledge exam (20p, minimum 11 points). In total, students can get de is as follows: 90 - 82: A 81 - 73: B 72 - 66: C 65 - 59: D 58 - 54: E 53 and formation in the electronic bulletin board of the course in AIS2. The teaching realized by a combined method.							
Learning outcomes: The student understand and explain the detern use. Understands and non-substance addict The student is also a approaches in preven The student is able to in the field of drug u teacher and prevention	nds principals of research data based prevention of risk behavior, can describe minants of risk behavior as well as protective and risk factors for substance a dequately interprets the theory explaining the background of substance and ions. able to state and classify the types and forms of prevention, strategies and tion, can distinguish effective strategies from ineffective ones. apply the learned rules, procedures and competencies for the work of a teacher use prevention, as well as the acquired professional skills for the work of a on coordinator at school.							
Brief outline of the c Psychological, pedag prevention Prevention of substar Primary, secondary a Universal, selective a Effective substance p Preparation and imple	gogical-psychological, medical and legal-forensic aspects of substance use nee use based on risk and resilience nd tertiary prevention of substance use and indicated prevention of substance use prevention strategies based on research data ementation of components of effective substance use prevention programs							
Orosová, O. a kol. (2 internetu v školskej p	nure: 012). Základy prevencie užívania drog a problematického používania praxi. Košice: UPJŠ.							

Sloboda, Z., & Bukoski, J. (Eds.). (2006). Handbook of Drug Abuse Prevention: Theory, Science, and Practice. New York: Springer.

National and international scientific journals.

### **Course language:**

slovak

### Notes:

### Course assessment

Total number of assessed students: 419

А	В	С	D	Е	FX
50.84	41.29	7.16	0.72	0.0	0.0

**Provides:** prof. PhDr. Oľga Orosová, CSc., Mgr. Lucia Barbierik, PhD., Mgr. Viera Čurová, PhD., Mgr. Janka Liptáková

### Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science					
Course ID: ÚMV/ DGE/22	Course name: Dynamic geometry					
Course type, scope a Course type: Lectur Recommended cour Per week: 1 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 14 / 28 esent					
Number of ECTS cr	edits: 3					
Recommended seme	ster/trimester of the course: 3.					
Course level: II.						
Prerequisities:						
Conditions for course Master the concept of dynamic construction of geometric shapes commands of dynam problems, exploring a Rating: Test requiring the so geometric system - 10 Elaboration of a proj problems on a selected Classification scale: A: 91 % - 100 %, B: 8	<b>be completion:</b> of dynamic geometric systems and commands for creating and modifying its. To be able to use dynamic geometric systems in the study of the properties and the discovery of geometric patterns. To be able to effectively use the nic geometric systems for modeling various situations, solving geometric geometric transformations, exploring graphs of functions, data processing. Interpret of geometric problems using classical tools and the use of a dynamic 6 b. ect focused on the use of a dynamic geometric system in solving geometric ed topic - 16 b. 81 % - 90 %, C: 71 % - 80 %, D: 61 % - 70 %, E: 51 % - 60 %, FX: 0 % - 50 %.					
Learning outcomes: Skills to create dynam in solving geometric other types of tools invariant properties of quadrilaterals, conic transformations in so	nic constructions in a dynamic geometric system and to use commands usable problems. Knowledge and skills to effectively use geometric, algebraic and in experimenting with geometric objects and their attributes, in discovering of geometric shapes and geometric relationships between objects in triangles, sections and in basic types of spatial bodies. Be able to use geometric lving more complex constructing tasks.					
<b>Brief outline of the c</b> $1 - 4$ Constructions	ourse:					
quadrilaterals, circles theorem, Varignon's gravity of triangles an 5. Investigation of se	and investigation of properties and geometric relations in thangles, and their use in solving construction problems. Menelaos's theorem, Ceva's theorem, Ptolemy's theorem, cyclic and tangential quadrilaterals, center of and quadrilaterals. ts of points with a given property.					

6. Discovering and testing geometric relationships.7. Composing congruent transformations. Use of congruent and similar transformations and circular inversion for solving tasks.

8. Mathematical modeling, investigation of functional dependencies between quantities, solving problems to find extremes.

9.-10. Constructions of bodies, mutual positions of geometric shapes in space, sections of bodies, intersection of a line with a body.

#### **Recommended literature:**

Vaníček, J.: Počítačové kognitivní technologie ve výuce geometrie, Pedagogická fakulta Univerzity Karlovy, 2009

Stahl, G.: Dynamic-Geometry activities with GeoGebra for Virtual Math Teams, The Math Forum at Drexel University, 2012.

De Villiers, M., D.: Rethinking proof with the Geometer's Sketchpad. Key Curriculum Press, 2003.

### **Course language:**

Slovak

Notes:

#### **Course assessment**

Total number of assessed students: 64

А	В	С	D	Е	FX
56.25	23.44	15.63	4.69	0.0	0.0

Provides: doc. RNDr. Stanislav Lukáč, PhD.

**Date of last modification:** 19.04.2022

**Approved:** prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.

University: P. J	University: P. J. Šafárik University in Košice					
Faculty: Facult	Faculty: Faculty of Science					
Course ID: KPPaPZ/VP/09	Course na	Course name: Educational Counselling				
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of EC	TS credits: 2					
Recommended	semester/trimes	ster of the cours	se: 2.			
Course level: II	•					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessm Total number of	Course assessment Total number of assessed students: 233					
А	В	С	D	E	FX	
73.82	16.31	6.44	2.58	0.86	0.0	
Provides: PhDr. Anna Janovská, PhD.						
Date of last mo	Date of last modification: 24.06.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.						

University: P. J	University: P. J. Šafárik University in Košice					
Faculty: Facult	Faculty: Faculty of Science					
Course ID: KP ZSP/15	E/ <b>Course na</b>	Course name: Essentials of Special Education				
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of EC	<b>TS credits:</b> 2					
Recommended	semester/trimes	ster of the cours	e: 3.			
Course level: II	•					
Prerequisities:						
Conditions for	course completi	ion:				
Learning outco	omes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessm Total number of	ent f assessed studen	nts: 700				
А	В	С	D	Е	FX	
56.14	24.14	11.14	5.14	2.71	0.71	
Provides: PaedDr. Michal Novocký, PhD.						
Date of last mo	Date of last modification: 12.03.2024					
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.						

University: P. J.	. Šafárik Univers	ity in Košice					
Faculty: Faculty	y of Science						
Course ID: KP ZZP/12	: KPE/ Course name: Experiential Education						
Course type, sc Course type: I Recommended Per week: 1 / 2 Course metho	ope and the met Lecture / Practice l course-load (h 2 Per study peri d: present	thod: ours): od: 14 / 28					
Number of EC	I'S credits: 4						
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1., 3.				
Course level: II	•						
Prerequisities:							
Conditions for	course completi	on:					
Learning outco	mes:						
Brief outline of	the course:						
Recommended	literature:						
Course languag	ge:						
Notes:							
Course assessm Total number of	ent f assessed studen	ts: 410					
А	В	С	D	Е	FX		
44.63	37.8	13.66	3.66	0.24	0.0		
Provides: doc. PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petríková, PhD.							
Date of last modification: 12.03.2024							
<b>Approved:</b> prof Kollár, DrSc.	ř. PhDr. Oľga Or	osová, CSc., prof	E. RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter		

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚMV/ GEO2a/22	Course name: Geometry I
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 1 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 14 esent
Number of ECTS cr	edits: 3
Recommended seme	ster/trimester of the course: 2.
Course level: I., II.	
Prerequisities:	
<b>Conditions for cours</b> In the covered areas proofs of statements, given topics is requir at least 60%, E at l	of geometry, the ability to formulate definitions and statements, to present to explain individual steps in proofs and to solve selected problems related to red. Evaluation: A at least 90%, B at least 80%, C at least 70%, D east 50%, FX less than 50%
Learning outcomes: Acquired knowledge tools of planimetry, a homothety in the plan and their properties. area. A new look at c	about the axiom system of Euclidean geometry, about the validity of the basic bout sets of points of a given property, about congruence transformations and e, about important points, lines and circles in triangles and about quadrilaterals The ability to use the above knowledges and tools to solve problems on this lassical geometric results.
Brief outline of the c - (week 1-3) Hilbert's "complementary" ang - (week 4-5) Basic to law of cosines, extend - (week 6) Point sets - (week 6) Point sets - (week 7) Transform - (week 8-11) Points points of interest, the lines) - (week 12-13) Quad Brahmagupta's formu	<b>Sourse:</b> a axiom system (axioms, triangle congruence theorems, pairs of congruent or gles, basic proportionality theorem, triangle similarity theorems) ools of planimetry (Euclid's theorem, Pythagorean theorem, Thales' theorem, ded law of sines, central and inscribed angle theorem, area of a triangle) of the given property (bisectors, equidistants, Apollonius circle) nations (congruence transformations of the plane, homothety in the plane) and lines connected with a triangle (Menelaus's theorem, Ceva's theorem, e incircle and excircles, pedal triangles, Euler line, nine-point circle, Simson drangles (Varignon's parallelogram, cyclic quadrangles, Ptolemy's theorem, nla)
Recommended litera 1. D. Hilbert, Grundl 2. H.G. Forder, Found 3. H.S.M. Coxeter, S 4. R.A. Johnson, Adv 5. D.A. Brannan, M.I	agen der Geometrie, Teubner, 1968. dations of Euclidean geometry, Dover Publ., 1958. .L. Greitzer, Geometry revisited, MAA, 1967. vanced Euclidean geometry, Dover Publ., 2007. F. Esplen, J.J. Gray, Geometry, Cambridge Univ. Press, 2007.

<b>Course langua</b> Slovak	ge:				
Notes:	,			_	
<b>Course assessm</b> Total number o	nent of assessed studen	ts: 194			
А	В	С	D	Е	FX
19.07	19.07	29.38	11.34	16.49	4.64
Provides: RND	r. Igor Fabrici, D	r. rer. nat., univer	zitný docent		
Date of last mo	odification: 29.02	2.2024			
<b>Approved:</b> pro Kollár, DrSc.	f. PhDr. Ol'ga Ore	osová, CSc., prof	. RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter

University: P. J. Šafárik University in Košice
Faculty: Faculty of Science
Course ID: ÚMV/ GEO2b/10Course name: Geometry II
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 3 / 2 Per study period: 42 / 28 Course method: present
Number of ECTS credits: 6
Recommended semester/trimester of the course: 1.
Course level: II.
Prerequisities:
<b>Conditions for course completion:</b> In the covered areas of geometry, the ability to formulate definitions and statements, to present proofs of statements, to explain individual steps in proofs and to solve selected problems related to given topics is required. During the semester (continuous assessment) two tests take place, from which 50% of points can be obtained, and from the oral exam alike 50% can be obtained. Evaluation A at least 90%, B at least 80%, C at least 70%, D at least 60%, E at least 50%, FX less than 50%
Learning outcomes: Acquired knowledge of the properties of affine, isometric and similarity transformations understanding of important statements and methods, knowledge of the use of isometric and similarity transformations in construction and optimization problems and the ability to solve other problems in this area.
<ul> <li>Brief outline of the course:</li> <li>- (week 1-2) Quadric surfaces (circular and general quadric surfaces)</li> <li>- (week 3-7) Affine transformations (associated transformation, matrix representation, affinities fixed points and lines, pseudo-reflections)</li> <li>- (week 8-10) Isometric transformations (matrix representation, isometries, classification in the plane, composition of reflections)</li> <li>- (week 11-12) Similarity transformations (matrix representation, similarities, homothety composition of homotheties)</li> <li>- (week 13-14) Geometry of circles (the power of a point with respect to a circle, radical axis or two circles, pencils of circles)</li> </ul>
<ul> <li>Recommended literature:</li> <li>1. M. Sekanina et al, Geometry 2, SPN, 1988 (in slovak).</li> <li>2. O. Šedivý et al, Geometry 2, SPN, 1987 (in slovak).</li> <li>3. H.S.M. Coxeter, Introduction to geometry, Wiley, 1989.</li> <li>4. J.T. Smith, Methods of geometry, Wiley, 2000.</li> </ul>
Course language: Slovak

Notes:									
Course assessment									
Total number o	f assessed studen	ts: 149							
А	В	С	D	Е	FX				
16.78	16.11	24.83	16.78	20.13	5.37				
Provides: RND	r. Igor Fabrici, D	r. rer. nat., unive	rzitný docent, Mg	gr. Daniela Šabak	tová				
Date of last modification: 28.10.2021									
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.									

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: KPPaPZ/PsZ/15	Course name: Health Psychology
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent
Number of ECTS cro	edits: 2
Recommended seme	ster/trimester of the course: 3.
Course level: II.	
Prerequisities:	
<b>Conditions for cours</b> Active participation i	e completion: n seminars, preparation and presentation of seminar work, final evaluation
The aim of the course Psychology as well a of individuals and so psychology, will be f will learn to use the a	e is to provide students with the latest knowledge and background of Health s forms of its application in order to improve the mental and physical health ociety. The graduate of the course will understand the principles of health amiliar with the current social discourse on the topics covered. The student cquired knowledge in school practice.
<b>Brief outline of the c</b> 1. Health psychology 2. Mental health and 3. Physiological aspe 4. Stress. Coping, res 5. Psychosomatic disc 6. Social support and 7. Burnout syndrome 8. The meaning of lif 9. Health-related beha 10. Socio-economic i	ourse: . Definition of health. Bio-psycho-social model of health. quality of life, well being. cts of mental health, lifestyle ilience. eases, placebo. its importance for health. e, faith. avior and prevention. Risky behavior, excessive use of the Internet and screens. nequalities in health. Unemployment and health.
Recommended litera Křivohlavý, J.: Psych Kebza, V.: Psychosoc Křivohlavý, J.: Psych Sarafino, E.P.: Health Taylor, E.: Health Psy Vollrath M.E.: Handb	ture: ologie zdraví. Praha: Portál, 2001 iální determinanty zdraví. Praha: Academia, 2005 ologie nemoci. Praha : Grada, 2002 Psychology: Biopsychosocial Interactions, John Wiley & Sons, 2007 ychology. Singapore: McGraw-Hill, 2006 book of Personality and Health. Chichester: John Wiley & Sons, 2006
Course language:	
Notes:	

Course assessn Total number o	nent f assessed studen	ts: 118						
A B C D E FX								
100.0	100.0 0.0 0.0 0.0 0.0 0.0							
Provides: doc. Mgr. Mária Bačíková, PhD.								
Date of last modification: 22.06.2022								
Approved: prot Kollár, DrSc.	f. PhDr. Ol'ga Oro	osová, CSc., prof	RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter			

University: P. J. Šafa	árik University in Košice								
Faculty: Faculty of S	Faculty: Faculty of Science								
Course ID: KPPaPZ/UPN/17	Course name: Introduction into Psychology of Religion								
Course type, scope a Course type: Pract Recommended cou Per week: 2 Per stu Course method: pr	and the method: ice irse-load (hours): udy period: 28 resent								
Number of ECTS ci	redits: 2								
Recommended sem	ester/trimester of the course: 2.								
Course level: II.									
Prerequisities:									
<b>Conditions for cour</b> The assessment is badistance format. Up- found on the electron	<b>se completion:</b> ased on the interim evaluation. The subject will be taught in both present and to-date information concerning the subject for the given academic year can be nic board of the subject in the Academic information system of the UPJŠ.								
Learning outcomes: The student wil acqu of research and appl and evaluate this know orientation in the fie acquired knowledge	the a basic overview of the origin and current state of knowledge in the field ication the psychology of religion. He/she will be able to described, explaine, owlege. The student will be able to apply the acquired knowledge in the basic ld, and develop critical thinking and will be able to apply and integrate already from other (psychological) distributions								
<b>Brief outline of the</b> 1. History of psycho 2. Psychological per 3. Psychology of rel 4. Basic approaches 5. Different types of 6. Psychological vie 7. Spirituality versus 8. Coping in the con 9. Psychotherapy an	course: logy of religion in national and world context spective on religion and religious experience igion in an interdisciplinary context to psychological interpretation and selected views religious experience w of religion from a biodromal perspective s religiosity in a postmodern society text of religiosity d religion, pastoral psychology								
Recommended liter Eliade, M. (1994). P Eliade, M. (1995). E Freud, S. (1999). Nu Praha: Psychoanalyt Fromm, E. (2003). F Erikson, E. (1996). I Psychoanalytické na James, W. (1930). D Jung, C. G. (1993).	ature: osvátné a profánní. Praha: Česká křesťanská akademie. Dějiny náboženského myšlení 1. Praha: Oikoymenh. utkavá jednání a náboženské úkony. In Freud, S., Spisy z let 1906–1909. ické nakladatelství. Psychoanalýza a náboženství. Praha: Aurora Mladý muž Luther: studie psychoanalytická a historická. Praha: kladatelství. ruhy náboženské zkušenosti. Praha: Melantrich. Analytická psychologie: Její teorie a praxe. Praha: Academia.								

Křivohlavý, J. Pargament, K. Říčan, P. (2007) Říčan P. (2002) Stríženec, M. (2002)	(2000). Pastoráln (1997), Psycholog ). Psychologie ná , Psychologie nál 2001) Súčasná ps	í péče. Praha: Ol gy of religion an Iboženství a spir boženství, Portál ychológia nábož	liva Id coping, ituality. Praha: Po I, Praha, tenstva	ortál.				
Course langua	ge:							
Notes:								
<b>Course assessn</b> Total number o	nent f assessed studen	ts: 77						
A B C D E FX								
100.0 0.0 0.0 0.0 0.0 0.0								
Provides: Mgr. Jozef Benka, PhD.								

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.

University: P. J. Šafárik University in Košice						
Faculty: Faculty of S	cience					
<b>Course ID:</b> KPPaPZ/ZMPPV/15	<b>Course name:</b> Introduction to Research Methodoly in Education and Psychology					
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of ECTS credits: 4						
Recommended semester/trimester of the course: 2.						

Course level: II.

**Prerequisities:** KPPaPZ/PPgU/15 and KPE/PDU/15

**Conditions for course completion:** 

- active participation in seminars, presentation of assignments in groups, final exam

#### Learning outcomes:

The graduate of the course will gain information about the research methodology, will understand the basic methods of pedagogical and psychological research that can be used in the practice of the teacher. Within the seminars, students will develop professional skills through their own demonstration of a specific research method. The graduate of the course will be able to carry out simple scientific research, present the results of research and read the results of the latest research in the field of pedagogy and psychology.

#### Brief outline of the course:

Research in pedagogy and psychology. Scientific research, scientific thinking. Parts of a research project. Research planning. Topic selection, research problem formulation. Types of research plans. Hypothesis, variables, operationalization. Ethical issues of scientific research. Experiment (experiment problems, control of variables in the experiment). Experimental plans, quasi-experiment. Reliability and validity of research. Research sample, methods of sample selection. Data collection techniques - questionnaire, interview, sociometry, semantic differential, observation, tests. Introduction to qualitative methodology. Possibilities of quantitative data processing. How to write a scientific article, presentation, poster, qualification work. Interpretation of findings, integration of findings into context.

#### **Recommended literature:**

Bačíková, M., Janovská, A., Orosová, O. Základy metodológie pedagogicko-psychologického výskumu. 2.doplnené vydanie. Šafárik Press, 2019. dostupné online: https://unibook.upjs.sk/img/ cms/2019/FF/zaklady-metodologie-ped-psych-vyskumu-2-vyd-web.pdf

Gavora, P.: Úvod do pedagogického výskumu. Bratislava, UK 1999.

Švec, Š. a kol.: Metodológia vied o výchove. Bratislava, Iris 1998. Turek, I.: K základom pedagogického výskumu. Prešov, KPÚ 1991.

Ferjenčík, J.: Úvod do metodológie psychologického výskumu. Praha, Portál 2000. http://www.e-metodologia.fedu.uniba.sk/

### Course language:

Notes:									
Course assessment									
Total number o	i assessed studen	ts. 720	r	· · · · · · · · · · · · · · · · · · ·					
А	B C D E FX								
19.44	26.81	24.86	19.72	9.03	0.14				
Provides: doc. ]	Mgr. Mária Bačíl	ková, PhD., PhDı	: Anna Janovská	, PhD.	• •				
Date of last modification: 24.06.2022									
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.									

University: P. J	. Šafár	ik Univers	sity in Košice				
Faculty: Facult	y of So	cience					
Course ID: ÚM LTM2/22	IV/ Course name: Logic and set theory						
Course type, sc Course type: 1 Recommended Per week: 2/2 Course metho	ope an Lectur d cour 2 Per s d: pre	nd the me e / Practice rse-load (h study peri sent	thod: e ours): od: 28 / 28				
Number of EC	ГS cre	edits: 4					
Recommended	semes	ster/trime	ster of the cours	e: 1.			
Course level: II	•						
Prerequisities:							
<b>Conditions for</b> Exam	cours	e completi	ion:				
<b>Learning outco</b> To obtain a bas a proof.	mes: ic kno	wledge on	the mathematica	Il notion of an i	infinity. Analysis	of the notion of	
Set as a mather mappings. Finite and coun Sentential calcu predicate calcu Methods of pro	table s ilus, a lus, ex ofs in	l formular sets. Cardin n axiomat camples. A predicate o	ization of an infin nality of continuu ization. Complete Axiomatizations of calculus.	nity. Properties m. Elementary ness Theorem. of predicate cal	of the set of reals cardinal arithmeti Methods of proof culus and the not	<ul> <li>Relations and</li> <li>cs.</li> <li>S. Language of</li> <li>ion of a proof.</li> </ul>	
Recommended E. Mendelson.	litera Introdu	<b>ture:</b> uction to N	Aathematical Log	ic. van Nostran	d 1964.		
<b>Course langua</b> Slovak	ge:			-,			
Notes:							
<b>Course assessn</b> Total number o	<b>ent</b> f asses	sed studer	nts: 276				
А		В	C	D	Е	FX	
13.04		18.84	19.2	16.3	30.8	1.81	
Provides: RND	r. Jaro	slav Šupin	a, PhD., RNDr. A	dam Marton			
Date of last mo	difica	tion: 18.02	2.2022				
Approved: prof Kollár, DrSc.	PhD	r. Ol'ga Or	osová, CSc., prof	. RNDr. Jozef I	Doboš, CSc., prof.	RNDr. Peter	

Faculty: Faculty of ScCourse ID: ÚMV/DPU/22Course type, scope an Course type: Recommended course Per week: Per study Course method: press	ience Course na nd the met se-load (ho y period: sent dits: 14	me: Magister th hod: ours):	esis and its defer	ıse	
Course ID: ÚMV/ DPU/22 Course type, scope ar Course type: Recommended course Per week: Per study Course method: pres	Course na nd the met se-load (ho y period: sent dits: 14	me: Magister th hod: ours):	esis and its defer	nse	
Course type, scope an Course type: Recommended cours Per week: Per study Course method: pres	nd the met se-load (ho y period: sent dits: 14	hod: ours):			
	<b>dits:</b> 14				
Number of ECTS cre					
Recommended semes	ter/trimes	ter of the cours	e:		
Course level: II.					
Prerequisities:					
The diploma thesis is fraud and must meet 21/2021, which lays d Košice and its compon and in the process of t	the result of the criteria lown the ru ents. Fulfil hesis defer	on: of the student's or a of good resear ules for assessing Ilment of the crite use. Failure to do	wn work. It must ch practice defir g plagiarism at P eria is verified ma o so is reason for	t not show eleme ned in the Recto Pavol Jozef Šafár ninly in the proces disciplinary action	ents of academic r's Decision no. ik University in ss of supervision on.
The diploma thesis de field of study, acquisit profile of the graduate selected field problem of content, formal and 1/2011 on the basic re <b>Brief outline of the co</b>	monstrates tion of kno of the stud s. Student of ethical. Fu quirements	s mastery of exter owledge, skills an y program, as we demonstrates the orther details on t s of final theses a	ended theory and nd competencies ell as the ability to ability of indepe he diploma thesis and the Study Re	professional ter in accordance w apply them crea indent profession s are determined gulations of UPJ	minology of the with the declared tively in solving al work in terms by Directive no. IS in Košice.
<ol> <li>Elaboration of the d</li> <li>Presentation of the i</li> <li>Answering question</li> </ol>	liploma the results of t is related to	esis in accordanc he diploma thesi o the topic of the	e with the instruct s before the exam- e diploma thesis y	ctions of the supe nination commis within the discus	ervisor. sion. sion.
<b>Recommended literat</b> The recommended lite diploma thesis.	t <b>ure:</b> erature is d	etermined indivi	dually in accorda	ance with the top	vic of the
<b>Course language:</b> Slovak					
Notes:					
<b>Course assessment</b> Total number of asses	sed studen	ts: 10			
A	В	С	D	Е	FX
90.0	0.0	0.0	10.0	0.0	0.0

### **Provides:**

**Date of last modification:** 19.04.2022

Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚMV/ MZF/22Course name: Mathematical foundations of financial literacy							
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present							
Number of ECTS cr	edits: 2						

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

Course level: II.

Prerequisities:

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

Improving knowledge and skills from the use of standard methods in solving mathematical problems in the topics: sequences, infinite series, financial mathematics. Developing the ability to analyze and explain various problem-solving strategies.

Conditions for continuous evaluation:

1. Participation in teaching in accordance with the study rules and instructions of the teacher.

2. Active participation in the exercises.

3. Elaboration of two tests.

Conditions for successful completion of the course:

A grade of A requires at least 90%, a grade of B requires at least 80%, a grade of C requires at least 70%, a grade of D requires at least 60%, and a grade of E requires at least 50%.

#### Learning outcomes:

The student is able to explain the basic concepts and methods of solving mathematical problems selected from various areas of school mathematics. The student is able to apply the acquired knowledge in finding and using various strategies for solving problems. The student will get acquainted with typical and more demanding tasks from school mathematics and with specific knowledge gaps and misconceptions that occur in their solution in the teaching of mathematics in primary and secondary school. The student will learn to use different models in solving problems in financial mathematics, which will support the development of his/her financial literacy.

The student is able to assess whether the student's non-standard solution is correct or not, and can explain his decision.

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

Sequences, sequence properties, limit of a sequence, convergence and divergence of sequences. Arithmetic and geometric sequence and their use in solving problems.

Infinite series, convergence of infinite series, infinite geometric series.

Basic concepts, methods, models in financial mathematics: currency, exchange rate, insurance, taxes, interest, simple and compound interest, regular deposits and withdrawals, loan repayment, mortgages.

#### **Recommended literature:**

1. Kohanová, I., Slavičková, M.: Finančná matematika pre budúcich učiteľov matematiky.

Knižničné a edičné centrum FMFI UK, 2013.

- 2. Larson, L.C., Metódy riešenia matematických problémov, Bratislava, Alfa, 1990.
- 3. Lengyelfalusy, T., Kochol, M., Zábojníková, N.: Metódy riešenia matematických úloh 2.
- Žilinská univerzita v Žiline, 2009.
- 4. Učebnice a zbierky úloh z matematiky.

### **Course language:**

Slovak

Notes:

### Course assessment

Total number of assesse	ed students: 136
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А	В	С	D	Е	FX
35.29	16.91	23.53	13.97	8.82	1.47

Provides: doc. RNDr. Stanislav Lukáč, PhD.

### Date of last modification: 19.04.2022

**Approved:** prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚMV/ MRUc/22	Course name: Mathematical problem solving strategies III
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent
Number of ECTS cr	edits: 2
Recommended seme	ster/trimester of the course: 2.
Course level: II.	
Prerequisities:	
<b>Conditions for cours</b> Assessment is given semester and active p Classification scale: A: 91%-100%, B: 81	<ul> <li>be completion:</li> <li>on the basis of the results of written examinations carried out during the participation in exercises.</li> <li>%-90%, C: 71%-80%, D: 61%-70%, E: 51%-60%, FX: 0%-50%.</li> </ul>
Learning outcomes: Students become fam specific problems of 1. familiarise themsel forward arguments, 2. gain a deeper und interconnections, 3. be able to define an 4. know how to solv obtained results.	niliar with the tasks, methods of problem solving, solving strategies and with teaching mathematics at primary and secondary schools. The student will lves with mathematical culture, ways of thinking, self-expression and putting derstanding of the base terminology of real analysis, their properties and nd interpret key terms, prove their basic properties and relationships, we tasks focused on utilising the aforementioned concepts and interpret the
Brief outline of the c Basic knowledge of systems, Divisibility Working together wo	ourse: school mathematics, Euclid's algorithm, Diophantine equations, Number rules, Congruence classes of integers, Algebraic numbers, Motion problems, rd problems, Mixture Word Problems, Optimization word problems.
Recommended litera Hecht, T., Sklenáriko Hecht, T. a kol., Mate Bratislava 1999-2002 Krantz, S.G., Technic Larson, L.C., Metódy	nture: vá, Z., Metódy riešenia matematických úloh, Bratislava, SPN, 1992. ematika pre 14. ročník gymnázií a SOŠ, OrbisPictusIstropolitana, 2. ques of Problem Solving, AMS, 1997. v riešenia matematických problémov, Bratislava, Alfa, 1990.
<b>Course language:</b> Slovak	
Notes:	

Course assessm Total number o	nent f assessed studen	ts: 162				
А	В	С	D	Е	FX	
45.68	28.4	9.88	7.41	8.64	0.0	
Provides: prof. RNDr. Jozef Doboš, CSc.						
Date of last modification: 25.04.2022						
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.						

Faculty: Faculty of Science         Course ID: UMV/ MDM/22       Course name: Mathematics and didactics of mathematics         Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present       Recommended course-load (hours): Per week: Per study period: Course method: present         Number of ECTS credits: 2       Recommended semester/trimester of the course: Course level: II.       Prerequisities: UMV/DDMc/22         Conditions for course completion: Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.         Learning outcomes: Verification of acquired student competencies in accordance with the graduate profile.         Brief outline of the course: 1. Number sets 2. Sets and statements 3. Number theory 4. Powers, polynomials, fractional expressions 5. Equations and inequalities 6. Planimetry 7. Stereometry 8. Analytical geometry 9. Elementary functions, basic properties 10. Goniometry 11. Sequences and series 12. Combinatorics 13. Probability and statistics Within each topic, the student has to demonstrate: • An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics.         • An understanding of the important principles that must be considered when teaching a given topic. • The ability to apply knowledge in school mathematics, for example, to know what types of problems the pupil is expected to solve, what are the objectives of teaching, how the ideas about	University: P. J. Šafá	rik University in Košice
Course ID: ÚMV/ MDM/22         Course name: Mathematics and didactics of mathematics MDM/22           Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present         Recommended course-load (hours): Per week: Per study period: Course method: present           Number of ECTS credits: 2         Recommended semester/trimester of the course: Course level: II.         Prerequisities: ÚMV/DDMc/22           Confitions for course completion: Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.           Learning outcomes: Verification of acquired student competencies in accordance with the graduate profile.           Brief outline of the course: 1. Number sets 2. Sets and statements 3. Number theory 4. Powers, polynomials, fractional expressions 5. Equations and inequalities 6. Planimetry 7. Stereometry 8. Analytical geometry 9. Elementary functions, basic properties 10. Goniometry 11. Sequences and series 12. Combinatorics 13. Probability and statistics Within each topic, the student has to demonstrate: • An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics. • An understanding of the important principles that must be considered when teaching a given topic. • The ability to apply knowledge in school mathematics, for example, to know what types of problems the pupil is expected to solve, what are the objectives of teaching, how that types of problems the pupil is expected to solve, what are the objectives of teaching, how that types of	Faculty: Faculty of S	cience
Course type, scope and the method:         Course type:         Recommended course-load (hours):         Per week: Per study period:         Course method: present         Number of ECTS credits: 2         Recommended semester/trimester of the course:         Course level: II.         Prerequisities: ÚMV/DDMc/22         Conditions for course completion:         Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.         Learning outcomes:         Verification of acquired student competencies in accordance with the graduate profile.         Brief outline of the course:         1. Number sets         2. Sets and statements         3. Number theory         4. Powers, polynomials, fractional expressions         5. Equations and inequalities         6. Planimetry         7. Stereometry         8. Analytical geometry         9. Elementary functions, basic properties         10. Goniometry         11. Sequences and series         12. Combinatories         13. Probability and statistics         Within each topic, the student has to demonstrate:         • An understanding of t	Course ID: ÚMV/ MDM/22	Course name: Mathematics and didactics of mathematics
Number of ECTS credits: 2         Recommended semester/trimester of the course:         Course level: II.         Prerequisities: ÚMV/DDMc/22         Conditions for course completion:         Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.         Learning outcomes:         Verification of acquired student competencies in accordance with the graduate profile.         Brief outline of the course:         1. Number sets         2. Sets and statements         3. Number theory         4. Powers, polynomials, fractional expressions         5. Equations and inequalities         6. Planimetry         7. Stereometry         8. Analytical geometry         9. Elementary functions, basic properties         10. Goniometry         11. Sequences and series         12. Combinatorics         13. Probability and statistics         Within each topic, the student has to demonstrate:         • An understanding of the important principles that must be considered when teaching a given topic.         • An understanding of the important principles that must be considered when teaching a given topic.         • The ability to apply knowledge in school mathematics, f	Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent
Recommended semester/trimester of the course:         Course level: II.         Prerequisities: ÚMV/DDMc/22         Conditions for course completion:         Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.         Learning outcomes:         Verification of acquired student competencies in accordance with the graduate profile.         Brief outline of the course:         1. Number sets         2. Sets and statements         3. Number theory         4. Powers, polynomials, fractional expressions         5. Equations and inequalities         6. Planimetry         7. Stereometry         8. Analytical geometry         9. Elementary functions, basic properties         10. Goniometry         11. Sequences and series         12. Combinatorics         13. Probability and statistics         Within each topic, the student has to demonstrate:         • An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics.         • An understanding of the important principles that must be considered when teaching a given topic.         • The ability to apply knowledge in school mathematics, for example, to know what types of problems the pupi	Number of ECTS cr	edits: 2
Course level: II.         Prerequisities: ÚMV/DDMc/22         Conditions for course completion:         Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.         Learning outcomes:         Verification of acquired student competencies in accordance with the graduate profile.         Brief outline of the course:         1. Number sets         2. Sets and statements         3. Number theory         4. Powers, polynomials, fractional expressions         5. Equations and inequalities         6. Planimetry         7. Stercometry         8. Analytical geometry         9. Elementary functions, basic properties         10. Goniometry         11. Sequences and series         12. Combinatorics         13. Probability and statistics         Within each topic, the student has to demonstrate:         • An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics.         • An understanding of the important principles that must be considered when teaching a given topic.         • The ability to apply knowledge in school mathematics, for example, to know what types of problems the pupil is expected to solve, what are the objectives of teaching, how the ideas about	Recommended seme	ster/trimester of the course:
Prerequisities: ÚMV/DDMc/22         Conditions for course completion:         Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.         Learning outcomes:         Verification of acquired student competencies in accordance with the graduate profile.         Brief outline of the course:         1. Number sets         2. Sets and statements         3. Number theory         4. Powers, polynomials, fractional expressions         5. Equations and inequalities         6. Planimetry         7. Stereometry         8. Analytical geometry         9. Elementary functions, basic properties         10. Goniometry         11. Sequences and series         12. Combinatorics         13. Probability and statistics         Within each topic, the student has to demonstrate:         • An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics.         • An understanding of the important principles that must be considered when teaching a given topic.         • The ability to apply knowledge in school mathematics, for example, to know what types of problems the pupil is expected to solve, what are the objectives of teaching, how the ideas about problems the pupil is expected to solve.     <	Course level: II.	
<ul> <li>Conditions for course completion: Appropriate knowledge and competencies from the profile courses of specialisation Teaching mathematics, demonstrating the ability to synthesise the acquired knowledge and procedures and apply them to problems concerning mathematics teaching and learning.</li> <li>Learning outcomes: Verification of acquired student competencies in accordance with the graduate profile.</li> <li>Brief outline of the course: <ol> <li>Number sets</li> <li>Sets and statements</li> <li>Number theory</li> <li>Powers, polynomials, fractional expressions</li> <li>Equations and inequalities</li> <li>Planimetry</li> <li>Stereometry</li> <li>Analytical geometry</li> <li>Elementary functions, basic properties</li> <li>Goniometry</li> <li>Sequences and series</li> <li>Combinatorics</li> <li>Probability and statistics</li> <li>Within each topic, the student has to demonstrate:</li> <li>An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics.</li> <li>An understanding of the important principles that must be considered when teaching a given topic.</li> </ol> </li> </ul>	Prerequisities: ÚMV	/DDMc/22
Learning outcomes:         Verification of acquired student competencies in accordance with the graduate profile.         Brief outline of the course:         1. Number sets         2. Sets and statements         3. Number theory         4. Powers, polynomials, fractional expressions         5. Equations and inequalities         6. Planimetry         7. Stereometry         8. Analytical geometry         9. Elementary functions, basic properties         10. Goniometry         11. Sequences and series         12. Combinatorics         13. Probability and statistics         Within each topic, the student has to demonstrate:         • An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics.         • An understanding of the important principles that must be considered when teaching a given topic.         • The ability to apply knowledge in school mathematics, for example, to know what types of problems the pupil is expected to solve, what are the objectives of teaching, how the ideas about	Conditions for cours Appropriate knowled mathematics, demons apply them to problem	the completion: lge and competencies from the profile courses of specialisation Teaching strating the ability to synthesise the acquired knowledge and procedures and ms concerning mathematics teaching and learning.
<ul> <li>Brief outline of the course: <ol> <li>Number sets</li> <li>Sets and statements</li> <li>Number theory</li> <li>Powers, polynomials, fractional expressions</li> <li>Equations and inequalities</li> <li>Planimetry</li> <li>Stereometry</li> <li>Analytical geometry</li> <li>Elementary functions, basic properties</li> <li>Goniometry</li> <li>Sequences and series</li> <li>Combinatorics</li> <li>Probability and statistics</li> <li>Within each topic, the student has to demonstrate: <ul> <li>An overview of and understanding of the key mathematical ideas that underpin secondary school mathematics.</li> <li>An understanding of the important principles that must be considered when teaching a given topic.</li> <li>The ability to apply knowledge in school mathematics, for example, to know what types of problems the pupil is expected to solve, what are the objectives of teaching, how the ideas about</li> </ul> </li> </ol></li></ul>	<b>Learning outcomes:</b> Verification of acquir	red student competencies in accordance with the graduate profile.
basic concepts from the topic are created, and so on.  Recommended literature:	<ul> <li>Brief outline of the c</li> <li>1. Number sets</li> <li>2. Sets and statement</li> <li>3. Number theory</li> <li>4. Powers, polynomia</li> <li>5. Equations and inec</li> <li>6. Planimetry</li> <li>7. Stereometry</li> <li>8. Analytical geometries</li> <li>9. Elementary function</li> <li>10. Goniometry</li> <li>11. Sequences and se</li> <li>12. Combinatorics</li> <li>13. Probability and st</li> <li>Within each topic, the</li> <li>An overview of and mathematics.</li> <li>An understanding of</li> <li>The ability to applic problems the pupil is basic concepts from the second seco</li></ul>	ourse: s als, fractional expressions pualities  ry ons, basic properties ries atistics e student has to demonstrate: understanding of the key mathematical ideas that underpin secondary school f the important principles that must be considered when teaching a given topic. y knowledge in school mathematics, for example, to know what types of expected to solve, what are the objectives of teaching, how the ideas about the topic are created, and so on.  rture:

<b>Course langua</b> Slovak	ge:				
Notes:					
Course assessn Total number o	nent f assessed studen	ts: 15			
А	В	С	D	Е	FX
46.67	20.0	20.0	13.33	0.0	0.0
Provides:	·				
Date of last mo	dification: 16.08	.2022			
Approved: prot Kollár, DrSc.	f. PhDr. Ol'ga Oro	osová, CSc., pro	f. RNDr. Jozef Do	boš, CSc., prof.	RNDr. Peter

University: P. J. Šafá	rik University in Košice							
Faculty: Faculty of S	Faculty: Faculty of Science							
<b>Course ID:</b> ÚFV/ MDT/19	Course name: Modern Didactical Technology							
Course type, scope a Course type: Practio Recommended cou Per week: 2 Per stu Course method: pre	and the method: ce rse-load (hours): ady period: 28 esent							
Number of ECTS cr	edits: 2							
Recommended seme	sster/trimester of the course: 2.							
Course level: II.								
Prerequisities:								
Conditions for course Summary evaluation 1. Active participation participation. 2. Practical ongoing a assignment elaborate	<b>Se completion:</b> based on ongoing assessment: on at the seminars (in the contact or online form) with minimum 80% assignments (10) and their defense. At least 50% must be obtained from each d according to assessment criteria.							
Student graduated fro - recognize current av - to use all types of a - to design and realiz	om subject will be able: vailable digital tools and their parameters for educational activities, ctual digital tools in education of science or humanities, e educational activities by using the modern technologies.							
<b>Brief outline of the c</b> 00. Introduction - goo 01. Modern hybrid cl 02. Digital learning s 03. Cloud repositorie 04. Cloud editors for 05. Digital text (scan 06. Digital image and 07. Interactive E-voti 08. Digital collaborat 09. Virtual and digita 10. Education video 11. Smartphone and t 12. Teaching tools ar	als and didactic principles assroom in 21st century paces in 21st century s, services, modern web-browser notes, texts, spreadsheets and presentations , OCR, voice recognition, Kami pdf) d audio (digital recording and editing) ing and videoconference systems in education tive technologies (social e-reader, collaborative whiteboard) illy based experiments, digital databases (digital recording and editing) tablet in classic and blended education ad digital teacher's workspace							
Recommended litera 1. Kireš, M. et al.: M 2 . Redecker, C., & P Educators: DigComp	odern didactical technics in teacher practice (in Slovak), Košice: Elfa, 2010 Punie, Y. (2017). European Framework for the Digital Competence of Edu. Luxembourg: Publications Office of the European Union.							

3. C. R. Tucker, T. Wycoff, J. T. Green, Blended Learning in Action: A Practical Guide Toward Sustainable Change. Thousand Oaks: Corwin Press, 2016.

4. D. Bannister, Guidelines on Exploring and Adapting: LEARNING SPACES IN SCHOOLS. Brussels: European Schoolnet, 2017.

5. current information from web sites related to didactical technologies,

catalogues of teaching tools,

current articles about modern trends in science and humanities education.

### Course language:

Slovak, English

### Notes:

### Course assessment

Total number of assessed students: 99

А	В	С	D	Е	FX
53.54	29.29	12.12	3.03	2.02	0.0

Provides: doc. RNDr. Jozef Hanč, PhD.

**Date of last modification:** 07.07.2022

**Approved:** prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.

University: P. J. Safarik University in Kosice							
Faculty: Faculty of S	cience						
<b>Course ID:</b> ÚFV/ MFDF/15	Course name: Modern Physics from Didactics Point of View						
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 1 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 14 esent						
Number of ECTS cr	edits: 3						
Recommended seme	ster/trimester of the course: 1., 3.						
Course level: II.							
Prerequisities:							
Conditions for course Summary evaluation 1. Practical ongoing a 3. Active participation absences allowed) and	<b>Se completion:</b> based on ongoing assessment: assignments (at least 50% needed) on during face-to-face contact learning in classical or virtual classroom (3 d during online learning (no absence, uploading all ongoing assignments)						
Learning outcomes: Student should 1. Achieve better co contemprorary mode (Emphasis is not on a of Physics Education elementary algebra an 2. Get physical intuit	onceptual understanding and an integrated view on fundamental ideas of ern physics, which every future physicist and physics teacher should have. Ibstract mathematical methods, but on using most recent knowledge and tools Research - computer modeling of physical phenomena and employing only nd calculus.) ion and experience dealing with practical applications of modern physics.						
Brief outline of the c 0105. Fundamental diagram, principle of 0609. Fundamental momenergy, metrics, 1013. Fundamental of histories, rules for diagrams; practical ap	<b>ourse:</b> ideas of modern mechanics: scales, symmetry, event, worldlline, spacetime 'least action, conservation laws; practical applications. ideas of relativity: principle of relativity, space-time interval, conservation of principle of maximal aging; practical applications. ideas of quantum mechanics: probability amplitude, principle of democracy amplitudes, propagator, Schrödinger's equation, stationary state, Feynman's pplications.						
Recommended litera 1. Moore, T. A, Six Id Boston, 2017 2. Feynman, R.P., QE Princeton, 1985 3. Hey, A., Walters, F 4. Taylor, E. F, Whee W.H. Freeman and C	Ature: deas That Shaped Physics - Unit C, Unit Q, Unit R, 3trd ed., Mc Graw Hill, ED - The Strange theory of Light and Matter, Princeton University Press, P., New Quantum Universe, Cambridge University Press, 2003 ler, J. A., Space-time Physics-Introduction to Special Relativity, 2nd ed., ompany, New York, 1992						

5. Taylor, Wheeler, Bertschinger, Exploring Black Holes - Introduction to General relativity, 2nd ed., 2018, https://archive.org/details/exploringblackholes

6. Thorne, K. S., Black Holes and Time Warps, W.W. Norton, New York, 1995

7. Relevant resources from recent journal literature (American Journal of Physics, European Journal of Physics, Scientific American...)

<b>Course languag</b> Slovak	ge:				
Notes:					
Course assessm Total number o	<b>1ent</b> f assessed studen	ts: 5			
А	В	С	D	Е	FX
40.0	40.0	20.0	0.0	0.0	0.0
Provides: doc.	RNDr. Jozef Han	č, PhD.			
Date of last mo	dification: 27.01	.2022			
Approved: prof Kollár, DrSc.	f. PhDr. Ol'ga Oro	osová, CSc., prof	. RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter
University: P. J	. Šafárik Univers	ity in Košice			
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Faculty: Facult	y of Science				
Course ID: KP PDK/17	E/ Course na	ame: Pedagogica	l Communicatio	'n	
Course type, sc Course type: 1 Recommended Per week: 2 P Course metho	ope and the me Practice d course-load (h er study period: d: present	thod: ours): 28			
Number of EC	TS credits: 2				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1.		
Course level: II	•				
Prerequisities:					
Conditions for	course completi	on:			
Learning outco	omes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	ge:				
Notes:					
Course assessm Total number of	nent f assessed studen	ıts: 179			
А	В	С	D	Е	FX
75.98	22.35	1.68	0.0	0.0	0.0
Provides: Mgr.	Katarína Petríko	vá, PhD.		<u> </u>	•
Date of last mo	dification: 12.03	3.2024			
Approved: prof Kollár, DrSc.	f. PhDr. Ol'ga Or	osová, CSc., prof	. RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter

University: P. J	. Šafárik Univers	ity in Košice			
Faculty: Facult	y of Science				
Course ID: KP PDD/17	E/ Course na	ame: Pedagogica	l Diagnostics		
Course type, sc Course type: 1 Recommended Per week: 2 P Course metho	ope and the met Practice d course-load (h er study period: d: present	thod: ours): 28			
Number of EC	TS credits: 2				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 2.		
Course level: II	•				
Prerequisities:					
<b>Conditions for</b>	course completi	on:			
Learning outco	omes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	ge:				
Notes:					
Course assessm Total number of	nent f assessed studen	ts: 86			
А	В	С	D	Е	FX
83.72	11.63	4.65	0.0	0.0	0.0
Provides: Mgr.	Beáta Sakalová	<u>.</u>	•	·	
Date of last mo	dification: 12.03	3.2024			
Approved: prof Kollár, DrSc.	f. PhDr. Ol'ga Oro	osová, CSc., prot	f. RNDr. Jozef D	oboš, CSc., prof.	RNDr. Peter

Dytrtová, R., Krhutová, M. Učitel. Příprava na profesi. Praha: Grada, 2009. Kalhous, Z. – Obst, O. 2002. Školní didaktika. Praha: Portál, 2002. Petlák, E.: Kapitoly zo súčasnej didaktiky. Bratislava: IRIS, 2005. Prucha, J.: Moderní pedagogika. Praha: Portál, 2012. Turek, I.: Didaktika. Bratislava: Wolters Kluwer, 2014. Vališová, A., Kasíková, H.: Pedagogika pro učitele. Praha: Grada, 2010. Zormanová, L.: Obecná didaktika. Praha: Grada, 2014.

## **Course language:**

Notes:

## Course assessment

Total number of assessed students: 10

А	В	С	D	Е	FX
10.0	70.0	10.0	10.0	0.0	0.0

**Provides:** 

Date of last modification: 12.03.2024

University: P. J. Šaf	árik University in Košice	
Faculty: Faculty of	Science	
<b>Course ID:</b> KPE/ PPD/22	Course name: Pedagogy and Psychology	
Course type, scope Course type: Recommended co Per week: Per stu Course method: p	and the method: urse-load (hours): dy period: resent	
Number of ECTS c	predits: 2	
Recommended sem	ester/trimester of the course:	

Course level: II.

**Prerequisities:** KPE/PDU/15 and KPPaPZ/PPgU/15

**Conditions for course completion:** 

Obtaining the required number of credits in the prescribed composition by the study plan.

#### Learning outcomes:

The student is able to demonstrate the acquired competencies in accordance with the profile of the graduate.

#### Brief outline of the course:

Pedagogy: 1. Pedagogy, basic pedagogical categories, system of pedagogical scientific disciplines. 2. Education, pages and functions of education, educational process, self-education.3. Factors of education, educated individual, pedagogue, pedagogical profession, professional competencies.4. School education, family education. 5. Educational goals, taxonomy, requirements, classification of educational goals.6. Methods of education. 7. Pedagogical principles. 8. School system of the Slovak Republic. 9. Didactics, basic questions of didactics, current starting points of didactics. 10. Objectives of the teaching process, the teacher's work with the objectives of teaching.11. Content of education, basic curriculum, extension curriculum, elements and components of curriculum. 12. Assessment in school education, types, functions and criteria of assessment.13. Pedagogical control, methods and forms of pedagogical control.14. Teacher's work planning, written preparation of the teacher for teaching.15. Teaching process, stages of the teaching process and their didactic functions.16. Organizational forms of teaching, lesson, stages, types of lessons.17. Teaching methods, classification, functions, selection of teaching methods. 18. Didactic principles of the teaching process. 19. Basic pedagogical documents, textbook, functions and structural components of the textbook.20. Current concepts of the teaching process.

Psychology: 1.Psychology as a science, goals and subject of psychology in terms of influential psychological directions.2.Pedagogical psychology in teacher training, its subject, function.3.Psychology in school practice: professional forms of control and assistance, psychological examination, counseling process. Crisis intervention. Code of ethics.4.Psychology in school practice: approaches and models of prevention, prevention spectrum, protective and risk factors of risk behavior of schoolchildren in the context of the theory of triadic influence.5.Psychology in school practice: effective strategies for prevention of substance use.6.Psychology of education from the point of view of psychodynamic approach (Psychoanalysis and Individual Psychology) .7.Psychology of education from the point of

view of humanistic psychology.8.Psychology of education from the point of view of cognitive psychology.9.Psychology of learning and types of learning supplemented by examples from school practice. / success in the context of individual theories of cognitive development.11. Nutritional peculiarities, school non-success / intelligence in terms of intelligence.12. Memory and developmental peculiarities, school non-success 13. Attention and developmental peculiarities, school non / success peculiarities of individual types of family, educational styles.15.Social relations at school, me modes of cognition of interaction U and Ž. Psychosocial climate of school class and school, methods of cognition, sociometry.16.Social influence: presence of others, interpersonal influences and meaningful understanding of social influence in teacher's work.17.Teacher as a professional, his professional ability, teaching style, attitudes towards students, expectations towards students, coping with stress, burnout syndrome.18.Students: gifted and talented, school failure, non-thriving pupils and failing pupils, pupils' self-efficacy.19. Types of research plans and their creation (setting goals, hypotheses, variables, selection of research sample) in the context of pedagogical-psychological research.20. Selected methods of pedagogicalpsychological research - questionnaire, interview, observation and possibilities of their use in school practice.

## **Recommended literature:**

Pedagogika:

Čapek, R.: Moderní didaktika. Praha: Grada, 2016.

Dytrtová, R., Krhutová, M. Učitel. Příprava na profesi. Praha: Grada, 2009.

Kalhous, Z. – Obst, O. 2002. Školní didaktika. Praha: Portál, 2002.

Petlák, E.: Kapitoly zo súčasnej didaktiky. Bratislava: IRIS, 2005.

Prucha, J.: Moderní pedagogika. Praha: Portál, 2012.

Turek, I.: Didaktika. Bratislava: Wolters Kluwer, 2014.

Vališová, A., Kasíková, H.: Pedagogika pro učitele. Praha: Grada, 2010.

Zormanová, L.: Obecná didaktika. Praha: Grada, 2014.

Psychológia:

Mareš, J.: Pedagogická psychologie. Praha : Grada 2013.

Mareš, J., & ČÁP, J.: Psychologie pro učitele. Praha: Portál, 2001.

Džuka, J.: Základy pedagogickej psychológie. Prešov: UK 2003.

Orosová, O. a kol: Psychológia a pedagogická psychológia 1. Košice: UPJŠ, 2005.

Orosová, O. a kol.: Základy prevencie užívania drog a problematického používania internetu v školskej praxi. Košice: UPJŠ 2012.

Bačíková, M., Janovská, A. (2019). Základy metodológie pedagogicko-psychologického

výskumu. Sprievodca pre študentov učiteľstva. 2. rozšírené vydanie. Šafárik press, Košice.

Gavora, P. a kol. (2010). Elektronická učebnica pedagogického výskumu. Bratislava: Univerzita Komenského, 2010. dostupné online na www. e-metodologia. fedu. uniba. sk.

Vágnerová, M.: Základy psychológie. Praha : Karolinum 2005.

Vágnerová, M.: Vývojová psychológie. Praha : Karolinum 2005.

Vágnerová, M.: Škoní podadenská psychologie pro pedagogy. Praha : Karolinum 2005. Výrost,

J., Slaměník, I.: Sociální psychologie. Praha : Grada 2008.

Výrost, J., Salměník, I.: Aplikovaná sociální psychológie I. Praha: Portál 1998.

Strana: 2

Fontana, D. : Psychologie ve školní praxi. Praha: Portál 1997.

Zelina, M.: Stratégie a metódy rozvoja osobnosti. Bratislava, Iris: 1996.

Křivohlavý, J.: Pozitívni psychologie. Praha: Portál 2004.

Křivohlavý, J.: Psychologie zdraví. Praha: Portál 2003.

## Course language:

Notes:								
<b>Course assess</b> Total number of	<b>nent</b> of assessed studen	ts: 69						
A B C D E FX								
18.84	34.78	30.43	14.49	1.45	0.0			
Provides:								
Date of last mo	odification: 12.03	3.2024						
Approved: pro Kollár, DrSc.	f. PhDr. Ol'ga Or	osová, CSc., prot	f. RNDr. Jozef Do	oboš, CSc., prof.	RNDr. Peter			

Faculty: Faculty of Science         Course ID: ÚFV/ FYU/22       Course name: Physical Problems         Course type, scope and the method: Course type: Lecture / Practice       Recommended course-load (hours): Per week: 1 / 2 Per study period: 14 / 28         Course method: present       Number of ECTS credits: 3         Recommended semester/trimester of the course: 1.       Course level: II.         Prerequisities:       Conditions for course completion: On- line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p         obtained problem 10 p       own problems 10 p         own problems 10 p       oral examination 40 p         Final: A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0       Learning outcomes:         Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Course ID: ÚFV/ FYU/22       Course name: Physical Problems         Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 2 Per study period: 14 / 28 Course method: present         Number of ECTS credits: 3         Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Con-line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p obtained problem 10 p own problems 10 p oral examination 40 p Final: A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0         Learning outcomes: Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 2 Per study period: 14 / 28 Course method: present Number of ECTS credits: 3 Recommended semester/trimester of the course: 1. Course level: II. Prerequisities: Conditions for course completion: On- line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p obtained problem 10 p own problems 10 p oral examination 40 p Final: A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0 Learning outcomes: Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Number of ECTS credits: 3         Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         On- line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p         obtained problem 10 p         own problems 10 p         oral examination 40 p         Final:         A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0         Learning outcomes:         Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         On- line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p         obtained problem 10 p         own problems 10 p         oral examination 40 p         Final:         A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0         Learning outcomes:         Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Course level: II. Prerequisities: Conditions for course completion: On- line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p obtained problem 10 p own problems 10 p oral examination 40 p Final: A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0 Learning outcomes: Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Prerequisities: Conditions for course completion: On- line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p obtained problem 10 p own problems 10 p oral examination 40 p Final: A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0 Learning outcomes: Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Conditions for course completion: On- line set of problems for self solving is avialable for students. One task is define for each seminar for testing of student preparation. Production and presentation of three own problems is necessary problem solving 40 p obtained problem 10 p own problems 10 p oral examination 40 p Final: A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0 <b>Learning outcomes:</b> Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0 Learning outcomes: Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Learning outcomes: Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Clasical problems are studied in more details from different pont of view (students knowledge anmd skills, technologies, motivation, computer modelling and measuremets).
Brief outline of the course: Methods of problem solving are presented and trained. The sets of typical problems are analysed. Uding of modelling and real experiments is discussed.
<ul> <li>Recommended literature:</li> <li>1.Baláž, P. : Zbierka úloh z fyziky, SPN Bratislava, 1971</li> <li>2.Bartuška,K: Postup při řešení fyzikálních úloh, Sbírka řešených úloh z fyziky pro střední školy I, Praha, Prometheus, 1997, s. 5-10.</li> <li>3.Halpern, A.: 3000 solved problems in Physics, McGraw-Hill, Inc., USA, 1988</li> <li>4.Janovič,J., Koubek,V. Pecen,I.: Vybrané kapitoly z didaktiky fyziky. Bratislava, UK, 1999, 5.Jurčová, M., Dohňanská, J., Pišút, J., Velmovská, K.: Didaktika fyziky – rozvíjanie tvorivosti žiakov a študentov. Bratislava, UK, 2001,</li> <li>6.Kružík, M.: Sbírka úloh z fyziky pro žáky strědních škol, SPN, Praha, 1984</li> <li>7.Lindner, H.: Riešené úlohy z fyziky, Alfa, Bratislava, 1973</li> <li>8.Linhart, J. (1976): In: Volf, I.: Metodika řešení úloh ve výuce fyziky na základní škole. Hradec Králové, MAFY, 1998,</li> </ul>
Dago: 90

10. Scholtz, E., Kireš, M.: Fyzika – kinematika pre gymnázia s osemročným štúdiom. Bratislava, SPN, 2001,

11. Šedivý, P., Volf, I.: Dopravní kinematika a grafy. Hradec Králové, MAFY, 1998.

12.Volf,I. (1975): In: Bednařík, M., Lepil, O.: Netradiční typy fyzikálních úloh. Praha, PROMETHEUS, 1995,

13.Volf,I.: Jak řešit úlohy fyzikální olympiády, XXIII. Ročník soutěze fyzikální olympiády ve školním roce 1981/82, Praha, SPN, 1981,

14. Volf,I.: Metodika řešení úloh ve výuce fyziky na základní škole. Hradec Králové, MAFY, 1998.

15.Halpern, A.: 3000 solved problems in Physics, McGraw-Hill, Inc., USA, 1988

## **Course language:**

Slovak, English

Notes:

## **Course assessment**

Total number of assessed students: 12

А	В	С	D	Е	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Marián Kireš, PhD.

**Date of last modification:** 15.02.2022

Faculty: Faculty of Science         Course ID: ÚFV/       Course name: Physics and Didactics of Physics         MSSU/22       Course type, scope and the method:       Course type, scope and the method:
Course ID: ÚFV/ MSSU/22Course name: Physics and Didactics of PhysicsCourse 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
Number of ECTS credits: 2
Recommended semester/trimester of the course:
Course level: II.
<b>Prerequisities:</b> ÚFV/DF1/22 and ÚFV/FKS/22 and ÚFV/DF2/22 and ÚFV/ASFU/22
<b>Conditions for course completion:</b> The graduate has knowledge of physics in wider context. He is able to implement and apply knowledge of physics into education. He is able to apply knowledge of theory of education to selected physical content.
Learning outcomes: Competencies in accordance with the graduate profile.
Brief outline of the course: The graduate has knowledge of physics in wider context. He is able to implement and apply knowledge of physics content into education. He is able to apply knowledge of theory of education to selected physical content. Physics: Selected problems of Solid state physics, Subnuclear physics and Astrophysics. Didactics of physics: State educational curriculum ISCED 2,3-Physics. Development of scientific literacy. Physical experiment. Active learning, inquiry-based education in physics. Formative and summative assessment. Talented students and informal education. Analysis of lower and upper secondary teaching units.
Recommended literature:
Course language: Slovak
Notes:
Course assessment Total number of assessed students: 6
A B C D E FX
33.33 33.33 16.67 0.0 16.67 0.0
Provides:
Date of last modification: 15.02.2022

University: P. J. Šafárik University in Košice						
Faculty: Faculty of Science						
Ourse ID:Course name: Problem and Aggressive Behaviour of Pupils. Etiology, Prevention and Intervention.PaPZ/PASZ/17Prevention and Intervention.						
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of ECTS credits: 2						
Recommended semester/trimester of the course: 2.						
Course level: II.						
Prerequisities:						
Conditions for course completion:						
Learning outcomes:						
General principles of mental development as a basis for recognizing mental disorders in children and adolescents. Etiology of mental disorders and developmental disorders in children and adolescents. Definition of aggressive behavior. Concepts of aggression vs. aggressiveness. Theoretical approaches to aggression. Causes and factors of aggressive behavior. Violence at school and in the family. Bullying. Psychology of problem students. Problems resulting from disturbed behavior. Problems arising from group relationships. Adolescent lifestyle issues. Problems resulting from impaired emotional experience. Solving problematic and aggressive behavior in the school environment. School classroom management, group preventive and intervention work with the classroom. Crisis intervention. Work with parents of problem students. Principles of interviewing a parent. Cooperation with other experts. Prevention of aggressive and problematic behavior at school. Classroom and school climate, school prevention programs. Viac o tomto zdrojovom texteNa získanie d'alších informácií o preklade sa vyžaduje zdrojový text Odoslať spätnú väzbu Bočné panely						
Recommended literature:						
Course language:						
Notes:						
Course assessment Total number of assessed students: 121						
A B C D E FX						
79.34 14.88 5.79 0.0 0.0 0.0						
Provides: PhDr. Anna Janovská, PhD.						
Date of last modification: 24.06.2022						

	COURSE INFORMATION LETTER
University: P. J. Šafán	rik University in Košice
Faculty: Faculty of So	cience
Course ID: KPPaPZ/KPE/ EPU/15	Course name: Professional Ethics for Teachers and School Counsellors
Course type, scope an Course type: Practic Recommended cour Per week: 2 Per stue Course method: pre	nd the method: e rse-load (hours): dy period: 28 sent
Number of ECTS cre	edits: 2
Recommended semes	ster/trimester of the course: 2., 4.
Course level: II.	
Prerequisities:	
1. Active participation Preparation (descripti during the semester, t 77 - 86, C 69 - 76, D 6 of the course in AIS2	n in seminars (max. 1 absence) - 30p, 2. Preparation for the seminar - 40p, 3. on and analysis) of the moral dilemma - 30p. By summing the points obtained the student obtains the final evaluation according to the scale: A 87 - 100, B 51 - 68, E 56 - 60, FX 55 and less. Detailed information in the electronic board . The teaching of the subject will be realized by a combined method.
Learning outcomes: The student will und counselor as one of the the ethical and moral in (including the formula the function of the ed and solve practical me professional skills of context thanks to the	lerstand the principles of teacher ethics and the ethics of the educational the branch types of professional ethics. The student can theoretically reflect on issues of the teaching profession and the function of the educational counselor ation of moral values, principles and standards of the teaching profession and ducational counselor in the form of codes of ethics). He is able to analyze noral problems in pedagogical practice, which supports the development of students. The student is able to critically evaluate situations with a moral opportunity to discuss moral and ethical issues in an open way.
Brief outline of the co Moral emotions (theo their manifestations) Development of mora (Piaget, Kohlberg, Gi Moral behavior (from intelligence in the wo Possibilities of exar conformity, obedience judgment) Morality and professional of ethics Professional ethics of of teacher ethics) and	burse: bries of emotion, the center of emotions in the brain, types of emotions and al reasoning, cognitive approaches to moral reasoning and their comparison lligan, Eisenberg, Selman, Lind), the point of view of learning theories) and moral (vs. social and emotional) rk of a teacher nining moral behavior and judgment (socio-psychological research of e, aggression and psychodiagnostic approaches to the determination of moral ional ethics in general (ethical principles in helping professions) and codes the teacher and educational counselor (terminology, concepts, main principles teacher ethics codes

Moral dilemmas and ways of solving them, MD of teaching practice

Possibilities of influencing and stimulating moral judgment, use of moral dilemma in education Cheating and other unethical manifestations in the school environment, ethics and etiquette of final exams

## **Recommended literature:**

Ráczová, Babinčák, P. Základy psychológie morálky. Košice : Equilibria, 2009. - 130 s. ISBN 9788070977866 (brož.).

Gluchmanová, M. K niektorým terminologickým otázkam učiteľskej etiky. Pedagogická orientace 2007, č. 2, s. 11–25. ISSN 1211-4669.

Malankievičová, S. Profesijná etika: FF PU. 2008.

Miezgová J., Vargová, D. Etika. SPN Mladé letá 2007.

Remišová A. Dejiny etického myslela v Európe a USA. Bratislava, Kalligram 2008.

Zelina, M. Teória výchovy alebo hľadanie dobra. Bratislava SPN 2010.

Gluchmanová, M. Uplatnenie princípov a hodnôt etiky sociálnych dôsledkov v učiteľskej etike. Prešov: FF PU,2009. 222 s. ISBN 978-80-555-0042-3

Campbell, E. The Ethical Teacher. Berkshire (England): Open University Press, 2003. 178 s. ISBN 03-3521-219-0.

## Course language:

slovak

## Notes:

## Course assessment

Total number of assessed students: 496

А	В	С	D	Е	FX
96.98	2.62	0.4	0.0	0.0	0.0

Provides: Mgr. Lucia Barbierik, PhD.

Date of last modification: 24.06.2022

University: P. J. Šafán	rik University in Košice
Faculty: Faculty of S	cience
Course ID: KPPaPZ/PPgU/15	Course name: Psychology and Educational Psychology
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	nd the method: e / Practice rse-load (hours): study period: 28 / 28 esent
Number of ECTS cro	edits: 5
Recommended seme	ster/trimester of the course: 1.
Course level: II.	
Prerequisities:	
Conditions for cours Combined method. Assessment Maximum Exam entry criteria: A semester. Continuous assessme Final evaluation: A 87 – 100, B 77 – 80 Electronic board of th	e completion: m 50 points during the semester (Three assignments). Active participation in exercises and at least 35 points obtained during the nt (50%) and written examination (50%) / 10 questions. 6, C 69 – 76, D 61 – 68, E 56 – 60 ne course AIS2 - more information and news.
Learning outcomes: Students will be able Students will be able psychological concep Students will be able Students will be able behaviour in response Students will be able to bring an all-round desired data-based m disadvantages.	to show understanding of the human behaviour in educational situations. le to describe, explain and justify possible teachers' decisions by using ts, principles and theories. to apply the psychological findings in the field of education. to explain how adolescents learn and retain new information, to explain their e to educational environment. e to explain the desired data-based modification of adolescents' behaviour d development of his personality and school performance, to explain the odification of the behaviour of adolescents with educational problems, with
Brief outline of the con- Introduction: The com- especially pedagogica Teaching is realized seminars using interact respect, support of inter- Syllabus: The subject help in school practic Implementation of pro- contemporary psychol	ourse: ttent of the course is based on current knowledge of psychological disciplines, al and school psychology. by a combination of lectures with engaging narrative interpretation and ctive, experiential methods, discussion and open communication with mutual dependence, activity and motivation of students. and goals of psychology and educational psychology. Professional forms of e. psychological concepts of personality into school practice (Classical and panalytic theory, Individual psychology. Humanistic psychology. Concept of

creative-humanistic education; Cognitivism and Theory of personal constructs). Social psychology of school and family. Learning and teaching. Health and disease; risk / protective factors with healthy related risk behavior. Psychology of students with behavioral and learning problems. Psychology of students with psychosocial, socio-cultural, health disadvantages. Psychological examination. Consulting process. Crisis intervention. Programs for prevention of risky behavior of schoolchildren.

## **Recommended literature:**

Mareš, J.: Pedagogická psychologie. Praha : Grada 2013. Mareš, J., & ČÁP, J.: Psychologie pro učitele. Praha: Portál, 2001. Džuka, J.: Základy pedagogickej psychológie. Prešov: UK 2003. Orosová, O. a kol: Psychológia a pedagogická psychológia 1. Košice: UPJŠ, 2005. Orosová, O. a kol.: Základy prevencie užívania drog a problematického používania internetu v školskej praxi. Košice: UPJŠ 2012. Vágnerová, M.: Základy psychológie. Praha : Karolinum 2005. Vágnerová, M.: Vývojová psychológie. Praha : Karolinum 2005. Vágnerová, M.: Škoní podadenská psychologie pro pedagogy. Praha : Karolinum 2005. Výrost, J., Slaměník, I.: Sociální psychologie. Praha : Grada 2008. Výrost, J., Salměník, I.: Aplikovaná sociální psychológie I. Praha: Portál 1998. Fontana, D. : Psychologie ve školní praxi. Praha: Portál 1997. Zelina, M.: Stratégie a metódy rozvoja osobnosti. Bratislava, Iris: 1996. Křivohlavý, J.: Pozitívni psychologie. Praha: Portál 2004. Křivohlavý, J.: Psychologie zdraví. Praha: Portál 2003. **Course language:** slovak Notes: **Course assessment** Total number of assessed students: 1734 A В С D Е FX 11.01 20.13 23.88 22.38 20.18 2 4 2

**Provides:** prof. PhDr. Oľga Orosová, CSc., Mgr. Lucia Barbierik, PhD., PhDr. Anna Janovská, PhD.

# Date of last modification: 14.09.2023

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: KPPaPZ/PTPN/17	<b>Course name:</b> Psychology of Creativity and Working with Gifted Students in Teacher Practice
Course type, scope a Course type: Practic Recommended cou Per week: 2 Per stu Course method: pre	nd the method: ce rse-load (hours): dy period: 28 esent
Number of ECTS cr	edits: 2
Recommended seme	ster/trimester of the course: 2.
Course level: II.	
Prerequisities:	
Conditions for cours 1. active participation seminar work - 30p. final evaluation accou FX 55 and less. Deta of the subject will be	<b>Se completion:</b> In in lessons (max. 2 absences) - 30p, 2. own output at the seminar - 40p, 3. By summing the points obtained during the semester, the student obtains the rding to the given scale: A 87 - 100, B 77 - 86, C 69 - 76, D 61 - 68, E 56 - 60, iiled information in the electronic board of the course in AIS2. The teaching realized by a combined method.
Learning outcomes: The student understa the specifics of work apply methods to sup creativity in educatio	nds the basic factors and process of creativity. The student is able to explain ing with the gifted. He knows the methods of identifying talent and also can port creativity and the development of talent in the implementation of creative n.
Brief outline of the c The concept of creati A brief history of the Social, psychological Cognitive processes Creativity and cognit Development of crea Talent and giftedness Methods of determin Methods of developin Creativity and talent	vity. theory of creativity. and biological factors of creativity. in creativity. ive style. tivity. ing creativity and talent. ng creativity and talent. development programs. Specifics of working with the gifted children.
Kecommended litera DOČKAL, V. (2006) štruktúru osobnosti. I Slovak Academic Pro HŘÍBKOVÁ, L. (200 výzkumy a jejich vzt DACEY, J.S LENN	<ul> <li>Inteligencia a tvorivosť, tvorivé nadanie od intelektovej schopnosti po (n: KUSÁ, D. a kol. EDS. (2006): Zjavná a skrytá tvorivosť. Bratislava:</li> <li>Nadání a nadaní. Pedagogicko- psychologické přístupy, modely, ah ke školské praxi. Praha: Grada Publishing ON, K.H. (2000): Kreativita. Praha: Grada</li> </ul>

GROSS, M.U.M. (2009): Highly Gifted Young People: Development from Childhood to Adulthood. In: SHAVININA, L. (2009): International Handbook on Giftedness. Part one. Springer

KUSÁ, D. a kol. EDS. (2006): Zjavná a skrytá tvorivosť. Bratislava: Slovak Academic Press KOLKOVÁ, S. (2000): Tvorivosť a jej rozvoj vo voľnočasových aktivitách detí (v školskom klube). Bratislava: Metodické centrum v Bratislave

LOKŠOVÁ, I., - LOKŠA, J.: (2003): Tvořivé vyučování. Praha: Grada

LAZNIBATOVÁ, J. (2004): Špecifiká vývinu a vzdelávania nadaných detí. In: Psychológia a patopsychológia dieťaťa, roč.39, č. 2-3

LAZNIBATOVÁ, J. (2001): Nadané dieťa, jeho vývin, vzdelávanie a podporovanie. Bratislava: Iris

MESÁROŠOVÁ, M. (1998): Nadané deti. Poznávanie a rozvíjanie ich osobnosti. Prešov: Manacon

SZOBIOVÁ, E. (2004): Tvorivosť – Od záhady k poznaniu. Bratislava: Stimul - Centrum informatiky a vzdelávania FIF UK

National and international scientific journlas

Course	language:
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slovak

Notes:

## **Course assessment**

Total number of assessed students: 80

А	В	С	D	Е	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: Mgr. Lucia Barbierik, PhD.

Date of last modification: 24.06.2022

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
Course ID: KSSFaK/ ČGUAP/15	Course name: Reading Literacy in Educational Process		
Course type, scope a Course type: Lectur Recommended cour Per week: 2 Per stu Course method: pre	nd the method: re rse-load (hours): dy period: 28 esent		
Number of ECTS cro	edits: 2		
Recommended seme	ster/trimester of the cours	e: 2.	
Course level: II.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
Notes:			
Course assessment Total number of asses	ssed students: 44		
	abs n		
	100.0 0.0		
Provides: doc. PaedD	Dr. Ivica Hajdučeková, PhD.		
Date of last modifica	tion: 15.09.2023		
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CSc., prof	. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter	

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
Course ID: ÚFV/ MPPb/15	Course name: Scheduled practice teaching		
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	nd the method: ce rse-load (hours): y period: 36s esent		
Number of ECTS cr	edits: 1	_	
Recommended seme	ster/trimester of the cours	e: 2.	
Course level: II.			
Prerequisities: KPE/	MPPa/15 and KPE/PDU/15	and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)	
<b>Conditions for cours</b> Student observes 11 teacher trainer. Confi	e completion: physics lessons and leads or rmation of classroom visits.	one own physics lesson under the guidance of a Written assessment made by teacher trainer.	
Learning outcomes: Students acquire know the subject of physic first experience with	wledge by observing the pra s and getting known about teaching the subject of phys	actical applications of teaching skills for teaching the organization of school work. Studneets gain ics.	
Brief outline of the c Students observe the it with teacher trainer is scheduled once a v are obeservation/teac the teacher trainer.	ourse: process of teaching physics a r. Practice takes place continues week at the time of the first hing, the third lesson - analy	at lower and upper secondary schools and analyze uously durin the course of the semester. Practice to third lesson at schools. The first two lessons ysing the teaching process under the guidance of	
Recommended litera	iture:		
<b>Course language:</b> Slovak			
Notes:			
<b>Course assessment</b> Total number of asses	ssed students: 80		
	abs n		
	100.0 0.0		
Provides: doc. RNDr	. Jozef Hanč, PhD.		
Date of last modifica	tion: 03.05.2015		
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CSc., prof	RNDr. Jozef Doboš, CSc., prof. RNDr. Peter	

	COURSE INFORMATION LETTER	
University: P. J. Šafán	rik University in Košice	
Faculty: Faculty of So	cience	
Course ID: ÚMV/ Course name: Scheduled practice teaching /PPb/15		
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	nd the method: ce se-load (hours): y period: 36s esent	
Number of ECTS cro	edits: 1	
Recommended semes	ster/trimester of the course: 2.	
Course level: II.		
<b>Prerequisities:</b> KPE/N	MPPa/15 and KPE/PDU/15 and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)	
Teaching of a specifie and 11 visitation of cl Submission of written classes visitations, sel	ed number of hours and visitations of specified number of classes (1 teaching asses). assignments (reflection on teaching practice, statement of teaching hours and lected lesson plans).	
Learning outcomes: Application of the kr pedagogical practice. analysis of the lesson shift his/her knowledg	nowledge acquired in didactic courses focused on teaching mathematics in Development of the student's self-reflection within the framework of the s taught by the student. Identification of the student's weaknesses in order to ge. To acquaint students with the atmosphere and the organization of school.	
Brief outline of the constitutions of classes Analysis of lessons Lesson plans preparate Classes managed accord Reflection on realized	ourse: in selected lessons tion ording to prepared lesson plan d classes	
<b>Recommended litera</b> Mathematics curricula Hejný, M.: Teória vyu M. Hejný, J. Novotná Karlova v Praze - Pec	ture: a and textbooks for middle and secondary schools učovania matematiky 2. Bratislava : SPN 1989 a, N. Stehlíková: Dvacet pět kapitol z didaktiky matematiky 2, Univerzita lagogická fakulta, Praha, 2004	
<b>Course language:</b> Slovak		
Notes:		

Course assessment Total number of assessed students: 99			
abs	n		
100.0 0.0			
<b>Provides:</b> doc. RNDr. Ingrid Semanišinová, PhD Veronika Hubeňáková, PhD.	., doc. RNDr. Dušan Šveda, CSc., RNDr.		
Date of last modification: 24.08.2022			
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof Kollár, DrSc.	RNDr. Jozef Doboš, CSc., prof. RNDr. Peter		

University: P. J. Šafá	arik University in Košice
Faculty: Faculty of S	Science
<b>Course ID:</b> ÚFV/ FEP1/15	Course name: School Computer-Based Physical Laboratory
Course type, scope a Course type: Lectu Recommended cou Per week: 2 / 1 Per Course method: pro-	and the method: re / Practice irse-load (hours): study period: 28 / 14 esent
Number of ECTS cr	redits: 3
Recommended seme	ester/trimester of the course: 1., 3.
Course level: II.	
Prerequisities:	
<b>Conditions for cours</b> Terms and condition -participation in clas -active participation -submitting all the as -realization, presenta Final assessment: -based on assessmen Conditions for succe -participation in less -achieving the level b	se completion: s of assessment during the semester ses in accordance with study regulations and teacher's instructions at seminars and exercises ssignments in accordance with teacher's instruction and defence of the final assignment t during the semester ssful completion of the course: ons in accordance with the study regulations and teacher's instructions higher than 50 % in assessment during the semester and in final assessment
Learning outcomes: By the end of the coursupport active learning ains skills to use and on videorecordings a activities in physics to ' development.	urse student gains an overview about the possible use of digital technologies to ng in physics implementing methods of inquiry-based science education. He d develop activities on measuring data with the help of datalogging, measuring and picture and modeling physical processes. Student is able to implement such eaching to support active learning, conceptual understanding and inquiry skills
<ul> <li>Brief outline of the of</li> <li>1. Inquiry-based scie</li> <li>2. Inquiry teaching a videomeasruement, 1</li> <li>3. Data collection in</li> <li>4. Processing and an</li> <li>5. Activities on realmethods.</li> <li>6. Videomeasurement</li> <li>7. Processing and an</li> <li>8. Activities on videometric science of the science o</li></ul>	course: ence education (IBSE). Inquiry skills. Digital technologies to enhance IBSE. and learning in computer-based laboratory. Digital tools for data collection, modeling and data processing and analysis. real experiment with the help of sensors. alysis of data gained with the help of sensors. -time measurements and processing and data analysis implementing IBSE nt. How to measure on videorecording and picture. alysis of data gained from videomeaurement. omeasurement and processing and data analysis implementing IBSE methods

9.Mathematical modeling with the help of computer. Role of computer modeling in science education.

10. Activities on computer modeling implementing IBSE methods.

11.Inquiry-based science education and methods of assessment.

12.Lesson design implementing digital technologies and IBSE methods.

## **Recommended literature:**

Learning by doing the CMA way, available on https://cma-science.nl/ SOKOLOFF, David, THORNTON, Ronald, K.: Interactive Lecture Demonstrations, Wiley , 2006

## **Course language:**

English

## Notes:

## Course assessment

Total number of assessed students: 17

А	В	С	D	Е	FX
76.47	23.53	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Zuzana Ješková, PhD.

Date of last modification: 15.09.2021

University: P. J	. Šafárik Univers	sity in Košice			
Faculty: Facult	y of Science				
Course ID: ÚF PSP1/22	V/ Course na	ame: School Phy	sical Experimen	ts I	
Course type, sc Course type: I Recommended Per week: 2 Pe Course metho	ope and the me Practice d course-load (h er study period: d: present	thod: ours): 28			
Number of EC	TS credits: 2				
Recommended	semester/trime	ster of the cours	e: 1.		
Course level: II	•				
Prerequisities:					
<b>Conditions for</b> continuous write being active in g final oral examined	<b>course complet</b> ten tests practises ination	ion:			
Learning outco To gain basic si belonging to th familiar with d educational pro	mes: kills with demon e subject matter idactic procedur cess.	stration and physics classe in Physics classe es related to usir	sics interpretations at basic school experiences at basic school experiences at a school experience at a school experience at a school experience at a school school experience at a school sch	on of school physols and high school iments in different	sics experiments ools. To become nt phases of the
Brief outline of The practices an experiments fro pupils. The emp school physics	the course: re aimed at pract om selected topic ohasis is on famil experiments and	ical realization ar es of the physics iarizing with teac on getting basic	nd physics interp subject matter hing aids and die skills with their	oretation of schoo for basic-school dactic devices use utilization in phy	ol demonstration and high-school ed in performing rsics teaching.
Recommended 1.Kašpar,E.,Vac 2.Koubek, V. a 3.http://physedu	literature: chek,J.: Pokusy z kol.: Školské pol 1.science.upjs.sk	z fyziky na středn kusy z fyziky, SP /sis/fyzika/experi	ích školách, I.dí N Bratislava, 19 menty/index.htr	l, SPN Praha,196 992 n	7
<b>Course languag</b> Slovak	ge:				
Notes:					
Course assessm Total number of	ent f assessed studen	its: 12			
А	В	С	D	Е	FX
91.67	8.33	0.0	0.0	0.0	0.0
<b>Provides:</b> RND	r. Katarína Koze	lková, PhD.			
Date of last mo	dification: 15.02	2.2022			
L					

University: P. J. Šaf	ărik University in Košice			
Faculty: Faculty of	Science			
<b>Course ID:</b> ÚFV/ PSP2/22	Course name: School Physical Experiments II			
Course type, scope Course type: Pract Recommended cou Per week: 2 Per st Course method: p	and the method: ice urse-load (hours): rudy period: 28 resent			
Number of ECTS c	eredits: 2			
Recommended sem	ester/trimester of the course: 2.			
Course level: II.				
Prerequisities:				
Terms and condition -participation in clas -tests during the sen -active participation -first assessment 15 -second assessment Final assessment: -based on assessment Conditions for succe -participation in less -achieving the level	as of assessment during the semester sses in accordance with study regulations and teacher's instructions nester 50 points 20 points points 15points nt during the semester essful completion of the course: sons in accordance with the study regulations and teacher's instructions higher than 50 % in assessment during the semester and in final assessment			
Learning outcomes By the end of the co methods, techniques are parts of the subje with the course curr	: ourse sudents gain knowledge and broaden skills necessary for understanding s and physical interpretations of all types of school physical experiments tha ect matter in physics classes at lowe and upper secondary schools in accordance ricular content			
<b>Brief outline of the</b> The practises are air experiments from se and their convenient teaching aids and die skills with their utili 1. Oscillations 2. Waves and acoust 3. Electrostatics 4. Electric current 5. Stationar magnetic 6. Non-stationar magnetic 7. Alternating current	course: ned at practical realization and physics interpretation of school demonstration elected topics of the physics subject matter for basic- and high-school pupils t incorporation into educational process. The emphasis is on familiarizing with dactic devices used in performing school physics experiments and on extending ization in physics teaching. The course content involves: tics ic field agnetic field nt			
	Page: 100			

8.Optics

## **Recommended literature:**

ONDEROVÁ, Ľudmila, KIREŠ, Marián, JEŠKOVÁ, Zuzana, DEGRO, Ján: Praktikum školských pokusov z fyziky II., PF UPJŠ, Košice, 2004

LEPIL, Oldřich, HOUDEK, Václav, PECHO, Alojz: Fyzika pre 3.ročník gymnázií, SPN, Bratislava, 1998

PIŠÚT, Ján a kol, Fyzika pre 4.ročník gymnázia, SPN, Bratislava, 1987

DEMKANIN, Peter, HORVÁTH, Peter, CHALUPKOVÁ, Soňa, ŠUHAJOVÁ, Zuzana: Fyzika pre 2.ročník gymnázia a 6.ročník gymnázia s osemročným štúdiom, Združenie EDUCO, 2010 DEMKANIN, Peter, HORVÁTHOVÁ, Martina: Fyzika pre 3.ročník gymnázia a 7.ročník gymnázia s osemročným štúdiom, Združenie EDUCO, 2012

## **Course language:**

Slovak

Notes:

#### **Course assessment**

Total number of assessed students: 8

А	В	С	D	Е	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Zuzana Ješková, PhD.

**Date of last modification:** 15.02.2022

Faculty: Faculty of Science					
Course ID: ÚFV/ DEX/22Course name: Selected Demonstration Experiments	V/ Course name: Selected Demonstration Experiments				
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 2 Per study period: 14 / 28 Course method: present					
Number of ECTS credits: 3					
Recommended semester/trimester of the course: 2.					
Course level: II.					
Prerequisities:					
<b>Conditions for course completion:</b> Seminar work – a project dealing with hands-on experiments and their role in Physics teachig. Oral examination					
<b>Learning outcomes:</b> The goal of the course is to develop pedagogic skills and creativity of further Physics teachers through non-traditional physical experiments.					
<b>Brief outline of the course:</b> The aim of the lecture is to show a lot of non-traditional physical experiments which can help students understand physical phenomena and find their connection with everyday life. The experiments are mainly hands-on ones which can be performed with simple tools and don't require any special equipment. The experiments are carried out by students themselves. Through these experiments students are able to gain practical skills, develop experimental habits and verify their theoretical knowledge.					
<ul> <li>Recommended literature:</li> <li>1. Onderová Ľ.:Netradičné experimenty vo vyučovaní fyziky, MC Prešov,2002</li> <li>2. Lorbeer,G.L.,Nelsonová, L.W.: Fyzikální pokusy pro děti, Portál, Praha, 1998</li> <li>3. Kostič, Ž.: Medzi hrou a fyzikou, Alfa, Bratislava, 1971</li> <li>4. Kireš, M., Onderová, Ľ.: Fyzika každodenného života v experimentoch a úlohách, JSMF Bratislava 2001, ISBN 80-7097-446-X</li> <li>5. http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm</li> </ul>					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 13					
A B C D E FX					
76.92 7.69 0.0 0.0 0.0 15.38					

Provides: doc. RNDr. Marián Kireš, PhD.

Date of last modification: 15.02.2022

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚFV/ VPF1/15	Course name: Selected General Physics Problems I
Course type, scope a Course type: Lectur Recommended cou Per week: 3 Per stu Course method: pro	nd the method: re rse-load (hours): dy period: 42 esent
Number of ECTS cr	edits: 3
Recommended seme	ster/trimester of the course: 2.
Course level: II.	
Prerequisities:	
<b>Conditions for cours</b> 1. writing exam 20 p 2. writing exam 20 p self examples 60 bod A 100-90 B 89-80 C	e completion: oints oints ov 79-70 D 69-60 E 59-50 F 49-0
<b>Learning outcomes:</b> Physics interpretatio problems.	nf of everyday phenomena can help with deeper understanding of physics
<ul> <li>Brief outline of the of 1. Kinematics and dy 2. Hydrostatics and h</li> <li>3. Surface properties</li> <li>4. Thermics and The</li> <li>5. Thermics and The</li> <li>6. Electrostatics</li> <li>7. Electric field</li> <li>8. Magnetic field</li> <li>9. Mechanical oscilla</li> <li>10. Acoustics</li> <li>11. Ray Optics</li> <li>12. Wave Optics</li> <li>13. Student assignment</li> </ul>	ourse: namics ydrodynamics of liquids rmodynamics rmodynamics II ations, resonance, waves
Recommended litera 1.Nahodil, J.: Fyzika 2.Tulčinskyj, : Zbierl 3.Kašpar, E. : Problé 4.Feynman, R.P. : Fe 5.Landau, Kitajgorod 6.Lange, V.: To chce 7.http://kekule.sciend	v bežnom živote, Prometheus, Praha, 1996 ca kvalitatívnych úloh z fyziky, SPN, Bratislava, 1990 mové vyučovanie a problémové úlohy, SPN, Praha1982 ynmanove prednášky z fyziky 1-5, Alfa, 1985 lskij : Fyzika pre každého, Alfa 1972 vtip!, Alfa, Bratislava, 1988 ce.upjs.sk/fyzika

8.http://physed	u.science.upjs.sk				
<b>Course langua</b> Slovak, English	ge:				
Notes:					
Course assessn Total number o	nent f assessed studen	ts: 33			
А	В	С	D	Е	FX
81.82	15.15	0.0	0.0	0.0	3.03
Provides: doc.	RNDr. Marián Ki	reš, PhD.			
Date of last mo	dification: 28.03	.2020			
Approved: prot Kollár, DrSc.	f. PhDr. Ol'ga Oro	osová, CSc., prot	f. RNDr. Jozef D	oboš, CSc., prof.	. RNDr. Peter

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ VPF2/22	Course name: Selected General Physics Problems II				
Course type, scope an Course type: Lecture Recommended cour Per week: 2 Per stue Course method: pre	nd the method: e rse-load (hours): dy period: 28 sent				
Number of ECTS cre	edits: 2				
Recommended semes	ster/trimester of the course: 3.				
Course level: II.					
Prerequisities:					
<b>Conditions for course</b> presentation of selecte writing exam 70 p A 100-90 B 89-80 C 7	e <b>completion:</b> ed problem 30 p 79-70 D 69-60 E 59-50 F 49-0				
Learning outcomes: Everyday phenomena	are used for deeper and conceptual understanding of physics problem.				
Brief outline of the co 1.Mechanics •Coriolisova force •How Swing works •Bicycle •Tides •Inertia 2.Hydromechanics •Archimedes screw •Water flow •Archimedes principle 3.Kapilarity •Water in plant •Kapilár hysteresis •Bubbles and soap •Floating on water sur 4.Acoustic •Signal production •Human voice •Space acoustic •Home ciname 5.Optics •Sight •Opticalillusions	e in Action				

<ul> <li>Space imaging</li> <li>Atmospheric acoustic</li> <li>6.Probléms IYPT</li> <li>Magnetohydrodynamics</li> <li>Bulbs</li> <li>Falling spring</li> <li>Ship movement</li> <li>Thermal exchange</li> <li>7.Differenct problems</li> <li>Sonoluminiscence</li> <li>Ice pick</li> <li>Kelvin water droplet</li> <li>Water stain</li> <li>8.Student work presentation</li> </ul>						
<ul> <li>Recommended literature:</li> <li>1. Walker, J.: The Flying Circus of Physics with answers, John Wiley &amp;Sons, 2005</li> <li>2. Gnädig, P., Honyek, G., Riley, K.: 200 Puzzling Physics Problems with Hints and Solutions, Cambridge University Press, 2001</li> <li>3. Stepans, J.: Targeting Studnets ` Misconceptions, Showboard, 2003</li> <li>4. Swartz, C.: Back of the Envelope Physics, The John Hopkins Uni. Press, Baltimore, 2003</li> <li>5. Nahodil, J.: Fyzika v bežnom živote, Prometheus, Praha, 1996</li> <li>6. Tulčinskyj, : Zbierka kvalitatívnych úloh z fyziky, SPN, Bratislava, 1990</li> <li>7. Kašpar, E. : Problémové vyučovanie a problémové úlohy, SPN, Praha1982</li> <li>8. Feynman, R.P. : Feynmanove prednášky z fyziky 1-5, Alfa, 1985</li> <li>9. Landau, Kitajgorodskij : Fyzika pre každého, Alfa 1972</li> <li>10. Lange, V.: To chce vtip!, Alfa, Bratislava, 1988</li> <li>actual articles</li> </ul>						
Course language: Slovak English						
Notes:						
Course assessment Total number of assessed students: 0						
А	B C D E FX					
0.0 0.0 0.0 0.0 0.0 0.0						
Provides: doc. RNDr. Marián Kireš, PhD.						
Date of last mo	dification: 15.02	.2022				
Annroved prof	DhDr Ol'go Org	nové CSa prot	PNDr Jozef D	aboš CSa prof	DNDr Datar	

University:	Р	T	Šafárik	University	<i>i</i> in	Košice
University.	1.	J.	Salarik	University	/ Ш	RUSICC

Faculty: Faculty of Science

Course ID: ÚMV/	Course name: Seminar on history of mathematics I
SHMa/22	

**Course type, scope and the method: Course type:** Practice **Recommended course-load (hours):** 

**Per week: 2 Per study period: 28** 

Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: I., II.

Prerequisities:

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

Conditions for continuous evaluation:

1. Participation in teaching in accordance with the study rules and instructions of the teacher.

- 2. Activity.
- 3. Homework and tests.

4. Seminar work and its presentation at the seminar – poster from history of mathematics on the selected topic

Conditions for successful completion of the course:

1. Participation in teaching in accordance with the study regulations and according to the instructions of the teacher;

2. Credits will be awarded to students who score at least 50% on homework assignments and tests. Additional points can be achieved for the presentation of a seminar paper.

## Learning outcomes:

The student knows the main stages of the development of mathematics, the history of the development of the language of mathematics, the development of selected concepts and some mathematical disciplines. The student understands the parallels between the phylogeny and ontogeny of mathematical thinking.

#### Brief outline of the course:

Prehistory, ontogeny and phylogeny.

Mathematics in ancient cultures: Egypt, Mesopotamia, China, India.

Mathematics in ancient Greece: Origins of Greek natural philosophy and mathematics. The discovery of incommensurability and its consequences (Pythagoras and his school). Classical problems of Greek mathematics. Problems with infinity (Zeno). Eudoxus' method. Plato, Aristotle, Euclid and his Foundations. Archimedes of Syracuse, Eratosthenes, Apollónios, Claudios Ptolemy, Diophantos.

Arabic mathematics and its relation to medieval European mathematics.

The origins of modern mathematics. The search for the roots of polynomial equations. The origins of analytic geometry. Probability. Infinitesimal calculus. Number theory. Non-Euclidean geometry. The origin of set theory.

Development of mathematical symbolism.
Selected topics in school mathematics from the perspective of the history of mathematics.

## **Recommended literature:**

Burton, D. M.: The History of Mathematics: An Introduction. McGraw-Hill, 2007.

Devlin, K.: Jazyk matematiky. Dokořán, 2002. (in czech)

Čižmár, J. Dejiny matematiky (Od najstarších čias po takmer súčasnosť) Perfekt, 2017. (in slovak)

Mareš, M. Příběhy matematiky. Pistorius, 2011. (in czech)

**Course language:** 

Slovak

Notes:

## Course assessment

Total number of assessed students: 143

А	В	С	D	Е	FX
68.53	16.78	7.69	3.5	2.8	0.7

Provides: doc. RNDr. Ingrid Semanišinová, PhD.

**Date of last modification:** 24.08.2022

Faculty: Faculty of Science

Course ID: ÚMV/	Course name: Seminar on history of mathematics II
SHMb/22	

Course type, scope and the method: Course type: Practice Recommended course-load (hours):

Per week: 2 Per study period: 28

Course method: present

Number of ECTS credits: 2

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

Course level: I., II.

Prerequisities:

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

Conditions for continuous evaluation:

1. Participation in teaching in accordance with the study rules and instructions of the teacher.

- 2. Activity.
- 3. Homeworks.
- 4. Seminar work on the selected topic and its presentation at the seminar
- Conditions for successful completion of the course:

1. Participation in teaching in accordance with the study regulations and according to the instructions of the teacher;

2. Credits will be awarded to students who score at least 50% on homework assignments and tests. Additional points can be achieved for the presentation of a seminar paper.

### Learning outcomes:

Students will demonstrate an understanding of the history of the development of some mathematical disciplines and selected concepts. They will demonstrate this understanding by scoring at least 50% on previous topics and homework assignments.

### Brief outline of the course:

- 1. Algebra and geometry of 16th and 17th century Tartaglia, Vieta, Descartes
- 2. Beginning of modern number theory Mersenne, Fermat
- 3. Development of infinitesimals -- Newton, Leibniz, Bernoulliovci
- 4. Complex and hypercomplex numbers -- Hamilton, Cayley, Clifford
- 5. Combinatory and probability Pascal, Fermat
- 6. Algebra in the 18th and 19th century Gauss, Abel, Galois
- 7. Non-Euclidean geometries Gauss, Lobačevskij, Bolyai
- 8. Mathematical analysis in the 19th century Cauchy, Bolzano, Weierstrass
- 9. Set theory Bolzano, Cantor, Zermelo, Franklin
- 10. Mathematics in the beginning of 20th century Peano, Hilbert, Gödel

### **Recommended literature:**

Berlinghoff, W.P., Gouvea, F.Q.: Math through the Ages, MAA Press, 2015.

Čižmár, J. Dejiny matematiky (Od najstarších čias po takmer súčasnosť) Perfekt, 2017.

Hairer, E., Wanner, G.: Analysis by its History, Springer, 2008.

Mareš, M. Příběhy matematiky. Pistorius, 2011.							
Course language: Slovak							
Notes:							
Course assessment Total number of assessed students: 10							
А	A B C D E FX						
40.0	40.0 40.0 20.0 0.0 0.0 0.0						
Provides:							
Date of last modification: 21.09.2023							
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.							

University: P. J. Safărik University in Košice         Faculty: Faculty of Science         Course ID:       Course name: Slovak Language for Teachers         KSSFaK/VSJU/15       Course name: Slovak Language for Teachers         Course type, scope and the method:       Course type: Lecture         Recommended course-load (hours):       Per week: 2 Per study period: 28         Course method: present       Number of ECTS credits: 2         Recommended semester/trimester of the course: 1., 3.       Course level: II.         Prerequisities:       Conditions for course completion:         Conditions for successful completion of the course:       a) regular active participation in seminars,         b) preparation of basic literature and content of lectures,       c) elaboration of seminar work / creative task,         d) successful completion of the final test.       Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min. 56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00% D 64.99 - 56.00% E 55.99% and less FX         Prerequisities for successful completion of the course are annually updated on the electronic bulletin board in AIS2.         Learning outcomes:       During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
Faculty of Science         Course ID: KSSFaK/VSJU/15         Course name: Slovak Language for Teachers         KSSFaK/VSJU/15         Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present         Number of ECTS credits: 2         Recommended semester/trimester of the course: 1., 3.         Course level: II.         Prerequisities:         Conditions for course completion: Conditions for successful completion of the course: a) regular active participation in seminars, b) preparation of basic literature and content of lectures, c) elaboration of seminar work / creative task, d) successful completion of the final test. Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min. 56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00% D 64.99 - 56.00% E 55.99% and less FX Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.         Learning outcomes: During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
Course ID: KSSFaK/VSJU/15         Course name: Slovak Language for Teachers           Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week; 2 Per study period: 28 Course method: present           Number of ECTS credits: 2           Recommended semester/trimester of the course: 1., 3.           Course level: II.           Prerequisities:           Conditions for course completion: Conditions for successful completion of the course: a) regular active participation in seminars, b) preparation of basic literature and content of lectures, c) elaboration of seminar work / creative task, d) successful completion of the final test. Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min. 56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00% D 64.99 - 56.00% E 55.99% and less FX Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.           Learning outcomes: During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
Course type, scope and the method:         Course type: Lecture         Recommended course-load (hours):         Per week: 2 Per study period: 28         Course method: present         Number of ECTS credits: 2         Recommended semester/trimester of the course: 1., 3.         Course level: II.         Prerequisities:         Conditions for course completion:         Conditions for successful completion of the course:         a) regular active participation in seminars,         b) preparation of basic literature and content of lectures,         c) elaboration of seminar work / creative task,         d) successful completion of the final test.         Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min.         S6%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00%         D 64.99 - 56.00% E 55.99% and less FX         Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.         Learning outcomes:         During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
Number of ECTS credits: 2         Recommended semester/trimester of the course: 1., 3.         Course level: II.         Prerequisities:         Conditions for course completion:         Conditions for successful completion of the course:         a) regular active participation in seminars,         b) preparation of basic literature and content of lectures,         c) elaboration of seminar work / creative task,         d) successful completion of the final test.         Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min.         56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00%         D 64.99 - 56.00% E 55.99% and less FX         Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.         Learning outcomes:         During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
Recommended semester/trimester of the course: 1., 3.         Course level: II.         Prerequisities:         Conditions for course completion:         Conditions for successful completion of the course:         a) regular active participation in seminars,         b) preparation of basic literature and content of lectures,         c) elaboration of seminar work / creative task,         d) successful completion of the final test.         Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min.         56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00%         D 64.99 - 56.00% E 55.99% and less FX         Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.         Learning outcomes:         During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
Course level: II.         Prerequisities:         Conditions for course completion:         Conditions for successful completion of the course:         a) regular active participation in seminars,         b) preparation of basic literature and content of lectures,         c) elaboration of seminar work / creative task,         d) successful completion of the final test.         Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min.         56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00%         D 64.99 - 56.00% E 55.99% and less FX         Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.         Learning outcomes:         During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
Prerequisities:Conditions for course completion: Conditions for successful completion of the course: a) regular active participation in seminars, b) preparation of basic literature and content of lectures, c) elaboration of seminar work / creative task, d) successful completion of the final test. Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min. 56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00% D 64.99 - 56.00% E 55.99% and less FX Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.Learning outcomes: During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
<ul> <li>Conditions for course completion:</li> <li>Conditions for successful completion of the course:</li> <li>a) regular active participation in seminars,</li> <li>b) preparation of basic literature and content of lectures,</li> <li>c) elaboration of seminar work / creative task,</li> <li>d) successful completion of the final test.</li> <li>Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min.</li> <li>56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00%</li> <li>D 64.99 - 56.00% E 55.99% and less FX</li> <li>Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.</li> <li>Learning outcomes:</li> <li>During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery</li> </ul>
Learning outcomes: During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery
of the performance standard, within which the student is able to practically apply the standard of standard Slovak in oral and written communications. manuals, gain skill in the bibliographic and citation standard. The graduate of the course normatively masters written communication on the basis of current orthographic rules and knows the basic characteristics of the means of expression of the text and functional language style. <b>Brief outline of the course:</b> Characteristics of basic terms of general linguistics (language – speech, language functions, the

characteristics of basic terms of general inguistics (language – speech, language functions, the sign character of language, language levels, content and form in language, individual and general aspect of language units) on interdisciplinary background and with the application to Slovak as a national language. Language standard, codification, usus. Basic codification manuals. Application of orthographic rules in practical documents. Sound culture, pronunciation styles. Orthoepic phenomena in vowels and consonants. Application of rhythmic law and its exceptions. Assimilation and its specific features in Slovak. Style, stylization – methods and demonstration of structure of text components.

# **Recommended literature:**

BÓNOVÁ, I. - JASINSKÁ, L.: Jazyková kultúra nielen pre lingvistov. Košice: UPJŠ 2019. 100 s.

FINDRA, J.: Štylistika slovenčiny. Martin : Osveta, 2004.

FINDRA, J.: Štylistika slovenčiny v cvičeniach. Martin : Osveta, 2005.

KRÁĽ, Á.: Pravidlá slovenskej výslovnosti. Martin: Matica slovenská 2006. 423 s.

Krátky slovník slovenského jazyka. Martin: Matica slovenská 2020.

SABOL, J.- SLANČOVÁ, D. - SOKOLOVÁ, M.: Kultúra hovoreného slova. Prešov, FF UPJŠ 1989.

Pravidlá slovenského pravopisu. Bratislava: Veda 2000 (2013).

SABOL, J. – BÓNOVÁ, I. – SOKOLOVÁ, M.: Kultúra hovoreného prejavu. Prešov: FF PU 2006.

SLANČOVÁ, D.: Praktická štylistika. 2., upravené a doplnené vydanie. Prešov: Slovacontact 1996. 178 s. ISBN 80-901417-9-X.

Slovník súčasného slovenského jazyka. Bratislava: Veda 2006.

Slovník súčasného slovenského jazyka. Bratislava: Veda 2011.

Slovník súčasného slovenského jazyka. Bratislava: Veda 2015.

## **Course language:**

Slovak language

### Notes:

## **Course assessment**

Total number of assessed students: 150

А	В	С	D	Е	FX
14.0	23.33	32.67	14.67	13.33	2.0

Provides: PhDr. Iveta Bónová, PhD., PhDr. Lucia Jasinská, PhD.

**Date of last modification:** 24.06.2022

× .	
University: P. J. Safa	árik University in Košice
Faculty: Faculty of S	Science
<b>Course ID:</b> ÚFV/ FKS/22	Course name: Solid State Physics
Course type, scope a Course type: Lectu Recommended cou Per week: 2 Per stu Course method: pr	and the method: ire irse-load (hours): udy period: 28 resent
Number of ECTS cr	redits: 2
Recommended sem	ester/trimester of the course: 1.
Course level: II.	
Prerequisities:	
Conditions for cour Sucessfull passing the and laws from Cond transport and magne The number of cred contents of the cours During semester stud participate in the fina for for sucessfull pass exam. Maximal total The scale of the tota A 100-91% B 90-81% C 80-71% D 70-61% E 60-50% Fx 49-0%	se completion: ie course requires presentation of adequate knowledge of concepts, phenomena lensed Matter Physics. Knowledge of structural, mechanic, electric, thermal, tic properties of solids and potetail possibilities of their practical applications. its reflects the extent of the course (2 hours of lectures) and the fact that the se represents part of state exam in magister degree. dents will prepare two written works on the given topic and they will actively al debate on the topics which are identical to the content of the lectures. Treshold ssing the course is 50 % of the sum of obtained scores from the tests and oral l score from both tests represents 30 % from the total score. l score is defined as follows:
Sucessfull passing th Student will learn ba	ne course will significantly contribute to the expertise of the teacher in physics. sic concepts in Condensed matter physics and understand phenomena in solids.

He will also learn selected theoretical approaches and used experimental techniques in Condensed matter physics. In addition, he will also be able to interpret simple experimental observations based

on quantum-mechanical phenomena.

# Brief outline of the course:

1.week: Structure of crystals. Amorphous materials. Space and crystal lattice, elementar cell. Bravais lattices and crystallographic systems. Directions and planes in a crystal lattice – Miller's indexes. Reciprocal lattice.

2. week Methods of structural analysis. Diffraction of X-ray radiation on crystals. Bragg's equation and Laue's condition, relation between them. Ewald's construction for different experimental techniques.

3. week: Mechanical properties of solids and perturbations in crystal lattice. Classification of solids according to nature of bonding among elements in crystal lattice. Basic types of bondings (ion, covalent, metal, Van der Walls, hydrogen)

4. week: Thermal properties of solids – Einstein and Debye theory of specific heat. Eletrical properties of solids.

5. week: Sommerfield's theory. Density of electronic states. Influence of temperature on the distribution of free electrons. Fermi – Dirac distribution function.

6. week: Electron in periodic potential. Energy spectrum of electrons in crystal. Kronig – Penney 's model. Effective mass of electron.

7. week: Concept of holes. Semiconductors. Electrical conductivity of metals and semiconductors adopting properties of energy spectrum of electrons.

8. week: Transport properties in metals and semiconductors – Hall effect, magnetoresistance, photoconductivity, contact phenomena, quantum Hall effect.

9. week: Macroscopic quantum phenomena: Superconductivity and Superfluidity.

10. week: Magnetic properties of solids – orbital and spin magnetic moment of atom. Definition of basic magnetic quantities (magnetization, polarization, susceptibility, permeability). Vector model of atom.

11. Classification of magnetic materials according to nature of magnetic interactions. Diamagnetic and paramagnetic systems.

12 week: Basic properties of ferromagnets. Magnetic hysteresis, coercitive field. Domain structure, physical reasons ledaing to the domain structure.

### **Recommended literature:**

H. Ibach, H. Lüth: Solid-State Physics. Springer - Verlag, Berlin, 1993.

Ch. Kittel: Introduction to Solid State Physics. John Wiley & Sons, Inc. 1976.

# **Course language:**

Slovak, English

Notes:

The course is given in attendance form, if a need arises, online form using MS Teams can be adopted.

### **Course assessment**

Total number of assessed students: 30

А	В	С	D	Е	FX
60.0	26.67	10.0	3.33	0.0	0.0

Provides: prof. RNDr. Peter Kollár, DrSc.

**Date of last modification:** 19.12.2022

University D I Čefé	rile Universiter in Vez				
University: P. J. Sala	rik University in Kos				
Faculty: Faculty of S	cience				
<b>Course ID:</b> ÚFV/ SVKD/04	: ÚFV/ Course name: Student Scientific Conference				
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent				
Number of ECTS cr	edits: 4				
Recommended seme	ster/trimester of the	e course: 2., 4.			
Course level: I., II.					
Prerequisities:					
<b>Conditions for cours</b> presentation of result	e completion: s of studnets' researc	h work at Students' scientific conference			
Learning outcomes: Student gains experie	ence and skills in proc	cessing and presentation of results of his research work.			
Brief outline of the c Presentation of result	<b>ourse:</b> s of studnets' researc	h work at Students' scientific conference.			
Recommended litera Based on the recomm	<b>iture:</b> nendations of supervi	sor			
<b>Course language:</b> Slovak					
Notes:					
Course assessment Total number of asse	ssed students: 9				
abs n					
100.0 0.0					
Provides:					
Date of last modifica	ntion: 03.05.2015				
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CS	c., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter			

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ SVK/10	Course ID: ÚMV/ Course name: Students scientific conference				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent				
Number of ECTS cr	edits: 4				
Recommended seme	ster/trimester of the cour	se:			
Course level: I., II.					
Prerequisities:					
Conditions for cours	e completion:				
<b>Learning outcomes:</b> Individual scientific y public presentation.	work of students. Publishin	g of obtained results in a written form and as a			
Brief outline of the c	ourse:				
<b>Recommended litera</b> With respect to the re	ture: search problematics (articl	e in journals, books).			
<b>Course language:</b> Slovak or English					
Notes:	Notes:				
Course assessment Total number of assessed students: 24					
abs n					
100.0 0.0					
Provides:					
Date of last modifica	tion: 01.12.2021				
Approved: prof. PhD Kollár, DrSc.	r. Oľga Orosová, CSc., pro	f. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter			

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: KPE/ Course name: Supervised Teaching Practice MPPa/15				
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 36s Course method: present				
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	<b>e:</b> 1.		
Course level: II.				
Prerequisities:				
Conditions for cours	Conditions for course completion:			
Learning outcomes:				
Brief outline of the course:				
Recommended litera	Recommended literature:			
Course language:	Course language:			
Notes:				
Course assessment Total number of assessed students: 783				
	abs n			
100.0 0.0				
Provides: doc. PhDr. Beata Gajdošová, PhD., doc. PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petríková, PhD.				
Date of last modification: 12.03.2024				
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.				

University: P. J. Šafárik University in Košice					
Faculty: Facult	Faculty: Faculty of Science				
Course ID: KP PDU/15	E/ Course name: Teaching Methodology and Pedagogy				
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of EC	<b>FS credits:</b> 5				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1.		
Course level: II	•				
Prerequisities:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 854					
A	В	С	D	Е	FX
24.82	28.34	26.35	14.4	5.62	0.47
Provides: doc. PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petríková, PhD.					
Date of last modification: 12.03.2024					
Approved: prof. PhDr. Ol'ga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Peter Kollár, DrSc.					

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: KPPaPZ/UPR/15	Course name: The Art of Aiding by Verbal Exchange						
Course type, scope an Course type: Practic Recommended cour Per week: 2 Per stue Course method: pre	nd the method: ce rse-load (hours): dy period: 28 sent						
Number of ECTS credits: 2							
Recommended semester/trimester of the course: 2.							
Course level: II.							
Prerequisities:							
<b>Conditions for course</b> 1. Active participation 2. Elaboration and pr points 20; minimum r 3. Final test in the ran points 20; minimum r presentation and the te The evaluation of the set requirements, while ensure an objective an moral standards. The process or in the assess	e completion: n in seminars esentation of PPT presentation on the assigned topic. Maximum number of number of points 11. ge of 20 questions from selected chapters and lectures. Maximum number of number of points 11. The final evaluation (mark) is the sum of points for the est. A 40b - 37b B 36b - 33b C 32b - 29b D 28b - 25b E 24b - 21b FX 20b - 0b course and its subsequent completion will be based on clearly and objectively ch will be set in advance and will not change. The aim of the assessment is to nd fair mapping of the student's knowledge while adhering to all ethical and re is no tolerance for students' fraudulent behavior, whether in the teaching ssment process.						
Learning outcomes: Provide students with clarify orders. Reflect The student is able to helping conversation. The student is able to techniques to help the The student is able to u process. The method of teachi students' needs, expect respect and feedback The content of the cur topicality of the topics the connection of the or in lectures and semina	basic information about a systemic approach to helping. Train interviewing, to help options. demonstrate an understanding of the theoretical principles of conducting a describe, explain and evaluate in what context to use which of the selected interview with the individual. use basic selected techniques when working with an individual in the interview ong the subject will be oriented to the student. Lecturers will be interested in thations and opinions so as to encourage them to think critically by expressing on their opinions and needs. riculum will be based on primary and high-quality sources that will reflect the s so as to ensure the connection of the curriculum with other subjects and also curriculum with practice. Students will be expected to take an active approach ars with an emphasis on their independence and responsibility.						
Brief outline of the co	ourse:						

Psychological preparation for conducting an interview. Self-reflection of one's own possibilities, abilities to lead a conversation, to help. Possibilities of helping with conversations from the point of view of selected psychological approaches. Systematic approach to helping. Interview and professional ways to help and control. Objectivist and constructivist framework of conversation in theory and practice. Is it possible to help with control? Opening the interview, negotiating the course, course, ending the interview. Constructivist questions in the interview. Analysis of individual phases of conducting the interview. Reflex team possibilities of help in conversation. Models of reflective teams. Model situations of conducting an interview with a group. Professional possibilities, advantages and pitfalls of solving problems with an individual, with a group.

## **Recommended literature:**

## **Course language:**

Notes:

### Course assessment

Total number of assessed students: 180

А	В	С	D	Е	FX
90.56	2.78	5.0	1.11	0.56	0.0

Provides: Mgr. Ondrej Kalina, PhD.

Date of last modification: 24.06.2022