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University: P. J. Šafár	ik University in Košice
Faculty: Faculty of So	cience
Course ID: CJP/ PFAJAKA/07	Course name: Academic English
Course type, scope an Course type: Practic Recommended cour Per week: 2 Per stue Course method: con	nd the method: e 'se-load (hours): dy period: 28 nbined, present
Number of ECTS cre	edits: 2
Recommended semes	ster/trimester of the course:
Course level: I., II., N	[
Prerequisities:	
Conditions for course Active classroom part 1 test (10th week), no Presentation on chose Final evaluation- aver Grading scale: A 93-1	e completion: ticipation, assignments handed in on time, 2 absences tolerated retake. en topic rage assessment of test (40%), essay (30%) and presentation (30%). 100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less
Learning outcomes: The development of s of their linguistic con syntactic aspects, deve for a given purpose, w	tudents' language skills - reading, writing, listening, speaking, improvement npetence - students acquire knowledge of selected phonological, lexical and elopment of pragmatic competence - students can efectively use the language with focus on Academic English, level B2.
Brief outline of the co Formal and informal I Academic English and Key academic verbs a Linking words in acad Word-formation - affi abstract Selected aspects of En Selected functional g paraphrasing	Durse: English d its specific features and nouns lemic writing, writing a paragraph, word-order, topic sentences xation nglish pronunciation, academic vocabulary grammar structures - defining, classifying, epressing opinion, cause-effect,
Recommended litera	ture:
Seal B.: Academic En T. Armer :Cambridge M. McCarthy M., O'I Zemach, D.E, Rumise Olsen, A. : Active Voo www.bbclearningengl Cambridge Academic	Icounters, CUP, 2002 English for Scientists, CUP 2011 Dell F Academic Vocabulary in Use, CUP 2008 ek, L.A: Academic Writing, Macmillan 2005 cabulary, Pearson, 2013 lish.com e Content Dictionary, CUP, 2009

Course language: English language, level B2 according to CEFR.						
Notes:						
Course assessment Total number of assessed students: 400						
A B C D E FX						
34.75 22.0 15.75 9.5 6.25 11.75						
Provides: Mgr. Viktória Mária Slovenská						
Date of last modification: 19.09.2022						
Approved: prof Stanislav Krajči	f. PhDr. Ol'ga Oro , PhD.	osová, CSc., doc.	RNDr. Mária G	anajová, CSc., p	rof. RNDr.	

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚCHV/ AMCU/15	Course name: Activating teaching methods in chemistry
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 cr	edits: 5
Recommended seme	ster/trimester of the course: 2.
Course levels II	

Course level: II.

Prerequisities: ÚCHV/SPC1a/03

Conditions for course completion:

1. Participations in seminars (also applies to the online form of teaching). Students are required to participate in seminars. The students can excuse themself (incapacity for work, family reasons, etc.) for a maximum of two seminars during the semester without the need for replacement. In the case of a longer-term justified absence (for example due to incapacity for work), the student will be assigned an alternative form of completing the missed curriculum.

2. Active participation in class. Seminars are conducted in a form in which students are active – students present assignments, which include worksheets. The student is obliged to prepare 5 written assignments. The assignments will be available through the e-learning portal LMS Moodle (direct link to the website: https://lms.upjs.sk/) in the course Activating teaching methods in chemistry (ÚCHV/AMCU/15).

3. The content of the seminars also includes assignment in a form of seminar work, which the student submits to the course (ÚCHV/AMCU/15). The seminar work will focus on: Suggestion of an activity on a selected topic for active inquiry (inquiry-based learning, project based learning, use of digital technologies) with a focus on the development of specific scientific and digital skills and skills related to learning. The design of the activity will also include the design of summative and formative assessment tools to verify understanding and skills in the topic.

4. The final presentation of the seminar work. Assessment of the presentation skills. (0 - 20 points). The final presentation will form a comprehensive output of acquired knowledge and skills.

The final evaluation in the course consists of the sum of points obtained for:

1. Assignments during the semester 5x (0 - 50 points)

2. Seminar work (0 - 30 points)

3. Final presentation of the seminar paper (0 - 20 points)

Classification level:

- A = 90-100 points
- B = 80-90 points
- C = 70-80 points
- D = 60-70 points
- E = 50-60 points
- FX = 0-50 points

Learning outcomes:

Students will gain an overview of selected activating methods in teaching chemistry from a theoretical and practical point of view. They can design project work, include it in teaching and evaluate its outcomes. They will be able to design inquiry-based activities, include them in teaching and verify their effectiveness based on formative assessment tools. Students will gain knowledge about the requirements of assessment in the 21st century with a focus on the development and validation of conceptual understanding and skills through the tools of summative and formative assessment. They will learn how to create tasks at different levels of Bloom's taxonomy. They will get acquainted with selected cognitive and metacognitive tools of formative assessment as well as with specific examples. They will know and practically use applications usable for online assessment purposes (Google Forms, Socrative, Kahoot, etc.). Students will acquire skills for the implementation of teaching with computer-based experiments in terms of work procedures, working with technology and organization of work.

Brief outline of the course:

- 1. Characteristics of activating methods in chemistry teaching.
- 2. Project-based method in chemistry teaching, characteristics and examples of project work.
- 3. Inquiry-based methods in chemistry teaching, examples of inquiry-based activities.
- 4. Requirements for assessment in the 21st century.
- 5. Assessment in chemistry teaching Summative assessment. Bloom's taxonomy.
- 6. Assessment in chemistry teaching Formative assessment.
- 7. Applications usable for online assessment purposes (Google Forms, Socrative, Kahoot, etc.).
- 8. Computer-based chemical experiments.

Recommended literature:

1. GANAJOVÁ, M.: Metodika tvorby učebných úloh a didaktických testov pre chémiu. Košice: UPJŠ, 2015. ISBN 978-80-8152-237-6. https://unibook.upjs.sk/img/cms/2015/pf/didaktika-texty-ganajova.pdf

2. GANAJOVÁ, M., BRESTENSKÁ, B., GUNIŠ, J., JEŠKOVÁ, Z., KIREŠ, M., LEŠKOVÁ, A., LUKÁČ, S., OROSOVÁ, R., SOTÁKOVÁ, I., SZARKA, K., ŠNAJDER, Ľ.: Formatívne hodnotenie vo výučbe prírodných vied, matematiky a informatiky. 1. vyd. UPJŠ v Košiciach, 2021, 450 s. ISBN 978-80-8152-973-3.

3. Inovovaný štátny vzdelávací program pre 2. stupeň ZŠ. Človek a príroda. Chémia. http://www.statpedu.sk/files/articles/dokumenty/inovovany-statny-vzdelavaci-program/ chemia nsv 2014.pdf

4. Inovovaný štátny vzdelávací program pre gymnázia so štvorročným a päťročným vzdelávacím programom. Človek a príroda. Chémia.

http://www.statpedu.sk/files/articles/dokumenty/inovovany-statny-vzdelavaci-program/ chemia_g_4_5_r.pdf

5. Učebnice chémie pre základné školy a gymnáziá.

6. KIREŠ, M., JEŠKOVÁ, Z., GANAJOVÁ, M., KIMÁKOVÁ, K.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť A. Bratislava: ŠPÚ, 2016.

http://www.statpedu.sk/files/articles/nove_dokumenty/ucebnice-metodiky-publikacie/badatelske-aktivity/01cast_a_web.pdf

7. GANAJOVÁ, M., KRISTOFOVÁ, M.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť B. Ukážky vytvorených metodických a pracovných materiálov z predmetu Chémia. Bratislava: ŠPÚ, 2016.

http://www.statpedu.sk/files/articles/nove_dokumenty/ucebnice-metodiky-publikacie/badatelske-aktivity/04cast_b_chemia_web.pdf

8. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre základné školy. Bratislava: CVTI SR, 2020.

https://vzdelavanie.itakademia.sk/vystupy/zim-che-zs.pdf

9. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre stredné školy. Bratislava: CVTI SR, 2020. https://vzdelavanie.itakademia.sk/vystupy/zim-che-ss.pdf

10. GANAJOVÁ a kol.: Rozvíjanie kompetencií žiakov prostredníctvom učebných úloh z chémie. Bratislava: ŠPÚ, 2018. https://www.statpedu.sk/files/sk/publikacna-cinnost/publikacie/ spu-chemia-2018-web.pdf

11. Školský informačný systém. Chémia. http://kekule.science.upjs.sk/chemia/index.htm 12. GANAJOVÁ, M. KALAFUTOVÁ, J. a kol.: Projektové vyučovanie v chémii. Didaktická príručka pre učiteľov základných škôl. Bratislava: Štátny pedagogický ústav, 2010. 144 s. ISBN 978-80-8118-058-3.

13. E – learning kurz: Aktivizujúce metódy výučby chémie (ÚCHV/AMCU/15), https://lms.upjs.sk/

Course language:

Notes:

Total number of assessed students: 48

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

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.

Date of last modification: 25.10.2021

University I. J. Salarik University in Kusice	University:	P. J.	Šafárik	University	in Košice
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Faculty: Faculty of Science

Course ID: ÚINF/	Course name: Administration of OS
AOS1/15	

Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28

Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 1., 3.

Course level: I., II., N

Prerequisities:

Conditions for course completion:

The condition for passing the course is successful realization of a project focused on the network services configuration.

Learning outcomes:

The result of the education is an understanding of the theoretical and practical background of Windows and Linux operating systems and selected network services.

Brief outline of the course:

1. Management of Linux operating system (basic system tools for troubleshooting, system startup, network configuration), 2. File systems (general view), 3. File systems (RAID, LVM), 4. Web hosting services I. (basic concept, APACHE), 5. Web hosting services II. (SQL, HTTPS, security, NGINX), 6. File services I. (SAMBA, NFS), 7. File services II. (FTP), 8. Management of local computer network I. (routing, DHCP), 9. Management of local computer network II. (firewall), 10. VPN, 11. SSH and Proxy, 12. Kernel of the Linux operating system, 13. Administration of the Windows operating system.

Recommended literature:

1. LPIC-1 Exam 102. LPI [online]. Canada: The Linux Professional Institute, 2021 [cit. 2021-9-22]. Dostupné z: https://learning.lpi.org/en/learning-materials/102-500/, 2. Linux - Dokumentační projekt [online]. 4. Praha: Computer Press, 2007 [cit. 2021-9-22]. Dostupné z: https://i.iinfo.cz/files/root/k/LDP_4.pdf, 3. The LPIC2 Exam Prep [online]. Sue B.V. - Open Sourced, 2021 [cit. 2021-9-26]. Dostupné z: https://lpic2book.github.io/src/

Course language:

Slovak or English

Notes:

Content prerequisites: understanding of fundamental concepts of operating systems, computer networks, basic skill in Linux shell (e.g. bash) and Powershell.

Course assessment Total number of assessed students: 35							
A B C D E FX							
60.0 20.0 11.43 0.0 8.57 0.0							
Provides: doc. RNDr. JUDr. Pavol Sokol, PhD., RNDr. Tomáš Bajtoš							
Date of last modification: 26.09.2021							
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.							

rik University in Košice
cience
Course name: Basic Toxicology
nd the method: e / Practice rse-load (hours): study period: 28 / 14 sent
edits: 5
ster/trimester of the course: 1.
e completion:
nts will learn how important it is in a teacher's job to know the toxicity properties of the substances they work with. They will gain knowledge pecific and systemic toxicity of substances, they will get acquainted with the biotics and with the methods of their effect and possible identification. niliar with the risks involved in working with a given chemical, from simple . The very important knowledge that will be the result of education is that they rk and how to handle dangerous substances and ways to protect themselves in working with these substances is intended. If education is also the knowledge of current Slovak and European chemical lynamic and changes depending on new knowledge in the field of xenobiotic
ypes of toxic substances, types of exposure, dose-response relationship. compounds (absorption, distribution, excretion of toxic compounds). compounds. Drugs as toxic substances, food additives and contaminants, ans. Statement of chemistry laboratory policy. Safe and handling of toxic
ture: meine Toxikologie fuer Chemiker, Teubner Verlag, Stutgart 1984. rbe: Ecotoxicology in Theory and Practice, Chapman&Hall, London 1994. uction to Toxicology, Taylor&Francis, London 1994. orth: Fundamental toxicology, RSC Publishing, Cambridge, 2006.

Course language:

Notes:

Course assessment Total number of assessed students: 325							
A B C D E FX							
21.23 28.0 24.92 17.23 7.38 1.23							
Provides: RNDr. Miroslava Matiková Maľarová, PhD.							
Date of last modification: 21.06.2022							
Approved: prot Stanislav Krajči	f. PhDr. Ol'ga Oro i, PhD.	osová, CSc., doc.	RNDr. Mária G	anajová, CSc., pi	rof. RNDr.		

University: P. J	. Šafárik Univers	sity in Košice					
Faculty: Faculty	y of Science						
Course ID: ÚC BTC/03	D: ÚCHV/ Course name: Biotechnology						
Course type, sc Course type: 1 Recommended Per week: 3 Pe Course metho	Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present						
Number of EC	FS credits: 5						
Recommended	semester/trime	ster of the cours	e: 2.				
Course level: II	•						
Prerequisities:							
Conditions for Written test, fro	course complet om which the stu	ion: dent must obtain	at least 51%.				
Learning outco Students will ha agriculture, foo	mes: we knowledge of d production and	basic biotechnol medicine.	ogical processes	and their applicat	ions in industry,		
Classification of The fermentation and substrates biogas, in-vessed preparation, iso fermentation, sp membrane bior	Brief outline of the course: Classification of biotechnology, disciplines and subjects which are involved with biotechnology. The fermentation processes, types of bioreactors, impellers, principles of microbial growth, media and substrates for fermentation processes. The bioremediation, production and application of biogas, in-vessel composting. Micro-organisms used to preparation amino acids, their fermentation preparation, isolation and possible uses. The methods of classical Plant Biotechnology. Ethanol fermentation, spirits, production of wine and beer. The biological filters, nutrient removal and the membrane bioreactors. Antibiotics						
Recommended literature: E.M.T. El-Mansi et al. ,Fermentation microbiology ang biotechnology,second edition, 2007 Y.H. Hui, Food biochemistry & food processing,Blackwell Publishing 2006 J.E. Smith, Biotechnology, Cambridge university press 2009							
Course languag	ge:						
Notes:							
Course assessm Total number of	ent f assessed studer	nts: 118					
А	В	С	D	Е	FX		
50.85	19.49	16.95	7.63	5.08	0.0		
Provides: RND	r. Danica Sabolo	vá, PhD.		•			
Date of last mo	dification: 17.0	8.2022		-			

University:	P. J. Šafárik	University in	n Košice				
Faculty: Fa	culty of Scie	ence					
Course ID: ZCVU/04	ÚCHV/ C	ourse name:	Chemical E	ngineering			
Course typ Course ty Recomme Per week: Course me	e, scope and pe: Lecture / nded course 2 / 1 Per stu ethod: prese	the method Practice -load (hours idy period: 2 nt	: 5): 28 / 14				
Recommen	ded semeste	er/trimester	of the course	e: 2 4			
Course leve	el: I., II., III.						
Prerequisit	ies:						
Conditions	for course of	completion:					
Learning o	utcomes:						
General an and holdin manufactur Silicate ind	d Inorganic g; Chemical e (H2SO4, H ustry – ceme	Engineering; reactors; Cl INO3, HCl, F ent manufactu	Mineral raw hemical met IF, H3PO4); ire, ceramics	v materials; allurgy – Fe Industrial el ; Petrochem	Raw materia e, Al, Cu w lectrochemist istry	Ils processin orking; Inor try; Industria	g, transport ganic acids ll fertilizers;
Recommen	ded literatu	re:					
Course lan	guage:						
Notes:							
Course ass Total numb	essment er of assesse	d students: 2	2				
А	В	C	D	Е	FX	N	Р
22.73	54.55	13.64	4.55	0.0	0.0	0.0	4.55
Provides: d	oc. RNDr. Z	uzana Vargov	vá, Ph.D.			·	
Date of last	modificatio	on: 21.01.202	22				
Approved: Stanislav K	prof. PhDr. (rajči, PhD.	Oľga Orosov	á, CSc., doc.	RNDr. Már	ia Ganajová,	CSc., prof.	RNDr.

University: P. J.	. Šafárik Univers	ity in Košice				
Faculty: Faculty	y of Science					
Course ID: ÚC CHE2/03	HV/ Course na	Course name: Chemical Excursion				
Course type, sc Course type: H Recommended Per week: Per Course metho	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 1t Course method: present					
Recommended	semester/trime	ster of the cours	e• ?			
Course level. II			U • 2.			
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	Briaf autling of the course:					
Recommended	literature:					
Course languag	Course language.					
Notes:	<u> </u>					
Course assessm Total number of	lent f assessed studen	ts: 109				
А	В	С	D	Е	FX	
87.16	12.84	0.0	0.0	0.0	0.0	
Provides: doc. RNDr. Zuzana Vargová, Ph.D.						
Date of last modification: 28.10.2021						
Approved: prof Stanislav Krajči	ř. PhDr. Oľga Or , PhD.	osová, CSc., doc.	RNDr. Mária G	anajová, CSc., pi	of. RNDr.	

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	of Science					
Course ID: ÚCH MSSU1/14	V/ Course na	Course name: Chemistry and Didactics of Chemistry I				
Course type, sco Course type: Recommended Per week: Per Course method	pe and the met course-load (he study period: : present	hod: ours):				
Number of ECT	S credits: 2					
Recommended s	emester/trimes	ter of the cours	e:			
Course level: II.						
Prerequisities: Ú	CHV/DCH1/15	and ÚCHV/VK	AU/04			
Conditions for c	ourse completi	on:				
Learning outcon	nes:					
Brief outline of t	he course:					
Recommended li	iterature:					
Course language) •					
Notes:						
Course assessme Total number of	ent assessed studen	ts: 115				
A	В	С	D	E	FX	
57.39	26.09	13.91	2.61	0.0	0.0	
Provides:						
Date of last mod	ification:					
Approved: prof. Stanislav Krajči,	PhDr. Ol'ga Orc PhD.	osová, CSc., doc.	RNDr. Mária G	anajová, CSc., pr	of. RNDr.	

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	of Science					
Course ID: ÚCH MSSU2/14	V/ Course na	Course name: Chemistry and Didactics of Chemistry II				
Course type, sco Course type: Recommended Per week: Per Course method	pe and the met course-load (he study period: : present	hod: ours):				
Number of EC I	S creatts: 2	ton of the cours				
Recommended s	emester/trimes	ter of the cours	e:			
Course level: II.						
Prerequisities: U	CHV/DCH2/15	and UCHV/VK	OCH/03			
Conditions for c	ourse completi	on:				
Learning outcon	nes:					
Brief outline of t	he course:					
Recommended li	iterature:					
Course language						
Notes:						
Course assessme Total number of	ent assessed studen	ts: 45				
A	В	С	D	Е	FX	
77.78	13.33	6.67	2.22	0.0	0.0	
Provides:	Provides:					
Date of last mod	ification: 08.02	.2022				
Approved: prof. Stanislav Krajči,	PhDr. Ol'ga Orc PhD.	osová, CSc., doc	. RNDr. Mária G	anajová, CSc., pr	of. RNDr.	

University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	Science			
Course ID: ÚINF/ KKV1/21	Course name: Classical and quantum computations			
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., 3.				
Course level: II., N				
Prerequisities:				
Conditions for course completion:				

Successful completion of the subject is conditioned by proper acquisition of basic concepts, algorithms and models and demonstrating the ability to apply them creatively. The acquisition of knowledge takes place:

- continuously during the semester in the form of partial assignments,
- a written test during the semester,
- a written test at the exam,
- oral exam.

In order to receive an evaluation, it is necessary to obtain at least 50% of points from each of the three parts (assignments during the semester, written part of the exam, oral part of the exam). The detailed evaluation method is published in the AIS.

Learning outcomes:

By completing the subject, the student will get:

- knowledge of the classification and design of probabilistic algorithms,

- basic knowledge of the principles of quantum computers and their differences compared to classical computing models,

- knowledge and skills about the design and functioning of quantum computing and become familiar with the most well-known algorithms,

= basic quantum computer programming skills.

Brief outline of the course:

1. Introduction to quantum quantum computers. Basics of classical complexity theory.

- 2. Boolean circuits and their basic properties.
- 3. Probability algorithms.
- 4. BPP class and probability testing.
- 5. Basic properties of circuits and Fermat's test.
- 6. Miller Rabin's test and the position of the BPP class in the hierarchy of complexity models.
- 7. Introduction to quantum computing and mathematical foundations of quantum theory.
- 8. Spectral representation of self-adjoint operators.
- 9. Quantum states and Hilbert vector spaces.
- 10. Basic quantum operators and basic quantum algorithms.

- 11. Quantum teleportation, superdense coding and Grover's algorithm.
- 12. Fourier transformation.
- 13. Shor's algorithm.

Recommended literature:

1. BERMAN,G.P., DOOLEN,G.D., MAINIERI, R., TSIFRINOVIC, V.I. Introduction to Quantum Computers. World Scientific, 2003.

2. GRUSKA, J. Quantum Computing. McGraw-Hill, 1999.

3. JOHNSON, G. A Shortcut Through Time: The Path to the Quantum Computer, Knopf 2003.

4. KITAEV, A.Y., SHEN, A.H., VYALYI, M.N. Classical and Quantum Computation. American Mathematical Society, 2002.

5. NIELSEN, M.A., CHUANG, I.L. Quantum Computation and Quantum Information.

Cambridge University Press, 2000.

6. HIRVENSALO, M., Quantum Computing, Springer 2004

Course language:

Slovak or english

Notes:

Content prerequisites:

Linear algebra, Group theory, Probability theory, Theory of algorithms, Introduction to quantum computers.

Course assessment

Total number of assessed students: 83

А	В	С	D	Е	FX
26.51	40.96	15.66	4.82	2.41	9.64

Provides: prof. RNDr. Gabriel Semanišin, PhD., RNDr. Marek Semjan

Date of last modification: 25.07.2022

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: CJP/ PFAJKKA/07Course name: Communicative Competence in English				
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined_present				
Number of ECTS credits: 2				
Recommended semester/trimester of the course:				
Course level: I., II., N				
Prerequisities:				
Conditions for course completion: Active participation in class and completed homework assignments. Students are allowed to miss two classes at the most. 2 credit tests (presumably in weeks 6/7 and 12/13) and an oral presentation in English. Final evaluation consists of the scores obtained for the 2 tests (50%) and the presentation (50%). Final grade will be calculated as follows: A 93-100 %, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64 % and less.				
Learning outcomes:				
Brief outline of the course:				
 Recommended literature: www.bbclearningenglish.com Štěpánek, Libor a kol. Academic English-Akademická angličtina. Praha: Grada Publishing, a.s., 2011. McCarthy M., O'Dell F.: English Vocabulary in Use, Upper-Intermediate. CUP, 1994. Fictumova J., Ceccarelli J., Long T.: Angličtina, konverzace pro pokročilé. Barrister and Principal, 2008. Peters S., Gráf T.: Time to practise. Polyglot, 2007. Jones L.: Communicative Grammar Practice. CUP, 1985. 				
Course language: English language, B2 level according to CEFR				
Notes:				
Course assessment Total number of assessed students: 289				
A B C D E FX				
44.64 20.76 17.65 7.96 6.23 2.77				
Provides: Mgr. Barbara Mitríková, Mgr. Viktória Mária Slovenská				
Date of last modification: 12.02.2023				

University: P. J. Šafár	rik University in Košice
Faculty: Faculty of S	cience
Course ID: CJP/ PFAJGA/07	Course name: Communicative Grammar in English
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: cor	nd the method: ce rse-load (hours): dy period: 28 mbined, present
Number of ECTS cro	edits: 2
Recommended seme	ster/trimester of the course:
Course level: I., II., N	1
Prerequisities:	
Conditions for cours Active classroom part by given deadlines. Powerpoint presentat Final Test - end of set Final assessment = av Grading scale: A 93-	e completion: ticipation (maximum 2 absences tolerated), homework assignments completed ion of a topic related to the study field. mester, no retake verage of test and presentation. 100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less
Learning outcomes: The development of s of their communica phonological, lexical efectively use the lan level B2.	students' language skills - reading, writing, listening, speaking, improvement ative linguistic competence. Students acquire knowledge of selected and syntactic aspects, development of pragmatic competence. Students can guage for a given purpose, with focus on Academic English and English on
Brief outline of the c Selected aspects of E Word formation Contrast of tenses in The passive voice Types of Conditional Phrasal verbs and En Words order and colle	ourse: nglish grammar and pronunciation English s glish idioms ocations, prepositional phrases
Recommended litera Vince M.: Macmillan McCarthy, O'Dell: Er www.linguahouse.con esllibrary.com bbclearningenglish.co ted.com/talks Course language:	a Grammar in Context, Macmillan, 2008 nglish Vocabulary in Use, CUP, 1994 m

	English language, level B2 according to CEFR.
Notes:	Notes:

Course assessment Total number of assessed students: 432					
А	В	С	D	Е	FX
39.81	19.91	16.2	8.1	5.79	10.19
Provides: Mgr. Lenka Klimčáková					
Date of last modification: 13.09.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: KGER/ NJKG/07	Course name: Communicative Grammar in German Language
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 credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:

Active participation in class and completed homework assignments. Students are allowed to miss 2 classes at the most (2x90 min.). 2 control tests during the semester. Final grade will be calculated as follows: A 93-100 %, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64 % and less.

Learning outcomes:

The aim of the course is to identify and eliminate the most frequent grammatical errors in oral and written communication, learning language skills of listening comprehension, speaking, reading and writing, increasing students 'language competence (acquisition of selected phonological, lexical and syntactic knowledge), development of students' pragmatic competence (acquisition of the ability to express selected language functions), development of presentation skills, etc.

Brief outline of the course:

The course is aimed at practicing and consolidating knowledge of morphology and syntax of German in order to show the context in grammar as a whole. The course is intended for students who often make grammatical errors in oral as well as written communication. Through the analysis of texts, audio recordings, tests, grammar exercises, monologic and dialogical expressions of students focused on specific grammatical structures, problematic cases are solved individually and in groups. Emphasis is placed on the balanced development of grammatical thinking in the communication process, which ultimately contributes to the development of all four language skills.

Recommended literature:

Dreyer, H. – Schmitt, R.: Lehr- und Übungsbuch der deutschen Grammatik. Hueber Verlag GmbH & Co. Ismaning, 2009.

Krüger, M.: Motive Kursbuch, Lektion 1 – 30. Huebert Verlag GmbH & Co. Ismaning, 2020. Brill, L.M. – Techmer, M.: Deutsch. Großes Übungsbuch. Wortschatz. Huebert Verlag GmbH & Co. Ismaning, 2011.

Földeak, Hans: Sag's besser!. Grammatik. Arbeitsbuch für Fortgeschrittene. Huebert Verlag GmbH & Co. Ismaning, 2001.

Geiger, S. – Dinsel, S.: Deutsch Übungsbuch Grammatik A2-B2. Huebert Verlag GmbH & Co. Ismaning, 2018.

Dittelová, E. – Zavatčanová, M.: Einführung in das Studium der deutschen Fachsprache. Košice: ES UPJŠ, 2000.

Course langua German, Slova	ge: k language					
Notes:						
Course assessn Total number o	nent f assessed studen	ts: 56				
А	В	С	D	Е	FX	
60.71	10.71	8.93	3.57	8.93	7.14	
Provides: Mgr.	Ulrika Strömplov	vá, PhD.	·	•		
Date of last modification: 12.07.2022						
Approved: pro Stanislav Krajči	f. PhDr. Ol'ga Oro i, PhD.	osová, CSc., doc	. RNDr. Mária G	anajová, CSc., pi	cof. RNDr.	

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚINF/ VKN/15	Course name: Computational and cognitive neuroscience II
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 28 esent
Number of ECTS cr	edits: 5
Recommended seme	ster/trimester of the course:
Course level: II., N	
Prerequisities:	
Conditions for cours Midterm exam Final exam consisting	g of written and/or oral part
Learning outcomes: Advanced topics in neuroscience.	computational and cognitive neuroscience, and in the tools used in
Brief outline of the c 1. Intro: Cognitive ps Theme 1: Topics in c 2. Neural basis of vis 3. Visual object recog 4. Auditory cognition 5. Cortical sound pro 6. Other topics in the Topic 2: Modeling in 7. Intro 8. Connectionism, ST 9. Additive and shum 10. Learning rule Ou 11. Adaptive resonan 12. Statistical and der Topic 3: Current rese 13. Invited lecture	ourse: sychology, neural modeling. ognitive and neural science ion gnition and visual scene analysis n. Echo suppression. Auditory scene analysis cessing. study of brain and main: thinking, consciousness, emotions, motivation cognitive and neural science I'M and LTM modeling ting neural networks. tstar. ice theory. cision-theory modeling arch at UPJS
Recommended litera 1. KANDEL, E. R., S McGraw-Hill, 2021 I 2. Dayan P and LF A Modeling of Neural S 3. Thagard P: Mind: 978-0262701099	Ature: SCHWARTZ, J. H. and JESSELL, T.M.: Principles of Neural Science. SBN-13: 978-1259642234 bbott: Theoretical Neuroscience - Computational and Mathematical Systems. MIT Press, 2005 ISBN-13: 978-0262541855 Introduction to Cognitive Science, 2nd Edition. Bradford Books. ISBN-13 :

978-0262701099

4. HERTZ, J., KROGH, A. and PALMER R. G.: Introduction to the theory of neural computation. Addison-Wesley 1991 ISBN-13: 978-0201515602

Course language:

Slovak or English

Notes:

Content prerequisites:

basics of neurobiology, cognitive psychology, linear algebra and differential equations, programing, or instructor's consent

Course assessment

Total number of assessed students: 9

А	В	С	D	Е	FX
44.44	11.11	22.22	11.11	11.11	0.0

Provides: doc. Ing. Norbert Kopčo, PhD., RNDr. Keerthi Kumar Doreswamy, Ing. Udbhav Singhal, Mgr. Ondrej Spišák

Date of last modification: 08.01.2022

	COURSE INFORMATION LETTER
University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚINF/ VYZ1/15	Course name: Computational complexity
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 cr	edits: 4
Recommended seme	ster/trimester of the course: 3.
Course level: II., N	
Prerequisities:	
Conditions for cours Oral examination.	e completion:
Learning outcomes: To give students the completeness.	neoretical background in computational complexity and theory of NP-
Brief outline of the c 1: Introduction: the ne example - the problem 2: Basic computation these computers, sing of these computation complexity 3: The classes P and - the set of all 3-colo - the set of satisfiable normal form 4: Variants of P and N polynomial conversion 5: NP-completeness:	ourse: ption of computational complexity, computational time, computational model, n of sorting, computational complexity as an asymptotic function nal models: RAM and RASP computers, the cost of an elementary step on le-tape Turing machine, multi-tape Turing machine, nondeterministic variants nal models, transformations among these models with respect to the time NP: basic definitions, presenting (un)undirected graphs on the input, 3COL prable graphs is in NP, 2COL - the set of all 2-colorable graphs is in P, SAT le Boolean formulas is in NP, CNF-SAT - Boolean formulas in conjunctive IP: decision problem, the problem of finding a solution, optimization problem, ons among different variants reducibility in polynomial time and its transitivity, definition of the NP-
completeness and its 6: NP-completeness of 7: Variants of SAT: 3 kCNF-SAT, CNF-SA	basic properties of SAT CNF-SAT - satisfiability of Boolean formulas in 3-conjunctive normal form, T - satisfiability in k-conjunctive (conjunctive) normal form, 2CNF-SAT is

in P

8: 3COL and its variants: 3COL (the problem of coloring vertices of a graph with 3 colors) in NP-complete, consequently: for each k>3, kCOL (the problem of coloring with k colors) is NPcomplete as well

9: Colorability of a planar graph with three colors: presenting a planar graph on the input, the proof of NP-completeness, coloring with a larger number of colors

10: Another NP-complete problems: Exact set cover, Clique, Vertex cover

11: Hamiltonian path: Hamiltonian path in a directed and in undirected graph

12: Subset-sum-like problems: Subset Sum - the problem of whether any subset of the integers sum to precisely a target sum, Partition - the problem of whether a given multiset of positive integers can be partitioned into two subsets with equal sums, a "more relaxed" version of Partition - achieving an approximate equality of the sums, distribution of tasks among K parallel processors

13: Beyond P a NP: a review of the basic complexity classes - L, NL, P, NP, PSpace, NPSpace, ExpTime, NExpTime, ..., simulation of (non)deterministic space in (non)deterministic time, conversions in opposite directions

14: PSpace: QBF - true quantified Boolean formulas, prenex normal form, Pspace completeness of QBF, PSpace = NPSpace

Recommended literature:

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

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

3. L.A.Hemaspaandra, M.Ogihara: Complexity theory companion, EATCS series, texts in computer science, Springer-Verlag, 2002.

4. S. Arora, B. Barak: Computational Complexity: A Modern Approach, Cambridge Univ. Pess, 2009. 5. G.Brassard, P.Bradley: Fundamentals of algorithmics, Prentice Hall, 1996.

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

7. C. Calude and J. Hromkovič: Complexity: A Language-Theoretic Point of View, in G.

Rozenberg and A. Salomaa, Handbook of Formal Languages II, Springer, 1997.

Course language:

Slovak or english

Notes:

Content prerequisities:

Basic notions from the theory of automata and formal languages.

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

Course assessment

Total number of assessed students: 357

А	В	С	D	Е	FX
57.7	15.41	12.04	7.28	7.28	0.28

Provides: prof. RNDr. Viliam Geffert, DrSc.

Date of last modification: 23.11.2021

University: P. J	University: P. J. Šafárik University in Košice						
Faculty: Facult	Faculty: Faculty of Science						
Course ID: ÚIN MSSUI/15	NF/ Course n	Course name: Computer science and didactics of informatics					
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present							
Recommended	somester/trime	estar of the cours	<u>م</u>				
Course level· II							
Prerequisities: ÚINF/UNS1/15	Prerequisities: ÚINF/DIN1b/15 and ÚINF/TIK1/22 and (ÚINF/UGR1/15 or ÚINF/KKV1/21 or ÚINF/UNS1/15 or ÚINF/FO1/15)						
Conditions for	course comple	tion:					
Learning outco	omes:						
Brief outline of	the course:						
Recommended	literature:						
Course languag	ge:						
Notes:							
Course assessment Total number of assessed students: 15							
А	В	C	D	Е	FX		
46.67	20.0	20.0	6.67	6.67	0.0		
Provides:	Provides:						
Date of last mo	dification: 24.0	4.2017					
Approved: prof Stanislav Krajči	Approved: prof. PhDr. Oľga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.						

University: P. J. Šafán	rik University in Košice
Faculty: Faculty of So	cience
Course ID: ÚINF/ MPPc/15	Course name: Continuous practice teaching I
Course type, scope an Course type: Practic Recommended cour Per week: Per stud Course method: pre	nd the method: ce rse-load (hours): y period: 4t sent
Number of ECTS cre	edits: 2
Recommended semes	ster/trimester of the course: 3.
Course level: II.	
Prerequisities: ÚINF	/MPPb/15
Conditions for course Conditions for ongoin 1. Observations in 6 h 2. Independent leadin 3. Participation in ana 4. Active participation Conditions for the fin 1. Submission of 6 ob 2. Submission of a lis 4. Submission of a lis 4. Submission of a rep 6. Submission of a fee Conditions for succes Fulfillment of all ong	e completion: ng evaluation: essons of the subject of informatics. g of 18 lessons of the subject informatics. hlyzes from 20 lessons with a teacher trainer. n in out-of-class and after-school activities. al evaluation: oservation records from lessons. esson projects of preparation for lessons. t of observations and own lesson of the trainee. valuation of the trainee's teaching practice. port on the continuous pedagogical practice. edback sheet from the continuous pedagogical practice. sful completion of the course: oing and final assignments.
Learning outcomes: Under the professiona pedagogical skills in of-class and after-sch	al supervision of an experienced teacher trainer, the student acquires practical teaching the subject of informatics. He gets acquainted with school life, out- ool activities activities.
Brief outline of the co Observations of teach aids, leading own less out-of-class and after-	ourse: er trainer lessons, consultations of lesson preparations, preparation of teaching sons, methodological and scientific analysis of lessons, active participation in -school activities.

Recommended literature:

KOSOVÁ, Beata, Alena TOMENGOVÁ et al., 2015. Profesijná praktická príprava budúcich učiteľov [online]. Banská Bystrica: Vydavateľstvo Belianum, Univerzita Mateja Bela, Banská Bystrica, 226 pp. [cited. 2021-7-28]. ISBN 978-80-557-0860-7. Available from: https://publikacie.umb.sk/publication/publicationFileDownload.php?ID=18667

OROSOVÁ, Renáta and Zuzana BOBEROVÁ, 2016. Pregraduálna príprava učiteľov: Organizácia pedagogickej praxe na UPJŠ [online]. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 142 pp. [cited 2021-7-28]. ISBN 978-80-8152-460-8. Available from: https://unibook.upjs.sk/sk/pedagogika/342-pregradualna-priprava-ucitelov-organizacia-pedagogickej-praxe-na-upjs

BOBEROVÁ, Zuzana, 2017. Začínajúci učiteľ a školská legislatíva I. [online]. Košice:

Univerzita Pavla Jozefa Šafárika v Košiciach, 104 pp. [cited 2021-7-28]. ISBN

978-80-8152-490-5. Available from: https://unibook.upjs.sk/sk/pedagogika/398-zacinajuci-ucitel-a-skolska-legislativa-i

Current informatics textbooks for primary and secondary schools in Slovakia.

Course language:

Slovak

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 16

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 04.08.2021

University: P. J. Safarik Un	iversity in	Kosice
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Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Continuous practice teaching I
MPPc/15	

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 credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚCHV/MPPb/15 and ÚCHV/DCH1/22 or ÚCHV/DCH1/15

Conditions for course completion:

- 1. Compulsory attendance during the organisational and informational seminar.
- 2. Compulsory attendance: sitting in on classes, analytical classes at training schools.
- 3. Sitting in on classes and analytical classes with supervising teachers -6x.
- 4. Teaching classes and analytical classes under supervision 18x.
- 5. Submitted Continued practice teaching (CPT) I documentation.

(Sitting-in records, Written class preparations, List of sitting-in sessions and trainee's performance during CPT I, CPT I report, Assessment of the trainee's pedagogical performance during CPT).

Learning outcomes:

The student can plan lessons and teach them. Present their own psychodidactic and subject-specific didactic concepts of teaching in the environment of a real school classroom. Apply the didactic skills developed during the previous observation of teaching in practice to teach chemistry. Evaluate one's own lesson project and professional competence level (areas: student, educational process, professional development) in terms of pedagogic theory and assessment provided by the supervising teacher.

Brief outline of the course:

Observation and analysis of chemistry lessons and teaching under the supervision of the supervising teacher. Written class preparation and teaching, active participation in extracurricular activities. Didactic Continued practice teaching I analysis.

Recommended literature:

Current chemistry textbooks for primary and secondary schools in the Slovak Republic.

Course language:

Notes:

Course assessment

Total number of assessed students: 152

abs	n
100.0	0.0

Provides: RNDr. Ivana Sotáková, Ph.D., doc. RNDr. Mária Ganajová, CSc.

Date of last modification: 26.10.2021

University	Р	ТŠ	Šafárik	Univer	sity	in	Košice
University.	1.	J. K	Jararik	Univers	sity	III .	RUSICC

Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Continuous practice teaching II
MPPd/15	

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 credits: 2

Recommended semester/trimester of the course: 4.

Course level: II.

Prerequisities: ÚCHV/MPPc/15 and ÚCHV/DCH2/22

Conditions for course completion:

- 1. Compulsory attendance during the organisational and informational seminar.
- 2. Compulsory attendance: sitting in on classes, analytical classes at training schools.
- 3. Complete 8 lessons: sitting in on classes and analytical classes with supervising teachers.
- 4. Teaching classes and analytical classes under supervision -30x.
- 5. Submit Continued practice teaching (CPT) II documentation.

(Trainee's sitting-in and teaching schedule, Sitting-in records, Written class preparations, List of sitting-in sessions and trainee's performance during CPT II, CPT II report, Assessment of the trainee's pedagogical performance during CPT).

Learning outcomes:

The student can plan a series of lessons and other forms of instruction and teach them continually. Apply the pedagogic as well as subject-specific theory in practical teaching. Apply the didactic skills developed during the previous teaching practice completed in the actual educational environment. Evaluate one's own lesson project and professional competence level (areas: student, educational process, professional development) in terms of pedagogic theory and evaluation provided by the supervising teacher.

Brief outline of the course:

Observation and analysis of chemistry lessons and teaching under supervision. Written class preparation and teaching, active participation in extracurricular activities. Didactic Continued practice teaching (CPT) II analysis.

Recommended literature:

Current chemistry textbooks for primary and secondary schools in the Slovak Republic.

Course language:

Notes:

Course assessment Total number of assessed students: 131		
abs	n	
100.0	0.0	
Provides: RNDr. Ivana Sotáková, Ph.D., doc. RNDr. Mária Ganajová, CSc.		
Date of last modification: 17.11.2021		
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.		
University: P. J. Sala	rik University in Košice	
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Faculty: Faculty of S	cience	
Course ID: ÚINF/ MPPd/15	Course name: Continuous practice teaching II	
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	ind 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: ÚINF	5/MPPc/15	
 Observations in 8 I Independent leadir Participation in ana Active participatio Conditions for the fir Submission of 8 ol Submission of 30 I Submission of a lis Submission of a re Submission of a re Submission of a fe Conditions for succes Fulfillment of all ong 	lessons of the subject of informatics. Ig of 30 lessons of the subject informatics. alyzes from 30 lessons with a teacher trainer. In in out-of-class and after-school activities. In al evaluation: bservation records from lessons. lesson projects of preparation for lessons. It of observations and own lesson of the trainee. evaluation of the trainee's teaching practice. Export on the continuous pedagogical practice. Export of the continuous pedagogic	
Learning outcomes: Under the profession pedagogical skills in of-class and after-sch	al supervision of an experienced teacher trainer, the student acquires practical teaching the subject of informatics. He gets acquainted with school life, out- nool activities activities.	
Brief outline of the c Observations of teach	course: her trainer lessons, consultations of lesson preparations, preparation of teaching	

KOSOVÁ, Beata, Alena TOMENGOVÁ et al., 2015. Profesijná praktická príprava budúcich učiteľov [online]. Banská Bystrica: Vydavateľstvo Belianum, Univerzita Mateja Bela, Banská Bystrica, 226 pp. [cited. 2021-7-28]. ISBN 978-80-557-0860-7. Available from: https://publikacie.umb.sk/publication/publicationFileDownload.php?ID=18667

OROSOVÁ, Renáta and Zuzana BOBEROVÁ, 2016. Pregraduálna príprava učiteľov: Organizácia pedagogickej praxe na UPJŠ [online]. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 142 pp. [cited 2021-7-28]. ISBN 978-80-8152-460-8. Available from: https:// unibook.upjs.sk/sk/pedagogika/342-pregradualna-priprava-ucitelov-organizacia-pedagogickejpraxe-na-upjs

BOBEROVÁ, Zuzana, 2017. Začínajúci učiteľ a školská legislatíva I. [online]. Košice:

Univerzita Pavla Jozefa Šafárika v Košiciach, 104 pp. [cited 2021-7-28]. ISBN

978-80-8152-490-5. Available from: https://unibook.upjs.sk/sk/pedagogika/398-zacinajuci-ucitel-a-skolska-legislativa-i

Current informatics textbooks for primary and secondary schools in Slovakia.

Course language:

Slovak

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 13

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 04.08.2021

COUDSE INFORMATION I FTTED

	COURSE INFORMATION LETTER
University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚCHV/ KC/03	Course name: Cosmetic chemistry
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: 4
Recommended seme	ster/trimester of the course: 3.
Course level: II.	
Prerequisities:	
Seminar written repo with the discussion. evaluated as follows: = D, 60-51% of point Learning outcomes: The basic chemical	ort on the selected topic of this subject and its oral presentation connected Terminal examination by the written form. The corresponding written part is 100-91% of points = A, 90-81% of points = B, 80-71% of points = C, 70-61% ts = E, 50% and less = FX. A student must obtain at least 51% of points.
construction of some industry.	interesting groups of the orgnaic structures and their application in cosmetic
Brief outline of the c Skin and its comport glycerophospholipids alcohols, natural and classification, organi (amino acids, peptid ingredients. The cher acid, their biosynthes	ourse: nents. The chemistry of lipids. Lipids, their classification (triacylglycerols, and sfingophoslipids), liposomes as transport systems. Fatty acids and synthetic waxes. Surfactants, their classification. Antioxidants. Dyes, their c and inorganic dyes, natural and synthetic. Biological active compounds des, proteins hydroxy acids, vitamins, polysaccharides) as the cosmetic mistry of fragrances. Compounds derived from shikimic acid and mevalonic dis, Synthetic fragrances and their construction.
Recommended litera 1. S. V. Bhat, B. A. N Narosa 2005, ISBN 8 2. G. Ohloff: Scent an 3-540-57108-6. 3. D. H. Pybus, CH. S	I ture: Iagasampagi, M. Sivakumar: Chemistry of Natural Products, Springer 31-7319-481-5. nd Fragrances, Springer-Verlag Berlín Heidelberg 1994, ISBN S. Sell: The chemistry of fragrances, Royal Society of Chemistry 1999,

4. Pybus, D. H., Sell, C. S.: The chemistry of fragrances, The Royal Society of Chemistry 1999 UK, ISBN: 0-85404-528-7

5. J. McMurry: Organic chemistry, Brooks/Cole, a Thomson Learning Company 2004, Sixth Eddition, ISBN 0534389996.

Course language:

slovak, english

Notes:

Teaching is carried out in person or, if necessary, online using the BBB (BigBlueButton) tool. The form of teaching is specified by the teacher at the beginning of the semester, updated continuously.

Course assessment

Total number of assessed students: 86

А	В	С	D	Е	FX
79.07	15.12	4.65	1.16	0.0	0.0

Provides: doc. RNDr. Miroslava Martinková, PhD.

Date of last modification: 28.01.2022

University: P. J. Sala	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚINF/ ODPU/15	Course name: Defence of diploma thesis
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 cro	edits: 15
Recommended seme	ster/trimester of the course:
Course level: II.	
Prerequisities:	
Conditions for cours The diploma thesis is fraud and must meet 21/2021, which lays Košice and its comport and in the process of	e completion: the result of the student's own work. It must not show elements of academic the criteria of good research practice defined in the Rector's Decision no down the rules for assessing plagiarism at Pavol Jozef Šafárik University in nents. Fulfillment of the criteria is verified mainly in the process of supervision thesis defense. Failure to do so is reason for disciplinary action.
The diploma thesis defield of study, acquisis profile of the graduate selected field problem of content, formal and 1/2011 on the basic re the 1st, 2nd and comb	emonstrates mastery of extended theory and professional terminology of the ition of knowledge, skills and competencies in accordance with the declared e of the study program, as well as the ability to apply them creatively in solving ns. Student demonstrates the ability of independent professional work in terms d ethical. Further details on the diploma thesis are determined by Directive no equirements of final theses and the Study Regulations of UPJŠ in Košice for bined 1st and 2nd degree.
Brief outline of the c 1. Elaboration of the 2, Presentation of the 3. Answering questio	ourse: diploma thesis in accordance with the instructions of the supervisor. results of the diploma thesis before the examination commission. ons related to the topic of the diploma thesis within the discussion.
Recommended litera The recommended lit diploma thesis.	iture: cerature is determined individually in accordance with the topic of the
Course language.	- Frankal
Slovak and optionally	y English.

Course assessm Total number o	nent f assessed studen	ts: 11				
А	В	С	D	Е	FX	
45.45	9.09	45.45	0.0	0.0	0.0	
Provides:	•					
Date of last modification: 19.11.2021						
Approved: pro Stanislav Krajči	f. PhDr. Ol'ga Ore i, PhD.	osová, CSc., doc.	RNDr. Mária G	anajová, CSc., pr	of. RNDr.	

University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	Science			
Course ID: ÚINF/ TSM1a/15	Course name: Development and processing of multimedia			
Course type, scope a Course type: Practi Recommended cou Per week: 2 Per stu Course method: pro	and the method: ce irse-load (hours): idy period: 28 esent			
Number of ECTS cr	redits: 2			
Recommended seme	ester/trimester of the course: 1., 3.			
Course level: I., II.				
Prerequisities:				
Conditions for cours Conditions for ongoin 1. Creation of an edu 2. Creation of a poste 3. Creation of an edu 4. Creation of an inst Conditions for succe Obtaining at least 50	se completion: ing evaluation: acational animation. er with vector and raster graphics. acational audio recording. tructional educational video. essful completion of the course: % of points for ongoing assignments.			
Learning outcomes: After completing this a) deepen the knowle processing of multim b) create multimedia selected topics of sch c) analyze and discu informatics.	s course, students are able to: edge of the principles of multimedia and to practice skills in the creation and hedia, a teaching aids with accompanying methodological commentary for teaching hool informatics, ass the issue of teaching the creation and processing of multimedia in school			
Brief outline of the o 1. Digitization and p 2. Digitization and p 3. Creating animation 4. Creation of vector 5. Creation of vector 6. Creation of vector 7. 3D modeling and 8. 3D modeling and 9. Digitization and se 10. Digitization and 11. Digitization and 12. Digitization and	course: rocessing of raster image. rocessing of raster image. ns. graphics. graphics. graphics. printing printing ound processing. sound processing. video processing.			
Recommended litera	ature:			

LACHS, V., 2000. Making Multimedia in the Classroom. London : RoutledgeFalemer. ISBN 0415216842.

GÖBEL, S. et al., 2006. Technologies for Interactive Digital Storytelling and Entertainment (LNCS 4326). Darmstadt : Springer. ISBN 3540499342.

ADÁMEK, R. et al., 2010. Moderná didaktická technika v práci učiteľa. Elfa, s.r.o., Košice. ISBN 978-80-8086-135-3.

GUNIŠ, Ján, Ľudmila JAŠKOVÁ, Katarína MIKOLAJOVÁ and Jana PEKÁROVÁ, 2009. Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Multimédiá. Bratislava: Štátny pedagogický ústav, 52 p. ISBN 978-80-89225-51-4. Also available from: https://www.statpedu.sk/files/sk/o-organizacii/projekty/projekt-dvui/publikacie/ multimedia.pdf

ŠNAJDER, Ľubomír and Marián KIREŠ, 2005. Informatika pre stredné školy - Práca s multimédiami: tematický zošit. Bratislava: Slovenské pedagogické nakladateľstvo. ISBN 80-10-00422-7.

Course language:

Slovak and partly English due to selected programs and information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 19

А	В	С	D	Е	FX
52.63	21.05	15.79	5.26	5.26	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 24.08.2021

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚINF/ TSM1b/15	Course name: Development and processing of multimedia
Course type, scope a Course type: Practi Recommended cou Per week: 2 Per stu Course method: pro	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., 4.
Course level: II.	
Prerequisities:	
Conditions for cours Conditions for ongoi 1. Programmed SVG 2. Programmed anim 3. Programmed soun 4. Programmed mult Conditions for succe Obtaining at least 50	a completion: ng evaluation: image. ation. d or melody. imedia application. ssful completion of the course: % of points for ongoing assignments.
Learning outcomes: After completing this a) explain the basic p b) design and progra	course, students are able to: principles and procedures in multimedia programming, m multimedia applications.
Brief outline of the o 1. Programming of st 2. Programming of st 3. Programming of st 4. Programming of st 5. Animation program 6. Animation program 7. Animation program 8. Programming of st 9. Programming of st 10. Programming of 11. Creating a multim 12. Creating a multim	ourse: ill images. ill images. ill images. ill images. nming. nming. nming. punds and melodies. punds and melodies. sounds and melodies. nedia application.
Recommended liters SATHAYE, Ninad, 2 Publishing, ISPN 07	ature: 010. Python Multimedia: Beginner's Guide. Birmingham, UK: Packt

Publishing. ISBN 978-1-849510-16-5. GUNIŠ, Ján, Viera MICHALIČKOVÁ, Martin CÁPAY a Ľubomír ŠNAJDER, 2020. Riešenie problémov a programovanie [online]. Bratislava: Centrum vedecko-technických informácií SR [cited 2021-7-10]. ISBN 9788089965625. Available from: https://registracia.itakademia.sk/ media/themes/nip-rpp.pdf

BLAHO, Andrej, 2016. Programovanie v Pythone 1 (prednášky k predmetu Programovanie (1) 1-AIN-130/13) [online]. Bratislava: Knižničné a edičné centrum FMFI UK, 322 s. [cited 2021-7-10]. ISBN 978-80-8147-067-7. Available from: http://python.input.sk/

Course language:

Slovak and partly English due to selected programs and information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 6

А	В	С	D	Е	FX
16.67	66.67	16.67	0.0	0.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 24.08.2021

	COURSE INFORMATION LETTER
University: P. J. Šafár	ik University in Košice
Faculty: Faculty of So	cience
Course ID: ÚCHV/ DCH1/15	Course name: Didactics of Chemistry I
Course type, scope an Course type: Lecture Recommended cour Per week: 1 / 2 Per s Course method: pre	nd the method: e / Practice se-load (hours): study period: 14 / 28 sent
Number of ECTS cre	edits: 4
Recommended semes	ster/trimester of the course: 2.
Course level: II.	
Prerequisities: ÚCHV	7/SPC1a/03
1. Participations for course 1. Participations in set to participate in seminet.) for a maximum of case of a longer-term be assigned an alterna 2. Active participation students present assign assignments and a minet Topics of micro-outp LMS Moodle (direct H I (ÚCHV/DCH1/15). 3. The content of the submits to the course 4. The student must pr 5. Passing the exam: d in Slovakia and in act written form of the exa answers to the written exam – oral form throw The final assessment 1. Seminar work (0-20 2. Continuous assessmant 3. Final written test (0	e completion: minars (also applies to tohe online form of teaching). Students are required hars. The students can excuse themself (incapacity for work, family reasons, of two seminars during the semester without the need for replacement. In the justified absence (for example due to incapacity for work), the student will tive form of mastering the missed curriculum. n in class. Seminars are conducted in a form in which students are active – ments, which include worksheets. The student is obliged to prepare 2 written cro-output, which will be one of the conditions for participation in the exam. uts as well as requirements will be available through the e-learning portal ink to the website: https://lms.upjs.sk/) in the course Didactics of Chemistry eseminars also includes assignments of seminar papers, which the student Didactics of Chemistry I (ÚCHV/DCH1/15). ass a continuous assessment in the form of a written exam twice a semester. listance form of the exam – written test: Due to the current pandemic situation cordance with the conditions of the Faculty of Science UPJŠ in Košice, a am is implemented through the Google Form application. Students fill in the n test. Test questions are always randomly generated. Distance form of the eugh a webinar. in the course consists of the sum of points obtained for: 0 points) nent (0-30 points) 0-20 points)

4. Oral exam (0-30 points)

Conditions for successful completion of the course:

In order to obtain an A rating, it is necessary to obtain at least 85 points in total, to obtain an B rating at least 75 points, to obtain a C rating at least 65 points, to obtain a D rating at least 55 points and to obtain an E rating at least 45 points.

Learning outcomes:

The student will acquire knowledge and necessary skills for the work of teachers in the field of didactics of general and inorganic chemistry. Can implement inquiry-based learning and digital tools in the teaching of topics from these fields of chemistry at primary school and grammar school with a focus on the use of videos, models, animations, simulations, interactive games and exercises (https://viki.iedu.sk/landing, https://phet.colorado.edu/sk/, https://www.olabs.edu.in/, https://studiumchemie.cz/). Expand your knowledge and skills on how to carry out demonstration experiments and projected experiments using a digital visualizer.

Brief outline of the course:

1. Introduction to didactics of chemistry. History of chemistry didactics and its current state. Teacher preparation for teaching (basic curricular documents: State educational program, school educational program, curricula, thematic educational plan, teacher preparation for a lesson).

- 2. Teaching aids in chemistry. Information and communication technologies in chemistry teaching.
- 3. School chemical experiment in chemistry teaching, demonstration and projected experiments.
- 4. Nomenclature of inorganic chemistry. Use of didactic games.
- 5. Didactics of the topic Matter, substance, mixture. Inquiry methods in teaching the topic Mixtures and separation of components of mixtures. Inquiry-based method in teaching chemistry.
- 6. Didactics of the topic Atom, its composition and structure.
- 7. Didactics of the topic Chemical bonding.

8. Didactics of the topic Periodic table of elements. Interactive periodic table of elements at the Institute of Chemistry Faculty of Science, P. J. Šafárik University in Košice.

9. Didactics of the topic Chemical process. Thermochemistry and Chemical Kinetics.

10. Didactics of the topic Chemical process. Types of chemical reactions. Practical use of redox events. Electrolysis. Galvanic cells. Inquiry activities, computer-based experiments and projected experiments using a digital visualizer on the topic of Chemical process.

11. Presentation of micro-outputs on assigned topics.

Recommended literature:

1. GANAJOVÁ, M.: Vybrané kapitoly zo všeobecnej didaktiky chémie. UPJŠ v Košiciach, Prírodovedecká fakulta, 2009, 141 s. ISBN 978-80-7097-756-9.

2. KIREŠ, M., JEŠKOVÁ, Z., GANAJOVÁ, M., KIMÁKOVÁ, K.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť A. Bratislava: ŠPÚ, 2016. ISBN 978-80-8118-155-9. https://www.statpedu.sk/files/articles/nove_dokumenty/ucebnice-metodiky-publikacie/ badatelske-aktivity/01cast_a_web.pdf

3. GANAJOVÁ, M., KRISTOFOVÁ, M.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť B. Ukážky vytvorených metodických a pracovných materiálov z predmetu Chémia. Bratislava: ŠPÚ, 2016. https://www.statpedu.sk/files/articles/nove_dokumenty/ucebnicemetodiky-publikacie/badatelske-aktivity/04cast b chemia web.pdf

4. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre základné školy. Doplnené vydanie. Bratislava: CVTI SR, 2021. ISBN 978-80-8240-007-9.

https://vzdelavanie.itakademia.sk/vystupy/zim-che-zs.pdf

5. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre stredné školy. Doplnené vydanie. Bratislava: CVTI Bratislava: CVTI SR, 2021. ISBN 978-80-8240-008-6.

https://vzdelavanie.itakademia.sk/vystupy/zim-che-ss.pdf

6. GANAJOVÁ, M.: Metodika tvorby učebných úloh a didaktických testov pre chémiu. Košice: UPJŠ, 2015. ISBN 978-80-8152-237-6. https://unibook.upjs.sk/sk/prirodovedecka-fakulta/445-metodika-tvorby-ucebnych-uloh-a-didaktickych-testov-pre-chemiu

7. GANAJOVÁ a kol.: Rozvíjanie kompetencií žiakov prostredníctvom učebných úloh z chémie. Bratislava: ŠPÚ, 2018. ISBN 978-80-8118-215-0. https://www.statpedu.sk/files/sk/publikacnacinnost/publikacie/spu-chemia-2018-web.pdf 8. GANAJOVÁ, M., BRESTENSKÁ, B., GUNIŠ, J., JEŠKOVÁ, Z., KIREŠ, M., LEŠKOVÁ, A., LUKÁČ, S., OROSOVÁ, R., SOTÁKOVÁ, I., SZARKA, K., ŠNAJDER, Ľ.: Formatívne hodnotenie vo výučbe prírodných vied, matematiky a informatiky. 1. vyd. UPJŠ v Košiciach, 2021, 450 s. ISBN 978-80-8152-973-3.

9. Inovovaný štátny vzdelávací program pre 2. stupeň ZŠ. Človek a príroda. Chémia. https://www.statpedu.sk/files/articles/dokumenty/inovovany-statny-vzdelavaci-program/ chemia nsv 2014.pdf

10. Inovovaný štátny vzdelávací program pre gymnázia so štvorročným a päťročným vzdelávacím programom. Človek a príroda. Chémia. https://www.statpedu.sk/files/articles/ dokumenty/inovovany-statny-vzdelavaci-program/chemia_g_4_5_r.pdf

11. Učebnice chémie pre základné školy a gymnáziá.

12. E – learning kurz: Didaktika chémie I (ÚCHV/DCH1/15), https://lms.upjs.sk/

Course language:

Notes:

Course assessment

Total number of assessed students: 131

А	В	С	D	Е	FX
67.18	19.08	8.4	3.05	2.29	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.

Date of last modification: 21.01.2022

University: P. J. Šafá	University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	cience				
Course ID: ÚCHV/ DCH2/15	Course name: Didactics of Chemistry II				
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: 4					
Recommended semester/trimester of the course: 3.					
Course level: II.					
Prerequisities: ÚCHV/DCH1/15					
Conditions for cours 1. Participations in set to participate in semi etc.) for a maximum	Se completion: eminars (also applies to tohe online form of teaching). Students are required nars. The students can excuse themself (incapacity for work, family reasons, of two seminars during the semester without the need for replacement. In the				

etc.) for a maximum of two seminars during the semester without the need for replacement. In the case of a longer-term justified absence (for example due to incapacity for work), the student will be assigned an alternative form of mastering the missed curriculum.

2. Active participation in class. Seminars are conducted in a form in which students are active – students present assignments, which include worksheets. The student is obliged to prepare 2 written assignments, which will be one of the conditions for participation in the exam. Topics of written assignments as well as requirements will be available through the e-learning portal LMS Moodle (direct link to the website: https://lms.upjs.sk/) in the course Didactics of Chemistry II (ÚCHV/DCH2/15).

3. The content of the seminars also includes assignments of seminar papers, which the student submits to the course Didactics of Chemistry II (ÚCHV/DCH2/15).

4. The student must pass a continuous assessment in the form of a written exam twice a semester.

5. Passing the exam: distance form of the exam assignments written test: Due to the current pandemic situation in Slovakia and in accordance with the conditions of the Faculty of Science UPJŠ in Košice, a written form of the exam is implemented through the Google Form application. Students fill in the answers to the written test. Test questions are always randomly generated. distance form of the exam assignments assignments – oral form through a webinar.

The final assessment in the course consists of the sum of points obtained for:

- 1. Written assignments (0-20 points)
- 2. Seminar work (0-10 points)
- 3. Written tests (0-20 points)
- 4. Final written test (20 points)
- 5. Oral exam (30 points)

Conditions for successful completion of the course: In order to obtain an A rating, it is necessary to obtain at least 85 points in total, to obtain an B rating at least 75 points, to obtain a C rating at least 65 points, to obtain a D rating at least 55 points and to obtain an E rating at least 45 points.

Learning outcomes:

Student will acquire knowledge and necessary skills for the work of teachers in the field of didactics of inorganic and organic chemistry as well as in selected topics of didactics of biochemistry. Can implement inquiry-based learning and digital tools in the teaching of topics from these fields of chemistry at primary school and grammar school with a focus on the use of videos, models, animations, simulations, interactive games and exercises (https://viki.iedu.sk/landing, http://kekule.science.upjs.sk/chemia/index.htm, https://studiumchemie.cz/, http://www.studiumbiochemie.cz/aplikace2.html#10, http:// didaktikabiochemie.natur.cuni.cz/db2020/db.html). He is able to included selected topics with an interdisciplinary focus (water quality, greenhouse effect, ozone hole, renewable energy sources) into teaching.

Brief outline of the course:

1. Didactics of calculation tasks in chemistry. Chemical calculations with a focus on the chemistry of everyday life.

2. Didactics of the topic Water. Water hardness, types of water, water conductivity, mineral water. Project-based learning of water, acid rain.

3. Didactics of the topic Air, Global environmental problems: Ozone and the ozone hole, Greenhouse effect.

4. Didactics of inorganic chemistry – selected chemical elements and their inorganic compounds. Alkali metals, alkaline earth metals, selected transition elements. Use of SATL method in teaching chemistry, complex tasks focused on the development of transformation skills.

5. Didactics of organic chemistry. Isomerism in the teaching of organic chemistry - Constitutional isomerism and stereoisomerism.

6. Didactics of the topic Hydrocarbons and hydrocarbon derivatives. SATL method. Energy sources - fossil fuels and renewable energy sources.

7. Plastics, chemistry of macromolecular substances. Use of inquiry-based method in teaching topics: Recognition of plastics, Properties of plastics.

8. Didactics of the topic Natural substances. Use of inquiry-based learning and project-based learning in topics: Proteins, Carbohydrates, Lipids.

9. Didactics of the topic Washing and cleaning agents.

10. Didactics of the topic Additives in food.

Recommended literature:

1. GANAJOVÁ, M. KALAFUTOVÁ, J. a kol.: Projektové vyučovanie v chémii. Didaktická príručka pre učiteľov základných škôl. Bratislava: Štátny pedagogický ústav, 2010. 144 s. ISBN 978-80-8118-058-3.

2. KIREŠ, M., JEŠKOVÁ, Z., GANAJOVÁ, M., KIMÁKOVÁ, K.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť A. Bratislava: ŠPÚ, 2016. ISBN 978-80-8118-155-9. https://www.statpedu.sk/files/articles/nove_dokumenty/ucebnice-metodiky-publikacie/ badatelske-aktivity/01cast_a_web.pdf

3. GANAJOVÁ, M., KRISTOFOVÁ, M.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť B. Ukážky vytvorených metodických a pracovných materiálov z predmetu Chémia. Bratislava: ŠPÚ, 2016. https://www.statpedu.sk/files/articles/nove_dokumenty/ucebnicemetodiky-publikacie/badatelske-aktivity/04cast_b_chemia_web.pdf

4. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre základné školy. Doplnené vydanie. Bratislava: CVTI SR, 2021. ISBN 978-80-8240-007-9. https:// vzdelavanie.itakademia.sk/vystupy/zim-che-zs.pdf

5. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre stredné školy. Doplnené vydanie. Bratislava: CVTI SR, 2021. ISBN 978-80-8240-008-6. https:// vzdelavanie.itakademia.sk/vystupy/zim-che-ss.pdf 6. GANAJOVÁ, M.: Metodika tvorby učebných úloh a didaktických testov pre chémiu. Košice: UPJŠ, 2015. ISBN 978-80-8152-237-6. https://unibook.upjs.sk/img/cms/2015/pf/didaktika-textyganajova.pdf

7. GANAJOVÁ a kol.: Rozvíjanie kompetencií žiakov prostredníctvom učebných úloh z chémie. Bratislava: ŠPÚ, 2018. ISBN 978-80-8118-215-0. https://www.statpedu.sk/files/sk/publikacnacinnost/publikacie/spu-chemia-2018-web.pdf

8. GANAJOVÁ, M., BRESTENSKÁ, B., GUNIŠ, J., JEŠKOVÁ, Z., KIREŠ, M., LEŠKOVÁ, A., LUKÁČ, S., OROSOVÁ, R., SOTÁKOVÁ, I., SZARKA, K., ŠNAJDER, Ľ.: Formatívne hodnotenie vo výučbe prírodných vied, matematiky a informatiky. 1. vyd. UPJŠ v Košiciach, 2021, 450 s. ISBN 978-80-8152-973-3.

9. Inovovaný štátny vzdelávací program pre 2. stupeň ZŠ. Človek a príroda. Chémia. https://www.statpedu.sk/files/articles/dokumenty/inovovany-statny-vzdelavaci-program/ chemia_nsv_2014.pdf

10. Inovovaný štátny vzdelávací program pre gymnázia so štvorročným a päťročným vzdelávacím programom. Človek a príroda. Chémia.

https://www.statpedu.sk/files/articles/dokumenty/inovovany-statny-vzdelavaci-program/ chemia_g_4_5_r.pdf

11. Školský informačný systém. Chémia. http://kekule.science.upjs.sk/chemia/index.htm
12. E – learning kurz: Didaktika chémie II (ÚCHV/DCH2/15), https://lms.upjs.sk/

Course language:

Notes:

Course assessment

Total number of assessed students: 137

А	В	С	D	Е	FX
78.83	13.14	6.57	1.46	0.0	0.0

Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.

Date of last modification: 21.01.2022

University: P. J. Šafári	k University in Košice		
Faculty: Faculty of Sci	ience		
Course ID: ÚINF/ DIN1a/15	Course name: Didactics of informatics		
Course type, scope an Course type: Practice Recommended cours Per week: 3 Per stud Course method: pres	d the method: e-load (hours): y period: 42 ent		
Number of ECTS cree	dits: 3		
Recommended semest	ter/trimester of the course: 2.		
Course level: II.			
Prerequisities:			
 Conditions for course Conditions for ongoing Proposal of a themat by 1 disponible hour. Creation of a conc informatics. Creation of a graded Proposal for the prej Conditions for success Obtaining at least 50% Learning outcomes: After completing this of a) acquire an overview informatics, create conceptual m school informatics, 	completion: g evaluation: ic plan for teaching informatics at secondary or elementary school extended ept map and specific educational objectives for selected topic of school I system of tasks for teaching selected topic of school informatics. paration of a lesson with a 5E inquiry cycle. ful completion of the course: o of points for ongoing assignments.		
c) create a inquiry-base	ed methodology of teaching a seleced topic of school informatics.		
 Brief outline of the course: 1. Objectives and content of teaching informatics in primary and secondary schools. State educational program. Informatics textbooks. 2. Maturita on informatics. Examples of school educational programs. Designing own thematic plan. 3. Logical structure of the curriculum, conceptual mapping. Determination of specific educational objectives and creation of a concept map for a selected topic of school informatics (RBT). 4. Educational task, its forms, and parameters. A graded system of tasks. 5. Creation of a graded system of tasks for teaching a selected topic of school informatics. 6. Activating methods of teaching school informatics (discussion and situational methods). 7. Activating methods of teaching school informatics (staging methods, educational games, scientific humor). 8. Activating methods of teaching school informatics (problem teaching, peer learning). 			

9. Activating methods of teaching school informatics (project teaching, flipped learning).

10. Inquiry-based learning, inquiry cycle, inquiry skills, levels of inquiry, 5E learning cycle.

11. Formative assessment, cognitive and metacognitive tools. Creating a worksheet with selected formative assessment tools.

12. Creating preparation for a lesson with a 5E learning cycle.

Recommended literature:

HAZZAN, Orit, Tami LAPIDOT and Noa RAGONIS, 2011. Guide to teaching computer science: an activity-based approach. New York: Springer. ISBN 9780857294425.

LAU, William, 2017. Teaching Computing in Secondary Schools: A Practical Handbook [online]. Taylor & Francis Group, 211 p. [cited 2021-7-10]. ISBN 9781315298191. Available from:

https://ebookcentral.proquest.com/lib/upjs-ebooks/detail.action?docID=5056529

ČAPEK, Robert, 2015. Moderní didaktika: lexikon výukových a hodnoticích metod. Praha: Grada. Pedagogika (Grada). ISBN 978-80-247-3450-7.

LUKÁČ, Stanislav, Ľubomír ŠNAJDER, Ján GUNIŠ and Zuzana JEŠKOVÁ, 2016. Bádateľsky orientované vyučovanie matematiky a informatiky na stredných školách [online]. Košice: Prírodovedecká fakulta UPJŠ v Košiciach [cited 2021-7-10]. ISBN 978-80-8152-471-4. Available from: https://unibook.upjs.sk/img/cms/2016/pf/bov.pdf

SPENDLOVE, David, 2015. 100 Ideas for Secondary Teachers: Assessment for Learning [online]. Bloomsbury Publishing, 129 p. [cited 2021-7-9]. ISBN 9781472911018. Available from:: https://ebookcentral.proquest.com/lib/upjs-ebooks/detail.action?docID=1990785 GANAJOVÁ, Mária, Beáta BRESTENSKÁ, Ján GUNIŠ, et al., 2021. Formatívne hodnotenie vo výučbe prírodných vied, matematiky a informatiky. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach. ISBN 978-80-8152-973-3.

GUNIŠ, Ján, Miloslava SUDOLSKÁ and Ľubomír ŠNAJDER, 2009. Ďalšie vzdelávanie učiteľov základných a stredných škôl v predmete informatika: Aktivizujúce metódy vo výučbe školskej informatiky. Bratislava: Štátny pedagogický ústav, 40 p. ISBN 978-80-89225-96-5. Also available from: https://www.statpedu.sk/files/sk/o-organizacii/projekty/projekt-dvui/publikacie/ aktivizujuce_metody.pdf

Course language:

Slovak and partly English due to selected programs and information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 76

А	В	С	D	Е	FX
28.95	18.42	21.05	19.74	10.53	1.32

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 01.08.2021

University: P. J. Šafárik University in Košice							
Faculty: Faculty of S	cience						
Course ID: ÚINF/ DIN1b/15	Course name: Didactics of informatics						
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 cro	edits: 5						
Recommended seme	ster/trimester of the course: 3.						
Course level: II.							
Prerequisities:							
Conditions for cours Conditions for ongoin 1. Creation of an inte 2. Microteaching with 3. Assessment of adm 4. Creation of an assig junior competition, co Conditions for the fir 1. Elaboration of a fivarious didactic fun selected topics of sch 2. Presentation of ow Conditions for succes Obtaining at least 500	e completion: ng evaluation: ractive educational aid. h a sample solution of an algorithmic problem. ninistered didactic test. gnment and a commented author's solution of the STEAM task for the PALMA prrection, and assessment of student solutions. hal evaluation: inal paper focused on the conceptual process, creation of assignments with ctions, naming misconceptions, and assessment of learning outcomes of ool informatics. n teacher's portfolio with discussion. asful completion of the course: % of points for ongoing and final assignments.						
Learning outcomes: After completing this course, students are able to: a) select and explain essential concepts for a selected topic of school informatics, b) create and present an assignment and a sample solution to an algorithmic problem, c) analyze and assess students' assignments and identify their misconceptions, d) design and discuss the methodology of teaching a selected topic of school informatics, which includes its own interactive teaching aid, e) complete your own teaching portfolio.							
 Brief outline of the c 1. Assessment of stuc 2. Assessment of stuc 3. Conceptual process 4. Informatics concept 5. Informatics concept 6. Methodology of the compression). 	ourse: lents' learning outcomes in school informatics. Didactic tests. lent projects. Student portfolio. s in school informatics. ots in informatics competitions (iBobor). ots in activities outside the computer (Computer Science Unplugged). teaching selected topics in the field of Representation and tools (coding,						

7. Methodology of teaching selected topics in the field of Representation and tools (encryption, steganography).

8. Methodology of teaching selected topics in the field of Representation and tools (data analysis and visualization).

9. Methodology of teaching selected topics in the field of Communication and Cooperation (communication and collaboration tools).

10. Methodology of teaching selected topics in the field of hardware and software (kits with sensors and actuators).

11. Methodology of teaching selected topics in the field of Information Society (information security and cybersecurity).

12. Completion of the portfolio of an informatics teacher (thematic plan, preparations from teaching self-reflection of student, worksheet with formative assessment tools, interactive educational aid, sample solution of an algorithmic problem, maturita assignment, system of tasks with increasing difficulty, assessment of an administered didactic test).

Recommended literature:

HAZZAN, Orit, Tami LAPIDOT and Noa RAGONIS, 2011. Guide to teaching computer science: an activity-based approach. New York: Springer. ISBN 9780857294425.

LAU, William, 2017. Teaching Computing in Secondary Schools: A Practical Handbook [online]. Taylor & Francis Group, 211 p. [cited 2021-7-10]. ISBN 9781315298191. Available from:

https://ebookcentral.proquest.com/lib/upjs-ebooks/detail.action?docID=5056529 COMPUTER SCIENCE EDUCATION RESEARCH GROUP AT THE UNIVERSITY OF CANTERBURY, NEW ZEALAND. Computer Science Field Guide: An online interactive resource for high school students learning about computer science [online]. [cited 2021-7-10]. Available from: https://www.csfieldguide.org.nz/en/

COMPUTER SCIENCE EDUCATION RESEARCH GROUP AT THE UNIVERSITY OF CANTERBURY, NEW ZEALAND. Computer Science without a computer [online]. [cited 2021-7-10]. Available from: https://csunplugged.org/en/

QUEEN MARY, UNIVERSITY OF LONDON. Computer Science For Fun: A magazine where the digital world meets the real world [online]. [cited 2021-7-10]. Available from: http://www.cs4fn.org/

GUNIŠ, Ján and Ľubomír ŠNAJDER, 2009. Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Tvorba úloh a hodnotenie žiakov v predmete informatika. Bratislava: Štátny pedagogický ústav, 40 p. ISBN 978-80-8118-012-5. Also available from: https://www.statpedu.sk/files/sk/o-organizacii/projekty/projekt-dvui/publikacie/ tvorba_uloh_a_hodnotenie.pdf

GUNIŠ, Ján and Ľubomír ŠNAJDER, 2010. Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Metodika výučby tematickej oblasti Informácie okolo nás. Bratislava: Štátny pedagogický ústav, 40 p. ISBN 978-80-8118-030-9. Also available from: https://www.statpedu.sk/files/sk/o-organizacii/projekty/projekt-dvui/publikacie/ metodika_informacie_okolo_nas.pdf

GUNIŠ, Ján and Ľubomír ŠNAJDER, 2010. Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Metodika výučby tematickej oblasti Komunikácia prostredníctvom IKT. Bratislava: Štátny pedagogický ústav, 32 p. ISBN 978–80–8118–036-1. Also available from: https://www.statpedu.sk/files/sk/o-organizacii/projekty/projekt-dvui/ publikacie/metodika_komunikacia_prostrednictvom_ikt.pdf

GUNIŠ, Ján and Ľubomír ŠNAJDER. Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Metodika výučby oblastí Princípy fungovania IKT a Informačná spoločnosť. Bratislava: Štátny pedagogický ústav, 32 p. ISBN 978–80–8118–045-3. Also

available from: https://www.statpedu.sk/files/sk/o-organizacii/projekty/projekt-dvui/publikacie/ metodika_informacna_spolocnost.pdf

Course language:

Slovak and partly English due to selected programs and information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 154

А	В	С	D	Е	FX
18.18	33.12	24.03	15.58	8.44	0.65

Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.

Date of last modification: 01.08.2021

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚINF/ DPRG/19	Course name: Didactics of programming			

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: 4

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Conditions for ongoing evaluation:

1. Creation of an assignment and an commented author's solution of a task using several problemsolving strategies.

2. Proposal of a pair of maturita assignments with solutions and methodological comments.

3. Creation of an assignment and an commented author's solution of the STEAM task for the PALMA junior competition, correction and evaluation of student solutions.

Conditions for the final evaluation:

1. Creation and presentation of the final project with a collection of solved and commented tasks for a selected topic of programming in Python.

2. Elaboration of a final test focused on the elaboration of sample and commented solutions to given problems in Python and Scratch languages.

Conditions for successful completion of the course:

Obtaining at least 50% of points for ongoing and final assignments.

Learning outcomes:

After completing this course, students are able to:

a) define specific educational objectives for a selected topic of programming,

b) create assignments and sample solutions for STEAM tasks using various problem-solving strategies,

c) analyze and evaluate solutions to student tasks and identify their misconceptions,

d) design a methodology for teaching a selected programming topic.

Brief outline of the course:

1. Educational standards in programming in secondary and primary schools. Graduation in informatics.

- 2. Programming competitions.
- 3. Algorithmic thinking. Algorithmic games.
- 4. Computational thinking. Problem solving strategies.
- 5. Data structures around us, algorithms over data structures.
- 6. Teaching selected algorithms and problem solving strategies (recursion).
- 7. Basic concepts and misconceptions of programming.

- 8. Teaching programming in Scratch.
- 9. Teaching programming in AppInventor.
- 10. Teaching programming in Python.
- 11. Programming of mathematical models of selected phenomena/systems.
- 12. Specifics of computer arithmetic.

Recommended literature:

BEECHER, Karl, 2017. Computational thinking: A beginner's guide to problem-solving and programming. © BCS Learning & Development, 308 p. ISBN 978-1-78017-36-41.

COMPUTING AT SCHOOL. Computational Thinking Concepts and Approaches

Barefoot [online]. [cited 2021-7-12]. Available from: https://www.barefootcomputing.org/ concept-approaches/computational-thinking-concepts-and-approaches

FINCHER, Sally and Marian PETRE, 2004. Computer science education research. New York: Taylor & Francis. ISBN 9789026519697.

GUTSCHANK, Jörg et al. 2019. coding in STEM Education [online]. Berlin: Science

on Stage Deutschland e.V., 76 p. [cited 2021-7-10]. ISBN 978-3-942524-58-2.

Available from: https://www.science-on-stage.eu/sites/default/files/material/

coding_in_stem_education_en_2nd_edition.pdf

BRIGGS, Jason R., 2013. Python for kids: a playful introduction to programming. San Francisco: No Starch Press. ISBN 1593274076.

BLAHO, Andrej, 2016. Programovanie v Pythone 1 (prednášky k predmetu Programovanie (1) 1-AIN-130/13) [online]. Bratislava: Knižničné a edičné centrum FMFI UK, 322 p. [cited

2021-7-10]. ISBN 978-80-8147-067-7. Available from: http://python.input.sk/

ŠNAJDER, Ľubomír and Ján GUNIŠ, 2014. Tvorba úloh pre programátorské súťaže

[online]. 1. Košice: Prírodovedecká fakulta UPJŠ v Košiciach, 79 p. [cited 2021-7-10]. ISBN 978-80-8152-139-3. Available from: https://unibook.upjs.sk/img/cms/2014/pf/tvorba-uloh-pre-prog-sutaze.pdf

GUNIŠ, Ján and Ľubomír ŠNAJDER, 2021. Programovanie v Pythone 1. Košice: Prírodovedecká fakulta UPJŠ v Košiciach, 170 p. ISBN 978-80-8152-969-6. Also available from: https://unibook.upjs.sk/img/cms/2021/pf/programovanie-v-pythone-1.pdf

GUNIŠ, Ján, Viera MICHALIČKOVÁ, Martin CÁPAY and Ľubomír ŠNAJDER, 2020. Riešenie problémov a programovanie [online]. Bratislava: Centrum vedecko-technických informácií SR [cited 2021-7-10]. ISBN 9788089965625. Available from: https://registracia.itakademia.sk/ media/themes/nip-rpp.pdf

ŠNAJDER, Ľubomír, Gabriela LOVÁSZOVÁ, Viera MICHALIČKOVÁ and Ján GUNIŠ, 2020. Programovanie mobilných zariadení [online]. Bratislava: Centrum vedecko-technických informácií SR, 300 p. [cited 2020-11-30]. ISBN 978-80-89965-63-2. Available from: https://registracia.itakademia.sk/media/themes/nip-pmz.pdf

Course language:

Slovak and partly English due to selected programs and information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 147

А	В	С	D	Е	FX
14.29	33.33	22.45	14.29	12.24	3.4

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 03.08.2021

University: P. J.	University: P. J. Šafárik University in Košice				
Faculty: Faculty	y of Science				
Course ID: ÚC DTCU/15	HV/ Course na	Course name: Digitálne technológie vo výučbe chémie			
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	FS credits: 5				
Recommended	semester/trimes	ster of the cours	e: 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	Course assessment Total number of assessed students: 10				
А	В	С	D	Е	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.					
Date of last mo	Date of last modification: 03.05.2015				
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafárik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science				
Course ID: ÚINF/ DPP1/14	Course 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 the c	ourse: 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:	Provides:				
Date of last modification:					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafárik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science				
Course ID: ÚCHV/ DPP1/14	Course name: Diploma Project I				
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: 1				
Recommended seme	ster/trimester of the cour	se: 1.			
Course level: II.					
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	Course assessment Total number of assessed students: 65				
	abs	n			
	100.0 0.0				
Provides:					
Date of last modification: 17.01.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚINF/ DPP2/14	Course name: Diploma Project II			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present				
Number of EC18 cr				
Recommended seme	ster/trimester of the cours	e: 2.		
Course level: 11.				
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: 15			
	abs	n		
	100.0 0.0			
Provides:				
Date of last modification:				
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.				

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	Faculty: Faculty of Science		
Course ID: ÚCHV/ DPP2/14	7 Course name: Diploma Project II		
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: 2		
Recommended seme	ster/trimester of the cour	se: 2.	
Course level: II.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the course:			
Recommended litera	Recommended literature:		
Course language:			
Notes:			
Course assessment Total number of assessed students: 65			
	abs n		
100.0 0.0		0.0	
Provides:			
Date of last modification: 17.01.2022			
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of Science			
Course ID: ÚINF/ DPP3/14	Course name: Diploma Project III		
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of EC18 cr			
Recommended seme	ster/trimester of the cours	e: 3.	
Course level: 11.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the course:			
Recommended literature:			
Course language:	Course language:		
Notes:			
Course assessment Total number of assessed students: 7			
	abs n		
100.0 0.0		0.0	
Provides:			
Date of last modification:			
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of Science			
Course ID: ÚCHV/ DPP3/14	Course name: Diploma Project III		
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: 2		
Recommended seme	ster/trimester of the cour	se: 3.	
Course level: II.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the course:			
Recommended litera	Recommended literature:		
Course language:			
Notes:			
Course assessment Total number of assessed students: 76			
	abs n		
100.0 0.0		0.0	
Provides:			
Date of last modification: 17.01.2022			
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.			

University: P. J	. Šafárik Univers	ity in Košice			
Faculty: Facult	y of Science				
Course ID: ÚC DPOU/14	HV/ Course na	Course name: Diploma Thesis and its Defence			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of EC	FS credits: 14				
Recommended	semester/trimes	ter of the cours	e:		
Course level: II					
Prerequisities:	ÚCHV/DPP3/14				
Conditions for	course completi	on:			
Learning outcomes:					
Brief outline of	Brief outline of the course:				
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 77					
A	В	С	D	E	FX
83.12	14.29	2.6	0.0	0.0	0.0
Provides:					
Date of last modification: 26.01.2022					
Approved: prof. PhDr. Oľga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafá	University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science				
Course ID: ÚCHV/ DSU1a/10	Course name: Diplomový seminár z chémie pre XCH			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	e: 2.		
Course level: II.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the course:				
Recommended literature:				
Course language:				
Notes:				
Course assessment Total number of assessed students: 13				
	abs	n		
	100.0	0.0		
Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.				
Date of last modification: 21.01.2022				
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.				

University: P. J. Šafá	University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science				
Course ID: ÚCHV/ DSU1b/10	Course name: Diplomový seminár z chémie pre XCH			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	e: 3.		
Course level: II.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the course:				
Recommended literature:				
Course language:				
Notes:				
Course assessment Total number of assessed students: 6				
	abs	n		
	100.0	0.0		
Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.				
Date of last modification: 08.02.2022				
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.				

University: P. J	. Šafárik Univers	ity in Košice			
Faculty: Facult	Faculty: Faculty of Science				
Course ID: KP ZSP/15	E/ Course na	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	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:	Notes:				
Course assessment Total number of assessed students: 591					
А	В	С	D	E	FX
59.56	23.52	10.83	4.4	1.18	0.51
Provides: PaedDr. Michal Novocký, PhD.					
Date of last modification: 20.06.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚINF/ FO1/15	Course name: Formal languages and automata
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 1 Per Course method: pro	nd the method: re / Practice rse-load (hours): study period: 28 / 14 esent
Number of ECTS cr	edits: 5
Recommended seme	ster/trimester of the course: 1., 3.
Course level: II.	
Prerequisities:	
Conditions for cours Test and oral examin	ation.
Learning outcomes: To provide theoretica knowledge in theory	l background for studying computer science in general, by giving the necessary of automata.
 Brief outline of the properties of type A→epsilon af type A→epsilon af the tween of tween af tween of tween af tween of tween af tween of tween af tween	ourse: ta: definition of a pushdown automaton, accepting by final states, accepting idown automata: examples of application in practice mars: basic definition, leftmost derivation, derivation tree, elimination of rules nd A→B, Chomsky normal form context-free grammars and pushdown automata: transforming context-free wn automaton, transforming pushdown automaton to a context-free grammar Statement of the lemma and its proof : applications of the lemma of context-free languages of deterministic context-free languages ata producing an output: basic definitions and properties, applications in e languages: context-sensitive grammar, nondeterministic linear-bounded A), transforming context-sensitive grammar to an LBA, transforming LBA to rammar s of context-sensitive languages numerable languages: phrase-structure grammar, nondeterministic and machine, transforming nondeterministic Turing machine to a phrase-structure ng phrase-structure grammar to a deterministic Turing machine, closure machine indecidable problems of the formal language theory ature:
1. J.E. Hopcroft, R.Motwani, J.D. Ullman: Introduction to automata theory, languages, and computation, Addison-Wesley, 2001.

2. J. Shallit: A second course in formal languages and automata theory, Cambridge University press, 2009.

3. M. Sipser: Introduction to the theory of computation, Thomson Course Technology, 2006.

Course language:

Slovak or English

Notes:

Content prerequisities:

 Basic mathematical background (proof by contradicion and by mathematical induction), basic notions from the set theory (union, intersection, complement, cartesian product).
 Basic knowledge about finite state automata and regular languages.

Course assessment

Total number of assessed students: 11

А	В	С	D	Е	FX
36.36	36.36	18.18	9.09	0.0	0.0

Provides: prof. RNDr. Viliam Geffert, DrSc., Mgr. Alexander Szabari, PhD., RNDr. Dominika Pališínová, RNDr. Juraj Šebej, PhD.

Date of last modification: 23.11.2021

University: P. J.	University: P. J. Šafárik University in Košice						
Faculty: Faculty	of Science						
Course ID: ÚIN TIK1/15	IF/ Course na	Course name: Information theory, encoding					
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present							
Number of ECT	FS credits: 4						
Recommended	semester/trimes	ster of the cours	e: 1.				
Course level: II.							
Prerequisities:							
Conditions for of Satisfiable know	course completi vledge of basic n	on: notions					
Learning outco To understand p	mes: rinciples of loss	less coding and e	entropy and their	mutual relationsh	nip.		
Brief outline of 1. Word and lan 2. Decodable co 3. Prefix-free co 4. Krafto-McMi 57. Entropy 89. Price of co 10. Shannon's th 11. Fano's code 12. Huffman's o Recommended	Brief outline of the course: 1. Word and language 2. Decodable codes 3. Prefix-free codes 4. Krafto-McMillan inequality 57. Entropy 89. Price of code sequence 10. Shannon's theorem 11. Fano's code sequence 12. Huffman's optimal code sequence						
 D. Hankersson, G. Harris, P. Johnson: Introduction to Information Theory and Data Compression, CRC Pr., 1998. J. Adámek: Kódovaní a teorie informace, Vydavatelství ČVUT, Praha 1994 J. Černý: Entrópia a informácia v kybernetike, Alfa 1981 							
Course language: Slovak							
Notes:							
Course assessm Total number of	ent assessed studen	ıts: 99					
A	В	С	D	E	FX		
61.62	14.14	14.14	3.03	0.0	7.07		
Provides: prof. RNDr. Stanislav Krajči, PhD.							

Date of last modification: 23.11.2021

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

Course ID: ÚCHV/ **Course name:** Introduction to Environmental Chemistry UECH/03

Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14

Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1., 3.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Continuous test. Active participation in exercises - elaboration of semester work. Passing the final examination in the form of a written test.

Learning outcomes:

Introduction to topics in environmental chemistry and basic procedures applied for environmental protection.

Brief outline of the course:

Introduction to Environmental Chemistry

Chemical aspects of pollution and environmental problems. Composition and behavior of the atmosphere. Energy balance of the Earth and climate changes. Principles of photochemistry, photoprocesses in the atmosphere. Petroleum, hydrocarbons and coal (characteristics, sources and environmental pollution). Soaps, polymers and synthetic surfactants. Haloorganics and pesticides. Environmental chemistry of some important elements (C, N, S, P, halogens, biologically important metals ...). Environmental chemistry in aqueous media. Aqueous systems, parameters, cycles and their protection. The Earth's crust (rocks, minerals, soils). Natural and artificial radioactivity, utilization. Energy and energy sources (fossil fuels, nuclear, geothermal, solar energy, wind and water energy). Solid waste disposal and recycling.

Recommended literature:

1. Gary W. van Loon, Stephen J. Duffy: Environmental Chemistry - A Global Perspective, Oxford University Press, Oxford 2003.

2. R. A. Bailey, H. M. Clark, J. P. Ferris, S. Krause, R. L. Strong: Chemistry of the Environment, Academic Press, San Diego 2002.

3. G. Schwedt: The Essential Guide to Environmental Chemistry, Wiley and Sons, London 2001.

4. R. N. Reeve, J. D. Barnes: General Environmental Chemistry, Wiley, London 1994.

5. G. Burton, J. Holman, G. Pilling, D. Waddington: Chemical Storylines, Heinemann, Oxford, London 1994.

Course language:

Notes:

Based on the current pandemic situation in Slovakia and in accordance with the conditions of the Faculty of Natural Sciences of UPJŠ in Košice, the education and examination can also be carried out in a distance form. The tutorial will be carried out in the form of online lectures and consultings in the BigBlueButton system. The written form of the exam takes place through the Google Forms app. Students prepare responses to the final written test. Test questions are randomly generated each time. The final oral exam is conducted through a webinar in BigBlueButton https://bbb.science.upjs.sk/b) system with online generation of random question numbers.

Course assessment

Total number of assessed students: 223

А	В	С	D	Е	FX
49.78	21.52	14.8	8.07	5.83	0.0

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

Date of last modification: 21.01.2022

University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	cience		
Course ID: ÚCHV/ FUMCH1/03Course name: Introduction to Material Chemistry			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present			
Number of ECTS credits: 5			
Recommended semester/trimester of the course: 1., 3.			

Course level: I., II.

Prerequisities:

Conditions for course completion:

1. Participation in seminars (also applies to the online form of teaching). Students are required to attend seminars. The relevant teacher who leads the seminar will justify the student's justified non-participation (incapacity for work, family reasons, etc.) in a maximum of two seminars during the semester without the need for substitute performance. In the case of a longer-term justified absence (for example due to incapacity for work), the relevant teacher will assign the student an alternative form of mastering the missed material.

2. Activity at seminars. The preparation of students and their activity in seminars is always assessed by the relevant teacher who leads the seminar, within his / her competence.

3. Elaboration and submission of a seminar paper on an assigned topic within the independent work at home and presentation of the most important conclusions of the seminar paper in the form of a PPT presentation. The seminar papers must be handed over to the relevant teacher who leads the seminars by the 12th week of the semester, and the presentation must take place no later than the 8th week of the semester. The seminar work and performance are evaluated by the relevant teacher. Submission of the seminar paper and its successful defense is a condition of admission to the oral exam.

4. The exam is usually carried out orally, resp. in case of restrictions of contact forms of the pedagogical process, the exam will be performed in a suitable distance - electronic form.

5. To successfully master the subject, it is necessary to prove mastery of the required curriculum at least 51%.

Learning outcomes:

To present the different types of functional materials, their atomic structure and mechanical properties.

Brief outline of the course:

Historical perspectives. Materials and human being. Participation of natural science in material engineering. Material revolutions. Classification of materials. Atomic structure and interatomic bonding. Amorphous and crystalline materials. Mechanics of materials. Imperfections in solids. Crystal lattice defects. Point defects. Line defects. Dislocations. Diffusion. Diffusion mechanisms. Deformations and failures, re-crystallization. Deformations. Plastic deformations. Solid solutions. Intermediary phases. Phases in ceramic systems. Phase transformations. Crystallization of metals.

Phase identification methods. Stress and strain. Structure of metallic and ceramic materials. Alloys. Steel. Light metals. Metallic glasses. Gold. Inorganic non-metallic materials. Ceramic construction materials. Ceramic tools. Bio-ceramics. Ceramics in cosmos. High-temperature superconductors. Glass. Building binders. Polymers. Essence of polymers. Thermoplastics. Reactoplastics. Polymer structure. Mechanical properties of polymers. Natural materials. Wood. Bones. Teeth. Conchs and shells. Tectrices.

Recommended literature:

W. D. Callister, Jr.: Fundamentals of Materials Science and Engineering, John Wiley & Sons, 2001.

Brian S. Mitchell: An Introduction to Materials Engineering and Science: For Chemical and Materials Engineers, John Wiley & Sons, 2004.

Course language:

Slovak language.

Notes:

Teaching is carried out in person or, if necessary, remotely using the bbb or MS Teams tool. The form of teaching is specified by the teacher at the beginning of the semester, updated continuously.

Course assessment

Total number of assessed students: 78

А	В	С	D	Е	FX
89.74	8.97	0.0	0.0	0.0	1.28

Provides: prof. RNDr. Renáta Oriňaková, DrSc.

Date of last modification: 25.11.2021

University: P. J. Šafárik University in Košice					
Faculty: Faculty of S	cience				
Course ID: KPPaPZ/ZMPPV/15Course name: Introduction to Research Methodoly in Education and Psychology					
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:	Notes:					
Course assessm	Course assessment					
A	B	С	D	Е	FX	
19.41	27.09	24.72	19.55	9.08	0.14	
Provides: doc. 1	Provides: doc. Mgr. Mária Bačíková, PhD., PhDr. Anna Janovská, PhD.					
Date of last modification: 24.06.2022						
Approved: prof. PhDr. Oľga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.						

University: P. J	University: P. J. Šafárik University in Košice						
Faculty: Facult	y of Science						
Course ID: ÚIN UGR1/15	NF/ Course na	F/ Course name: Introduction to computer graphics					
Course type, sc Course type: 1 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 credits: 5						
Recommended	semester/trimes	ter of the course	e: 1., 3.				
Course level: I.	, II.						
Prerequisities:							
Conditions for	course completi	on:					
Learning outco To provide the graphics.	students with know	owledge of graph	nics algorithms	and basic princip	les of computer		
Graphics hardw drawing 2D pri spline forms, B perspective and Rendering tech computer anima	Graphics hardware, input and output devices. Color models, palettes. Raster graphics algorithms for drawing 2D primitives. Filling and clipping. Curve modeling, interpolations and approximations, spline forms, Bézier curves, B-splines, surfaces. Homogenous coordinates, affine transformations, perspective and parallel projections. Visible-surface determination, illumination and shading. Rendering techniques, photorealism, textures, ray tracing, radiosity. Object representations, computer animation, virtual reality.						
Recommended literature: FOLEY, J. D., van DAM, A., FEINER, S., HUGHES, J.: Computer Graphics: Principles and Practice, Addison-Wesley, 1991 MORTENSON M.E.: Geometric modeling 2 ed. Willey 1997							
Course languag	ge:			-			
Notes:							
Course assessm Total number o	Course assessment Total number of assessed students: 311						
А	В	С	D	Е	FX		
13.18	10.29	13.83	23.47	30.87	8.36		
Provides: RND	Provides: RNDr. Rastislav Krivoš-Belluš, PhD.						
Date of last mo	Date of last modification: 08.01.2022						
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.							

University: P. J. Šafá	irik University in Košice		
Faculty: Faculty of S	Science		
Course ID: ÚINF/ UNS1/15	Course name: Introduction to neural networks		
Course type, scope a Course type: Lectu Recommended cou Per week: 2 / 2 Per Course method: pro-	and the method: re / Practice rse-load (hours): study period: 28 / 28 esent		
Number of ECTS cr	redits: 5		
Recommended seme	ester/trimester of the course: 1., 3.		
Course level: I., II., I	N		
Prerequisities:			
Conditions for cours The condition for particular networks, successful types, and genetic all exam.	se completion: assing the course is the realization of a project with the application of neural completion of two written tests in the field of neural networks, their basic gorithms, as well as successful completion of the written and oral part of the		
Learning outcomes: The result of the education is an understanding of the basic principles of neural networks and genetic algorithms. The student will gain the ability to apply the acquired knowledge in intelligent data analysis and also work with a selected tool for modeling neural networks.			
Brief outline of the of 1. Basic concept arist calculable by threshold	course: ing from biology. Linear threshold units, polynomial threshold units, functions old units.		

2. Perceptrons. Linear separable objects, adaptation process (learning), convergence of perceptron learning rule, higher order perceptrons.

3. Forward neural networks, hidden neurons, adaptation process (learning), backpropagation method.

4. Recurrent neural networks. Hopfield neural networks, properties, associative memory model, energy function, learning, optimization problems (business traveler problem).

5. Model of gradually created network. ART network, architecture, operations, initialization phase, recognition phase, search and adaptation phase. Use of the ART network.

6. Applications of studied models in solving practical problems.

7. Written test I.

8. Motivation to model genetic elements. Genetic algorithm. Application of genetic algorithms.

9. Genetic programming, root trees, Read's linear code. Basic stochastic optimization algorithms: blind algorithm and climbing algorithm. Forbidden search method.

10. Genetic and evolutionary programming with typing, examples of use. Grammatical evolution.

11. Special techniques of evolutionary computations. Selection mechanisms in evolutionary algorithms.

12. Use of genetic algorithms in training neural networks. Artificial life.

13. Written test II.

Recommended literature:

1. AGGARWAL, Charu C. Neural networks and deep learning: a textbook. Cham: Springer, 2018. ISBN 978-3319944623.

2. KVASNIČKA, Vladimír. Úvod do teórie neurónových sietí. [Slovenská republika]: IRIS, 1997. ISBN 80-88778-30-1.

3. KVASNIČKA, Vladimír. Evolučné algoritmy. Bratislava: Vydavateľstvo STU, 2000. Edícia vysokoškolských učebníc. ISBN 80-227-1377-5.

4. MITCHEL, Melanie. An Introduction to Genetic Algorithms. Cambridge: MIT Press, 2002. ISBN 0-262-63185-7.

5. SINČÁK, Peter, ANDREJKOVÁ, G. Úvod do neurónových sietí, I. diel, Košice: ELFA, 1996. ISBN 808878638X

Course language:

Slovak or English

Notes:

Content prerequisites:

Basics of programming in Python, or another alternative programming language suitable for data analysis

Course assessment

Total number of assessed students: 472

А	В	С	D	Е	FX
17.16	17.58	22.25	17.8	21.19	4.03

Provides: doc. RNDr. Ľubomír Antoni, PhD., RNDr. Šimon Horvát, PhD.

Date of last modification: 23.11.2021

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚINF/ LOP1/15	Course name: Logic programming
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 28 esent
Number of ECTS cr	edits: 5
Recommended seme	ster/trimester of the course: 2., 4.
Course level: I., II.	
Prerequisities:	
Conditions for cours Evaluation of active p the semester. Written	e completion: participation in exercises and homework, test of theoretical knowledge during and oral exam together with assessment from exercises.
Learning outcomes: To learn bases of decl and basic methods of	arative programming (as complementary method to procedural programming) implementations of logic programming languages.
Brief outline of the c 1. Introduction to log 2. theory, models, He 3. SLD resolution 4. Basics of Prolog la 5. Prologue in examp 6. Lists 7., 8., 9. Data analysi 10., 11., 12. Graph th	ourse: ic rbrand model Inguage les s in Prolog eory in Prolog
Recommended litera BRATKO, Ivan. Prol Wesley, 1990. ISBN NILSON U., MALUS NIENHUYIS-CHEN Springer-Verlag, 199	og. Programming for Artificial Intelligence. 2 ed. Wokingham: Addison- 0-201-41606-9. SINSKI J.: Logic, Programming and Prolog, John Wiley & Sons Ltd. 1995 G Sh.H., WOLF R.: Foundations of Inductive Logic Programming, 7
Course language: Slovak or English	
Notes: Prerequisites: none	

Course assessm Total number o	nent f assessed studen	ts: 307			
А	В	С	D	Е	FX
23.78	14.01	14.33	22.8	23.45	1.63
Provides: doc. RNDr. Ondrej Krídlo, PhD.					
Date of last modification: 23.11.2021					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	Science		
Course ID: ÚFV/ FEP1/07	Course name: Microcomputer Based Science Laboratory		
Course type, scope a Course type: Lectu Recommended cou Per week: 1 / 2 Per Course method: pr	and the method: re / Practice urse-load (hours): r study period: 14 / 28 esent		
Number of ECTS cr	redits: 4		
Recommended seme	ester/trimester of the course:		
Course level: II.			
Prerequisities:			
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	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 ation and defence of the final assignment at during the semester essful 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 co to support active lea He gains skills to u measuring on videor such activities in scie skills' development.	burse student gains an overview about the possible use of digital technologies arning in science implementing methods of inquiry-based science education. use and develop activities on measuring data with the help of datalogging, recordings and picture and modeling processes. Student is able to implement ence teaching to support active learning, conceptual understanding and inquiry		
 Brief outline of the of 1. Inquiry-based scief 2. Inquiry teaching a videomeasruement, if 3. Data collection in 4. Processing and an 5. Activities on realmethods. 6. Videomeasurement 7. Processing and an 8. Activities on videomethols 	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:

DEMKANIN, Peter a kol.: Počítačom podporované prírodovedné laboratórium, Knižničné a edičné centrum FMFI UK Bratislava, 2006

Learning by doing the CMA way, dostupné na https://cma-science.nl/

Course language:

Slovak

English

Notes:

Course assessment

Total number of assessed students: 34

А	В	С	D	Е	FX
44.12	44.12	11.76	0.0	0.0	0.0

Provides: doc. RNDr. Zuzana Ješková, PhD.

Date of last modification: 15.09.2021

University: P. J. Šaf	árik University in Košice		
Faculty: Faculty of Science			
Course ID: KPE/ PPD/15Course name: Pedagogy and Psychology			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of ECTS credits: 1			

Recommended semester/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:

Verification of the acquired competencies of the student in accordance with the profile of the graduate.ie required number of credits in the prescribed composition by the study plan.

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. (2016). Moderní didaktika. Praha: Grada.

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

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

Petlák, E. (2016). Všeobecná didaktika. Bratislava: Iris.

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

Prucha, J. (2017). Moderní pedagogika. Praha: Portál.

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

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

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

Psychológia:

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

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

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

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

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

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. Dostupné online na www. e-metodologia. fedu. uniba. sk.

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

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

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

Výrost, J., Slaměník, I. (2008). Sociální psychologie. Praha : Grada.

Výrost, J., Salměník, I. (1998). Aplikovaná sociální psychológie I. Praha: Portál. Strana: 2

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

Zelina, M. (2011). Stratégie a metódy rozvoja osobnosti dieťaťa: (metódy výchovy). Bratislava, Iris.

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

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

Course languag	Course language: Notes:				
Notes:					
Course assessm Total number of	ent f assessed studen	ts: 574			
А	В	С	D	Е	FX
27.7	28.75	25.61	14.46	3.14	0.35
Provides:	Provides:				
Date of last modification: 07.06.2021					
Approved: prof. PhDr. Oľga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafárik Unive	University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science					
Course ID: ÚINF/ Course PDSI2/21	name: Pro-seminar to diploma thesis in informatics				
Course type, scope and the m Course type: Practice Recommended course-load Per week: 2 Per study perio Course method: present	nethod: (hours): d: 28				
Number of ECTS credits: 2					
Recommended semester/trim	nester of the course: 1.				
Course level: II.					
Prerequisities:					
Conditions for course comple Conditions for ongoing evalua 1. Analysis of the informatics 2. Analysis of selected contrib 3. Analysis of selected papers 4. Analysis of a selected educa Conditions for the final evalua 1. Creation of a thesis assignm 2. Creation of an overview of 3. Creation and presentation o Conditions for successful com Fulfillment of all ongoing and	etion: ation: curriculum of a selected country. butions of educational journals. of conference proceedings. ational project. ation: nent (title, objectives, literature, supervisor). the current state of the studied issue. f the thesis website. appletion of the course: final assignments.				
The student will get an idea of and life cycle). The student actively exploit ed conference proceedings, educa The student gains an overview as the teaching of current topic The student will create an over topic of the master thesis.	f a thesis focused on the teaching of informatics (its types, structure ducational information resources (publication databases, journals and ational projects). v of the content of informatics teaching at home and abroad, as well cs in informatics. erview of the current state of teaching issues related to the selected				
 Brief outline of the course: 1. Master theses focused on tertheses). 2. Analysis of selected theses 3. Overview of information databases, journals and confer 4. Study and analysis of inform 5. Study and analysis of selected OMFI, sciED). 	eaching informatics (types of theses, structure of thesis, life cycle of on teaching informatics (CRZP). resources (curricula of informatics abroad, available publication rence proceedings, educational projects). matics curricula in selected countries (CSTA, UK, Czech Republic). ed papers of educational journals (INFEDU, C&E, JTIE, ICTE, MFI,				

6. Study and analysis of selected papers of educational journals (INFEDU, C&E, JTIE, ICTE, MFI, OMFI, sciED).

7. Study and analysis of selected papers of conference proceedings (DidInfo, ISSEP, EduLearn, MIPRO, ICETA).

8. Study and analysis of selected conference proceedings (DidInfo, ISSEP, EduLearn, MIPRO, ICETA).

9. Study and analysis of selected educational projects (NP ITA, ĎVUi, PRIM, eTwinning).

10. Study and analysis of selected educational projects (NP ITA, ĎVUi, PRIM, eTwinning).

11. Creation of a diploma website with an overview of the current state of the topic of the diploma thesis.

12. Creation of a diploma website with an overview of the current state of the topic of the diploma thesis.

Recommended literature:

MEŠKO, Dušan, Dušan KATUŠČÁK and Ján FINDRA, 2013. Akademická príručka: Chcete byť úspešní na vysokej škole? 3. vydanie. Osveta, 495 pp. ISBN 9788080633929.

KATUŠČÁK, Dušan, 2013. Ako písať záverečné a kvalifikačné práce. Enigma, 162 pp. ISBN 8089132454.

COMPUTER SCIENCE TEACHERS ASSOCIATION. Home Page

Computer Science Teachers Association [online]. [cited 2021-7-30]. Available from: https://www.csteachers.org/

ASSOCIATION FOR COMPUTING MACHINERY. The ACM Digital Library [online]. [cited 2021-7-30]. Available from: https://dl.acm.org/

SPRINGER NATURE SWITZERLAND AG. Home - Springer [online]. [cited 2021-7-30]. Available from: https://link.springer.com/

BAČÍKOVÁ, Mária, Anna JANOVSKÁ and Oľga OROSOVÁ, 2019. Základy metodológie pedagogicko-psychologického výskumu: Sprievodca pre študentov učiteľstva [online]. 2. doplnené vydanie. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 195 pp. [cited 2021-7-29]. ISBN 978-80-8152-805-7. Available from: https://unibook.upjs.sk/sk/filozoficka-fakulta/1266-zaklady-metodologie-pedagogicko-psychologickeho-vyskumu-sprievodca-pre-

studentov-ucitelstva

Informatics in Education. Vilnius University Institute of Data Science and Digital Technologies. ISSN 2335-8971 (online). Also available from: https://infedu.vu.lt/journal/INFEDU

Matematika–fyzika–informatika. Praha: PROMETHEUS. ISSN 1805-7705. Also available from: http://www.mfi.upol.cz/index.php/mfi/index

UNIVERZITA MATEJA BELA V BANSKEJ BYSTRICI, TECHNICKÁ UNIVERZITA V LIBERCI, 2021. Zborníky medzinárodnej konferencie DidInfo (od roku 2011) [online]. [cited 2021-7-30]. Available from: http://www.didinfo.net/minule-rocniky

CENTRUM VEDECKO-TECHNICKÝCH INFORMÁCIÍ SR. Centrálny register záverečných a kvalifikačných prác [online]. [cited 2021-7-30]. Available from: https://cms.crzp.sk/

Course language:

Slovak and partly English due to selected information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment			
Total number of assessed students: 2			
abs	n		
100.0	0.0		
Provides: doc. RNDr. Ľubomír Šnajder, PhD.			
Date of last modification: 01.08.2021			
Approved: prof. PhDr. Oľga Orosová, CSc., do Stanislav Krajči, PhD.	c. RNDr. Mária Ganajová, CSc., prof. RNDr.		

University: P. J. Šafárik University in Košice				
Faculty: Faculty of	Science			
Course ID: ÚINF/ JAC1/15	Course name: Programming language C			
Course type, scope Course type: Pract Recommended co Per week: 2 Per st Course method: p	and the method: ice urse-load (hours): udy period: 28 resent			
Number of ECTS c	redits: 2			
Recommended sem	ester/trimester of the course: 1., 3.			
Course level: I., II.				
Prerequisities:				
Conditions for cour Practics attendance Final project.	rse completion: and activity. Home assigment			
Learning outcomes The student will gai is the primary system components, as well from the simple lang in the management	: n the ability to create source code files in the C programming language, which n programming language used in the creation of operating systems and system as firmware for embedded devices. The aim of the exercise is to guide students guage constructs to a full understanding of working with pointers and their use of static and dynamic memory.			
 Brief outline of the 1. Short overview of execution. 2. Variables and dat 3. Cycles, condition 	course: Flanguage history, explanation of terms, code compilation, linking and program a types, unary, binary and ternary operations, operator precedence. s. Structures, unions and enumerators.			
 Functions. Pointers - concep Fields - principle Dynamic memory N-dimensional fields Text strings. Input and output Dynamic fields Basic operations Pointer to a funct Compiling a pro- 	t, implementation, pointer arithmetic. , implementation. y allocation. elds and pointers. t, command line arguments, process return codes. and structures. s with regular files. ction. ogram from source code using the "make" utility.			
Recommended liter 1. KERNIGHAN, E 2006. ISBN:802510 2. PRATA_Stephen	ature: Brian W., Dennis M. RITCHIE. Programovací jazyk C. Brno: Computer Press, 1897X. C. Primer Plus, 6th Edition, Addison-Wesley Professional, 2014, ISBN			

2. PRATA, Stephen. C Primer Plus. 6th Edition. Addison-Wesley Professional, 2014. ISBN 9780321928429.

3. SEACORD, Robert C. Effective C: An Introduction to Professional C Programming. San Francisco, United States: No Starch Press, 2020. ISBN 9781718501041.

Course language:

Slovak or English

Notes:

Course assessment

Total number of assessed students: 250

А	В	С	D	Е	FX
37.2	18.8	15.2	15.2	9.6	4.0
Provides: RNDr. PhDr. Peter Pisarčík, Mgr. Patrik Pekarčík					

Date of last modification: 08.10.2021

University: P. J. Šafá	University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	cience				
Course ID: KPPaPZ/PPgU/15	Course name: Psychology and Educational Psychology				
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 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 94-100 B 93-87 C 86-80 D 79-73 E 72- 66 FX 65 -0 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.				
Learning outcomes: Students will be able Students will be able psychological concep Students will be able Students will be able	to show understanding of the human behaviour in educational situations. le to describe, explain and justify possible teachers' decisions by using ots, 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				

behaviour in response to educational environment.

Students will be able to explain the desired data-based modification of adolescents' behaviour to bring an all-round development of his personality and school performance, to explain the desired data-based modification of the behaviour of adolescents with educational problems, with disadvantages.

Brief outline of the course:

Introduction: The content of the course is based on current knowledge of psychological disciplines, especially pedagogical and school psychology.

Teaching is realized by a combination of lectures with engaging narrative interpretation and seminars using interactive, experiential methods, discussion and open communication with mutual respect, support of independence, activity and motivation of students.

Syllabus: The subject and goals of psychology and educational psychology. Professional forms of help in school practice.

Implementation of psychological concepts of personality into school practice (Classical and contemporary psychoanalytic 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: 1625

А	В	С	D	Е	FX
11.2	19.88	23.75	22.22	20.43	2.52

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

Date of last modification: 24.06.2022

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚINF/ PPU1a/15	JINF/ Course name: Running practice			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	e: 2.		
Course level: II.				
Prerequisities:				
Conditions for course completion: Conditions for continuous evaluation: Active participation in the selected type of internship based on the instructions given by the internship supervisor. Conditions for the final evaluation: Evaluation of the student's approach to the internship and the work performed in the internship by the internship supervisor.				
Learning outcomes: Experiences with the	implementation of a selecte	ed type of internship.		
 Brief outline of the course: The exact content of the internship is specified by the internship supervisor. Students choose from a menu of topics presented by the course administrator. Typical topics of practice are: 1. assistance in the realization of exercises for yunger studnets, providing feedback to students on submitted homeworks 2. assistance in the installation and maintenance of computer and network infrastructure at UPJŠ 3. realizations of courses for working with specific software 4. creation of overviews from freely available sources 				
Recommended literature: The study or technical literature is determined individually depending on the focus of the internship by the internship supervisor.				
Course language: Slovak or English				
Notes:				
Course assessment Total number of assessed students: 203				
	abs	n		
	97.54	2.46		

Provides: Ing. Miron Kuzma, PhD.

Date of last modification: 23.11.2021

University	D	ΙČα	fárik	Unive	roity	in K	očica
University	г.,	J. 30	IIalik	Unive	ISILY		JSICE

Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Scheduled practice teaching
MPPb/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 credits: 1

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities: KPE/MPPa/15 and KPE/PDU/15 and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)

Conditions for course completion:

- 1. Compulsory attendance during the organisational and informational seminar.
- 2. Compulsory attendance: sitting in on classes, analytical classes at training schools.
- 3. Sitting in on classes and analytical classes taught by supervising teachers -11x.
- 4. Complete 1 independent teaching session and analytical class under supervision.
- 5. Submitted Scheduled practice teaching (SPT) documentation.

(Sitting-in records, Written class preparation, List of sitting-in sessions and trainee's performance during SPT, SPT report, Assessment of the trainee's pedagogical performance during SPT).

Learning outcomes:

The student can purposefully perceive and interpret phenomena observed during chemistry classes in terms of subject didactics and psychodidactics. Confront their own preconcepts pertaining to subject didactics and psychodidactics with the actual teachers' concepts in practice. Gain motivation for further study of the respective disciplines in terms of their own specialisation and for purposeful development of professional competences. Apply didactic skills to teach chemistry by designing a lesson project and teaching it in practice.

Brief outline of the course:

Students observe the process of teaching the subject of chemistry in primary school and secondary school and analyze it with supervising teacher. The internship takes place continuously during the semester. It is included in the timetable once a week at time 1-3. lessons at primary and secondary schools. The first two hours students observe/teach, the third lesson is an analysis.

Observation, perception, and analysis of subject-specific and psychodidactic phenomena in the way chemistry is taught at the training schools. Written evaluation and theoretical generalisation of the phenomena observed during the classes. Didactic Scheduled practice teaching analysis. Analysis of the perceived phenomena, theoretical generalisation, and comparison of the findings against theory. Written class preparation for teaching a lesson in chemistry. Trainee's teaching performance.

Recommended literature:

Current chemistry textbooks for primary and secondary schools in the Slovak Republic.

Course language:

Notes:

Course assessment Total number of assessed students: 313				
abs	n			
100.0	0.0			
Provides: RNDr. Ivana Sotáková, Ph.D., doc. RNDr. Mária Ganajová, CSc.				
Date of last modification: 26.10.2021				
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.				

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	science
Course ID: ÚINF/ MPPb/15	Course name: Scheduled practice teaching
Course type, scope a Course type: Practi Recommended cou Per week: Per stuc Course method: pro	and the method: ce rse-load (hours): ly period: 36s esent
Number of ECTS cr	edits: 1
Recommended seme	ester/trimester of the course: 2.
Course level: II.	
Prerequisities: KPE/	MPPa/15 and KPE/PDU/15 and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)
Conditions for cours Conditions for ongoin 1. Observations for 1 2. Independent leadin 3. Participation in 6 a 4. Participation in a for Conditions for the fin 1. Submission of 1 for 3. Submission of a pro- 3. Submission of a lift 4. Submission of a re- Conditions for succe Fulfillment of all ong	se completion: ng evaluation: 1 lessons of the subject of informatics. ng 1 lesson from the subject of informatics. analyzes from lessons. reflexive colloquium with a didactician of informatics. nal evaluation: observation records. roject of preparation for a lesson. st of observations and own lesson of the trainee. luation of pedagogical output of the trainee. eport on ongoing pedagogical practice. ssful completion of the course: going and final assignments.
Learning outcomes: Students acquire kno the subject of inform first experience with	wledge by observing the practical application of teaching skills for teaching atics and get to know the organization of school work. They also acquire their the practical implementation of a informatics lesson.
Brief outline of the of Students observe the it with teacher trainer is scheduled once a w The first two lessons under the guidance of	process of teaching informatics at secondary and primary school and analysed r. Practice takes place continuously during the course of the semester. Practice week at the time of first to third lesson in schools. are students observing/teaching, the third lesson is for analysis of the first two of a teacher trainer.
Recommended litera KOSOVÁ, Beata, Al učiteľov [online]. Ba Bystrica, 226 pp. [cit publikacie.umb.sk/pt	ature: lena TOMENGOVÁ et al., 2015. Profesijná praktická príprava budúcich Inská Bystrica: Vydavateľstvo Belianum, Univerzita Mateja Bela, Banská ted. 2021-7-28]. ISBN 978-80-557-0860-7. Available from: https:// ublication/publicationFileDownload.php?ID=18667

OROSOVÁ, Renáta and Zuzana BOBEROVÁ, 2016. Pregraduálna príprava učiteľov: Organizácia pedagogickej praxe na UPJŠ [online]. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 142 pp. [cited 2021-7-28]. ISBN 978-80-8152-460-8. Available from: https:// unibook.upjs.sk/sk/pedagogika/342-pregradualna-priprava-ucitelov-organizacia-pedagogickejpraxe-na-upjs BOBEROVÁ, Zuzana, 2017. Začínajúci učiteľ a školská legislatíva I. [online]. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 104 pp. [cited 2021-7-28]. ISBN 978-80-8152-490-5. Available from: https://unibook.upjs.sk/sk/pedagogika/398-zacinajuci-ucitela-skolska-legislativa-i

Current informatics textbooks for primary and secondary schools in Slovakia.

Course language:

Slovak

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Total number of assessed students: 72

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 01.08.2021

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚTVŠ/ Course name: Seaside Aerobic Exercise ÚTVŠ/CM/13 Course name: Seaside Aerobic Exercise					
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:					
Course level: I., II.					
Prerequisities:					
Conditions for course completion: Completion: passed Condition for successful course completion: - active participation in line with the study rule of procedure and course guidelines - effective performance of all tasks- aerobics, water exercise, yoga, Pilates and others					
Learning outcomes: Content standard: The student demonstrates relevant knowledge and skills in the field, which content is defined in the course syllabus and recommended literature. Performance standard: Upon completion of the course students are able to meet the performance standard and: - perform basic aerobics steps and basics of health exercises, - conduct verbal and non-verbal communication with clients during exercise, - organise and manage the process of physical recreation in leisure time					
 Brief outline of the course: Brief outline of the course: Basic aerobics – low impact aerobics, high impact aerobics, basic steps and cuing Basics of aqua fitness Basics of Pilates Health exercises Bodyweight exercises Swimming Relaxing yoga exercises Power yoga Yoga relaxation Final assessment Students can engage in different sport activities offered by the sea resort – swimming, rafting, volleyball, football, table tennis, tennis and other water sports in particular. 					
Recommended literature: 1. BUZKOVÁ, K. 2006. Fitness jóga. Praha: Grada. 167 s.					

2. ČECHOVSKÁ, I., MILEROVÁ, H., NOVOTNÁ, V. Aqua-fitness. Praha: Grada. 136 s. 3. EVANS, M., HUDSON, J., TUCKER, P. 2001. Umění harmonie: meditace, jóga, tai-či, strečink. 192 s. 4. JARKOVSKÁ, H., JARKOVSKÁ, M. 2005. Posilováni s vlastním tělem 417 krát jinak. Praha: Grada. 209 s. 5. KOVAŘÍKOVÁ, K. 2017. Aerobik a fitness. Karolium, 130 s. **Course language:** Slovak language Notes: **Course assessment** Total number of assessed students: 54 abs n 11.11 88.89 Provides: Mgr. Agata Dorota Horbacz, PhD. **Date of last modification:** 29.03.2022 Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.

University: P. I. Šeférik University in Kočice					
Faculty Faculty	of Science				
Course D. ÚCH		mar Salaatad Ta	niag in Ingraani	a Chamistry	
VKAU/04	tv/ Course na	Course name: Selected Topics in Inorganic Chemistry			
Course type, sco Course type: La Recommended Per week: 2 / 1 Course method	pe and the met ecture / Practice course-load (h Per study perio : present S credits: 5	hod: ours): od: 28 / 14			
Recommended s	emester/trimes	ter of the cours	e: 3.		
Course level: II.					
Prerequisities:					
Conditions for co	ourse completi	on:			
Learning outcon	nes:				
Brief outline of t	he course:				
Recommended literature: Greenwood, N.N., Earnshaw, A.: Chemistry of the elements I and II, Pergamon Press N.Y., 1993. C. N. R. Rao, A. Muller, A. K. Cheetham: The Chemistry of Nanomaterials (Vol. 1,2), Wiley- VCH,2006. Atkins O., Overton T., Rourke J., Weller M., Armstrong F.: Inorganic Chemistry, University Press, Oxford, 2006.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 96					
A	В	С	D	Е	FX
46.88	29.17	19.79	2.08	2.08	0.0
Provides: prof. RNDr. Vladimír Zeleňák, DrSc.					
Date of last modification: 08.09.2021					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University: P. J. Šafárik University in Košice					
Faculty: Facult	y of Science				
Course ID: ÚC VKOCH/03	HV/ Course na	Course name: Selected topics in organic chemistry			
Course type, sc Course type: 1 Recommended Per week: 2 / Course metho	cope and the me Lecture / Practice d course-load (h 1 Per study peri d: present	thod: c ours): od: 28 / 14			
Number of EC	TS credits: 5				
Recommended	semester/trimes	ster of the cours	e: 3.		
Course level: II	[
Prerequisities:					
Conditions for	course completi	ion:			
Learning outcomes:					
Brief outline of the course:					
Recommended	Recommended literature:				
Course language:					
Notes:					
Course assessment Total number of assessed students: 115					
А	В	С	D	Е	FX
36.52	25.22	19.13	13.04	6.09	0.0
Provides: doc. RNDr. Ján Imrich, CSc.					
Date of last modification: 10.09.2021					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					
Faculty: Faculty of Science

Course ID: ÚINF/	Course name: Seminar to diploma theses in informatics XI
DSU1a/15	

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: ÚINF/PDSI1/15 or ÚINF/PDSI2/22

Conditions for course completion:

Conditions for ongoing evaluation:

- 1. Creation of a glossary of terms and a concept map for teaching a selected topic.
- 2. Creation of a collection of solved tasks for teaching the selected topic.
- 3. Creation of learning objectives and a graded system of tasks for teaching a selected topic.

Conditions for the final evaluation:

- 1. Update and presentation of the thesis website.
- Conditions for successful completion of the course:

Fulfillment of all ongoing and final assignments.

Learning outcomes:

The student will gain an overview of the issues of pedagogical research in the field of teaching informatics.

The student continuously works on his / her thesis (analyzes the content of teaching a selected topic, creates a glossary of terms and a concept map, creates a collection of tasks and then a system of graded tasks) and presents the ongoing results of his / her thesis.

Brief outline of the course:

1. Pedagogical research in the field of teaching informatics (analysis of selected scientific studies with discussion).

2. Pedagogical research in the field of teaching informatics (analysis of selected scientific studies with discussion).

3. Pedagogical research in the field of teaching informatics (design of own pedagogical action research).

4. Analysis of the content of teaching of the selected topic (creation of a glossary of terms and a concept map).

5. Analysis of the content of teaching of the selected topic (creation of a glossary of terms and a concept map).

- 6. Creation of a collection of solved problems for teaching the selected topic.
- 7. Creation of a collection of solved problems for teaching the selected topic.
- 8. Creation of a collection of solved problems for teaching the selected topic.
- 9. Creation of learning objectives and a graded system of tasks for teaching the selected topic.

- 10. Creation of learning objectives and a graded system of tasks for teaching the selected topic.
- 11. Presentations of ongoing results of students' theses, updating of thesis websites.
- 12. Presentations of ongoing results of students' theses, updating of thesis websites.

Recommended literature:

MEŠKO, Dušan, Dušan KATUŠČÁK and Ján FINDRA, 2013. Akademická príručka: Chcete byť úspešní na vysokej škole? 3. vydanie. Osveta, 495 pp. ISBN 9788080633929.

KATUŠČÁK, Dušan, 2013. Ako písať záverečné a kvalifikačné práce. Enigma, 162 pp. ISBN 8089132454.

COMPUTER SCIENCE TEACHERS ASSOCIATION. Home Page

Computer Science Teachers Association [online]. [cited 2021-7-30]. Available from: https://www.csteachers.org/

ASSOCIATION FOR COMPUTING MACHINERY. The ACM Digital Library [online]. [cited 2021-7-30]. Available from: https://dl.acm.org/

SPRINGER NATURE SWITZERLAND AG. Home - Springer [online]. [cited 2021-7-30]. Available from: https://link.springer.com/

BAČÍKOVÁ, Mária, Anna JANOVSKÁ and Oľga OROSOVÁ, 2019. Základy metodológie pedagogicko-psychologického výskumu: Sprievodca pre študentov učiteľstva [online]. 2. doplnené vydanie. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 195 pp. [cited 2021-7-29]. ISBN 978-80-8152-805-7. Available from: https://unibook.upjs.sk/sk/filozoficka-fakulta/1266-zaklady-metodologie-pedagogicko-psychologickeho-vyskumu-sprievodca-pre-

studentov-ucitelstva

Informatics in Education. Vilnius University Institute of Data Science and Digital Technologies. ISSN 2335-8971 (online). Also available from: https://infedu.vu.lt/journal/INFEDU Matematika–fyzika–informatika. Praha: PROMETHEUS. ISSN 1805-7705. Also available from:

http://www.mfi.upol.cz/index.php/mfi/index

UNIVERZITA MATEJA BELA V BANSKEJ BYSTRICI, TECHNICKÁ UNIVERZITA V LIBERCI, 2021. Zborníky medzinárodnej konferencie DidInfo (od roku 2011) [online]. [cited 2021-7-30]. Available from: http://www.didinfo.net/minule-rocniky

CENTRUM VEDECKO-TECHNICKÝCH INFORMÁCIÍ SR. Centrálny register záverečných a kvalifikačných prác [online]. [cited 2021-7-30]. Available from: https://cms.crzp.sk/

Course language:

Slovak and partly English due to selected information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

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0.0

Course assessment

Total number of assessed students: 12

a05	
100.0	

aha

100.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 01.08.2021

University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	Science			
Course ID: ÚINF/ Course name: Seminar to diploma theses in informatics XI DSU1b/15				
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 ci	redits: 2			
Recommended sem	ester/trimester of the course: 3.			
Course level: II.				
Prerequisities: ÚINI	F/DSU1a/15			
Conditions for cour Conditions for ongoin 1. Creation of diagno 2. Creation of teachin 3. Creating preparatin 4. Evaluation of pilo	se completion: ng evaluation: ostic tools for teaching selected topics. ng aids for teaching selected topics. on for teaching selected topics. t teaching.			

Conditions for the final evaluation:

1. Update and presentation of the thesis website.

Conditions for successful completion of the course:

Fulfillment of all ongoing and final assignments.

Learning outcomes:

The student continuously works on his / her thesis (creates diagnostic tools, teaching aids, thematic plan, preparation for teaching, implements and evaluates pilot teaching) and presents the ongoing results of his /her thesis.

Brief outline of the course:

1. Creation of diagnostic tools for teaching the selected topic (didactic test, evaluation section of the project).

2. Creation of diagnostic tools for teaching the selected topic (didactic test, evaluation section of the project).

- 3. Creation of teaching aids (reference materials, work files, tutorials, instructional videos).
- 4. Creation of teaching aids (reference materials, work files, tutorials, instructional videos).
- 5. Creation of teaching aids (reference materials, work files, tutorials, instructional videos).
- 6. Creating a thematic plan. Creation of preparations and implementation of pilot teaching.
- 7. Creation of preparations and implementation of pilot teaching.
- 8. Creation of preparations and implementation of pilot teaching.

9. Evaluation of pilot teaching (results of teaching, identified misconceptions of students, interesting student solutions, other observations from teaching).

10. Evaluation of pilot teaching (results of teaching, identified misconceptions of students, interesting student solutions, other observations from teaching).

11. Presentations of ongoing results of students' theses, updates of diploma websites.

12. Presentations of ongoing results of students' theses, updates of diploma websites.

Recommended literature:

MEŠKO, Dušan, Dušan KATUŠČÁK and Ján FINDRA, 2013. Akademická príručka: Chcete byť úspešní na vysokej škole? 3. vydanie. Osveta, 495 pp. ISBN 9788080633929.

KATUŠČÁK, Dušan, 2013. Ako písať záverečné a kvalifikačné práce. Enigma, 162 pp. ISBN 8089132454.

COMPUTER SCIENCE TEACHERS ASSOCIATION. Home Page

Computer Science Teachers Association [online]. [cited 2021-7-30]. Available from: https://www.csteachers.org/

ASSOCIATION FOR COMPUTING MACHINERY. The ACM Digital Library [online]. [cited 2021-7-30]. Available from: https://dl.acm.org/

SPRINGER NATURE SWITZERLAND AG. Home - Springer [online]. [cited 2021-7-30]. Available from: https://link.springer.com/

BAČÍKOVÁ, Mária, Anna JANOVSKÁ and Oľga OROSOVÁ, 2019. Základy metodológie pedagogicko-psychologického výskumu: Sprievodca pre študentov učiteľstva [online]. 2. doplnené vydanie. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 195 pp. [cited

2021-7-29]. ISBN 978-80-8152-805-7. Available from: https://unibook.upjs.sk/sk/filozofickafakulta/1266-zaklady-metodologie-pedagogicko-psychologickeho-vyskumu-sprievodca-prestudentov-ucitelstva

Informatics in Education. Vilnius University Institute of Data Science and Digital Technologies. ISSN 2335-8971 (online). Also available from: https://infedu.vu.lt/journal/INFEDU Matematika, fuzika, informatika, Proha: PROMETHEUS, ISSN 1805-7705, Also available from:

Matematika–fyzika–informatika. Praha: PROMETHEUS. ISSN 1805-7705. Also available from: http://www.mfi.upol.cz/index.php/mfi/index

UNIVERZITA MATEJA BELA V BANSKEJ BYSTRICI, TECHNICKÁ UNIVERZITA V LIBERCI, 2021. Zborníky medzinárodnej konferencie DidInfo (od roku 2011) [online]. [cited 2021-7-30]. Available from: http://www.didinfo.net/minule-rocniky

CENTRUM VEDECKO-TECHNICKÝCH INFORMÁCIÍ SR. Centrálny register záverečných a kvalifikačných prác [online]. [cited 2021-7-30]. Available from: https://cms.crzp.sk/

Course language:

Slovak and partly English due to selected information sources

Notes:

By default, teaching is carried out face to face. If this is not possible (eg due to a pandemic), teaching is provided at a distance through video conferencing programs and LMS.

Course assessment

Total number of assessed students: 31

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 01.08.2021

University: F. J. Salarik University in Kosice	University:	P. J.	Šafárik	University in Košice	
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Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Special Practising the School Experiments I
SPC1a/03	

Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:

1. Participations in exercises (also applies to tohe online form of teaching). Students are required to participate in laboratory exercises. The students can excuse themself (incapacity for work, family reasons, etc.) for a maximum of two exercises during the semester without the need for replacement. In the case of a longer-term justified absence (for example due to incapacity for work), the student will be assigned an alternative form of mastering the missed curriculum.

2. Active participation in class. Students are active – they master the knowledge of general and inorganic chemistry, they know the working procedures for experiments, which include worksheets, cooperation and communication in pairs/groups and presentation of the results of their work. Learning materials will be available through the e-learning portal LMS Moodle (direct link to the website: https://lms.upjs.sk/) in the course Special Practising the School Experiments I (ÚCHV/ SPC1a/03c).

3. Outputs – presentation of experiments for primary and secondary school. There will be two outputs focused on demonstration experiments on selected topics of primary and secondary school chemistry.

4. A part of the student's assessment in the subject is also a written test, given in the 8th week of teaching.

The final assessment in the course consists of the sum of points obtained for:

1. Active preparation for exercises (0-30 points).

2. Outputs – presentation of experiments for primary and secondary schools (0-20 points).

3. Written test (0-50 points).

Conditions for successful completion of the course: In order to obtain an A rating, it is necessary to obtain at least 85 points in total, to obtain an B rating at least 75 points, to obtain a C rating at least 65 points, to obtain a D rating at least 55 points and to obtain an E rating at least 45 points.

Learning outcomes:

The aim of the course is to acquire and consolidate basic experimental skills and habits in work techniques in school demonstration experiments with an emphasis on the safety and health of students in student experimental work. Students will also acquire basic knowledge and skills in the field of inquiry-based learning and work with computer-based chemical experiments.

Brief outline of the course:

1. General instructions for work in a school chemical laboratory.

2. Basic chemical concepts.

3. Basic chemical laws and properties of substances. Solubility of substances. Solutions. Determination of physical and chemical constants.

4. Energy changes in chemical reactions. Factors affecting the rate of chemical reactions.

5. Experiments on the topic of oxygen, hydrogen, air.

6. Halogens and their compounds.

7. Chalcogens and their compounds.

8. Carbon, nitrogen and their compounds.

9. Acids and bases.

10. Chemistry of everyday life in school experiments.

11. Environmental chemistry. Interesting school experiments.

Recommended literature:

1. GANAJOVÁ, M., DZURILLOVÁ, M.: Školské pokusy z chémie I. Košice: UPJŠ v Košiciach, Prírodovedecká fakulta, 2005. ISBN 80-7097-617-9.

2. KIREŠ, M., JEŠKOVÁ, Z., GANAJOVÁ, M., KIMÁKOVÁ, K.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť A. Bratislava: ŠPÚ, 2016. ISBN 978-80-8118-155-9. https://www.statpedu.sk/files/articles/nove_dokumenty/ucebnice-metodiky-publikacie/ badatelske-aktivity/01cast_a_web.pdf

3. GANAJOVÁ, M., KRISTOFOVÁ, M.: Bádateľské aktivity v prírodovednom vzdelávaní. Časť B. Ukážky vytvorených metodických a pracovných materiálov z predmetu Chémia. Bratislava: ŠPÚ, 2016. ISBN 978-80-8118-155-9.

https://www.statpedu.sk/files/articles/nove_dokumenty/ucebnice-metodiky-publikacie/badatelske-aktivity/04cast_b_chemia_web.pdf

4. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre základné školy. Doplnené vydanie. Bratislava: CVTI SR, 2021. ISBN 978-80-8240-007-9.

https://vzdelavanie.itakademia.sk/vystupy/zim-che-zs.pdf

5. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre stredné školy. Doplnené vydanie. Bratislava: CVTI Bratislava: CVTI SR, 2021. ISBN 978-80-8240-008-6.

https://vzdelavanie.itakademia.sk/vystupy/zim-che-ss.pdf

6. Inovovaný štátny vzdelávací program pre 2. stupeň ZŠ. Človek a príroda. Chémia. https://www.statpedu.sk/files/articles/dokumenty/inovovany-statny-vzdelavaci-program/ chemia_nsv_2014.pdf

7. Inovovaný štátny vzdelávací program pre gymnázia so štvorročným a päťročným vzdelávacím programom. Človek a príroda. Chémia. https://www.statpedu.sk/files/articles/dokumenty/ inovovany-statny-vzdelavaci-program/chemia g 4 5 r.pdf

8. Učebnice chémie pre základné školy a gymnáziá.

9. Školský informačný systém. Chémia. http://kekule.science.upjs.sk/chemia/index.htm

10. Virtuálne prírodovedecké laboratórium. http://www.virtual-lab.sk/videozaznamy.html

11. Studium chemie. Portál PřF UK pro podporu vyuky chemie na SŠ a ZŠ.

https://studiumchemie.cz/

12. E-ChemBook – Multimediální učebnice chemie. https://www.youtube.com/user/ VideosChemWeb/videos

13. E – learning kurz: Špeciálne praktikum školských pokusov I (ÚCHV/SPC1a/03c) https://lms.upjs.sk/

Course language:

Notes:

Course assessment Total number of assessed students: 296					
А	В	С	D	Е	FX
67.91 24.66 6.42 1.01 0.0 0.0					0.0
Provides: doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.					
Date of last modification: 09.02.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Special practising the school experiments II
SPC1b/03	

Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42

Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

1. Pressence is complusory. In the case of long-term absence can student realize experiments in alternative term.

2. Students activity - knowledges about reaction mechanisms and experimental skills to realize experiments.

3. Make reports of every exercise.

Classification:

1. Short exams on the beginning of every exercise (max 35 points)

2. Reports of every exercise (max 15 points)

3. Two exams (each max 25 points, min 51%)

- A: 100 91%
- B: 90 81%
- C: 80 71%
- D: 70 61%

E: 60 – 51%

Learning outcomes:

The students will become familiar with the basic laboratory skills and techniques that they can apply in demonstrating experiments in their future career as a teacher. The rules of healthy and safety laboratory work are emphasised. Students will apply their knowledges and sklills in exploration activities in the topic of Natural compounds on the basis of 5E. They can motivate students using chemical experiments (https://studiumchemie.cz/, https://www.youtube.com/user/VideosChemWeb/videos, http://www.e-chembook.eu/).

Brief outline of the course:

1. Qualitative analysis of organic compounds - confirmation reactions for carbon, hydrogen, halogens and nitrogen.

2. Alkanes - preparation of methane.

3. Alkenes - preparation of ethene and its confirmation using its addition reactions; addition reactions of β -carotene.

4. Alkynes - preparation of acetylene and its derivatives, confirmation reactions of acetylene.

5. Aromatic hydrocarbons and their derivatives – preparation of benzene, aromatic electrophilic substitution reactions – nitration of toluene and naphthalene, preparation of benzyl bromide.

6. Halogenoderivatives – preparation of chloroethane and iodoform.

7. Hydroxoderivatives – oxidation reactions of ethanol, ability to distinguish methanol from ethanol, confirmation reaction of glycerol, preparation of sodium ethanolate and sodium phenoxide, bromation of phenol, colour reactions of phenols and naphtols.

8. Ethers – properties of diethyl ether.

9. Carbonyl compounds - preparation of formaldehyde and acetaldehyde, confirmation reactions of aldehydes and ketones.

10. Carboxylic acids and their derivatives – esterification reactions, reaction of carboxylic acids with magnesium, preparation and properties of soap.

11. Natural compounds – carbohydrates, proteins, amino acids, lipids. Exploration activities on the topic of Natural compounds: fermentation, bioglue, murder and food

12. Natural pH indicator - study of its colur changes depending on pH values.

13. Column chromatography -acetylation reaction of ferrocene - its preparation and separation of the obtained products by column chromatography.

14. Isolation of the fragrant components using steam distillation.

15. Everyday life chemistry.

Recommended literature:

1. SMIK, L., MERVA, L., BRUTOVSKÁ, A: Technika a didaktika školských pokusov Košice: Vyd. Rektorát UPJŠ, 1988.

2. SMIK, L. a kol.: Špeciálna didaktika chémie II., Košice: Vyd. Rektorát UPJŠ, 1984.

3. Špeciálne praktikum školských pokusov z organickej chémie – Interné skriptá.

4. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre základné školy. 1. doplnené vydanie. Bratislava: CVTI SR, 2021. https://vzdelavanie.itakademia.sk/vystupy/zim-che-zs.pdf

5. GANAJOVÁ a kol.: Zbierka inovatívnych metodík z chémie pre stredné školy. 1. doplnené vydanie. Bratislava: CVTI SR, 2021. https://vzdelavanie.itakademia.sk/vystupy/zim-che-ss.pdf

6. Inovovaný štátny vzdelávací program pre 2. stupeň ZŠ. Človek a príroda. Chémia.

 $https://www.statpedu.sk/files/articles/dokumenty/inovovany-statny-vzdelavaci-program/chemia_nsv_2014.pdf$

7. Inovovaný štátny vzdelávací program pre gymnázia so štvorročným a päťročným vzdelávacím programom. Človek a príroda. Chémia. https://www.statpedu.sk/files/articles/dokumenty/ inovovany-statny-vzdelavaci-program/chemia g 4 5 r.pdf

8. Učebnice chémie pre základné školy a gymnáziá.

9. Studium chemie. Portál PřF UK pro podporu vyuky chemie na SŠ a ZŠ. https:// studiumchemie.cz/

10. E-ChemBook – Multimediální učebnice chemie. https://www.youtube.com/user/ VideosChemWeb/videos

Course language:

slovak language

Notes:

Course assessment					
Total number of	f assessed studen	ts: 291			
А	В	С	D	Е	FX
45.7	28.18	16.15	6.87	3.09	0.0

Provides: RNDr. Jana Špaková Raschmanová, PhD., RNDr. Ján Elečko, PhD., RNDr. Slávka Hamuľaková, PhD.

Date of last modification: 21.01.2022

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚTVŠ/ TVa/11Course name: Sports Activities I.		
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 seme	ester/trimester of the course: 1.	
Course level: I., I.II., II.		
Prerequisities:		

Conditions for course completion:

Min. 80% of active participation in classes.

Learning outcomes:

Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.

Brief outline of the course:

Brief outline of the course:

Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess.

In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness. In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

Recommended literature:

BENCE, M. et al. 2005. Plávanie. Banská Bystrica: FHV UMB. 198s. ISBN 80-8083-140-8. [online] Dostupné na: https://www.ff.umb.sk/app/cmsFile.php?disposition=a&ID=571 BUZKOVÁ, K. 2006. Fitness jóga, harmonické cvičení těla I duše. Praha: Grada. ISBN 8024715252.

JARKOVSKÁ, H, JARKOVSKÁ, M. 2005. Posilování s vlastním tělem 417 krát jinak. Praha: Grada. ISBN 9788024757308.

KAČÁNI, L. 2002. Futbal:Tréning hrou. Bratislava: Peter Mačura – PEEM. 278s. ISBN 8089197027.

KRESTA, J. 2009. Futsal.Praha: Grada Publishing, a.s. 112s. ISBN 9788024725345.

LAWRENCE, G. 2019. Power jóga nejen pro sportovce. Brno: CPress. ISBN 9788026427902. SNER, Wolfgang. 2004. Posilování ve fitness. České Budějovice: Kopp. ISBN 8072322141. STACKEOVÁ, D. 2014. Fitness programy z pohledu kinantropologie. Praha: Galén. ISBN 9788074921155.

VOMÁČKO, S. BOŠTÍKOVÁ, S. 2003. Lezení na umělých stěnách. Praha: Grada. 129s. ISBN 8024721743.

Course language:

Slovak language

Notes:

Course assessment

Total number of assessed students: 14548

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
86.46	0.07	0.0	0.0	0.0	0.05	8.41	5.02

Provides: Mgr. Agata Dorota Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., MPH, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Mgr. Richard Melichar, Mgr. Petra Tomková, PhD., MUDr. Peter Dombrovský

Date of last modification: 29.03.2022

University: P. J. Šafá	rik University in Košice				
Faculty: Faculty of S	cience				
Course ID: ÚTVŠ/ Course name: Sports Activities II. TVb/11					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of ECTS cr	edits: 2				
Recommended seme	ster/trimester of the course: 2.				
Course level: I., I.II.,	II.				
Prerequisities:					
Conditions for cours active participation in	e completion: n classes - min. 80%.				
Learning outcomes: Sports activities in all They have a great im enables students to s improve.	their forms prepare university students for their professional and personal life. pact on physical fitness and performance. Specialization in sports activities strengthen their relationship towards the selected sport in which they also				
Brief outline of the c Within the optional s University provides badminton, body form indoor football, S-M In the first two seme and particularities of physical condition, c Last but not least, the means of a special pr In addition to these physical education tra the premises of the fac	ourse: ubject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik for students the following sports activities: aerobics, aikido, basketball, n, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, systems, step aerobics, table tennis, tennis, volleyball and chess. sters of the first level of education students will master basic characteristics individual sports, motor skills, game activities, they will improve level of their oordination abilities, physical performance, and motor performance fitness. important role of sports activities is to eliminate swimming illiteracy and by ogram of medical physical education to influence and mitigate unfitness. sports, the Institute offers for those who are interested winter and summer ainings with an attractive program and organises various competitions, either at culty or University or competitions with national or international participation.				
Recommended literature: BENCE, M. et al. 2005. Plávanie. Banská Bystrica: FHV UMB. 198s. ISBN 80-8083-140-8. [online] Dostupné na: https://www.ff.umb.sk/app/cmsFile.php?disposition=a&ID=571 BUZKOVÁ, K. 2006. Fitness jóga, harmonické cvičení těla I duše. Praha: Grada. ISBN 8024715252.					

JARKOVSKÁ, H, JARKOVSKÁ, M. 2005. Posilování s vlastním tělem 417 krát jinak. Praha: Grada. ISBN 9788024757308.

KAČÁNI, L. 2002. Futbal:Tréning hrou. Bratislava: Peter Mačura – PEEM. 278s. ISBN 8089197027.

KRESTA, J. 2009. Futsal.Praha: Grada Publishing, a.s. 112s. ISBN 9788024725345.

LAWRENCE, G. 2019. Power jóga nejen pro sportovce. Brno: CPress. ISBN 9788026427902. SNER, Wolfgang. 2004. Posilování ve fitness. České Budějovice: Kopp. ISBN 8072322141. STACKEOVÁ, D. 2014. Fitness programy z pohledu kinantropologie. Praha: Galén. ISBN 9788074921155.

VOMÁČKO, S. BOŠTÍKOVÁ, S. 2003. Lezení na umělých stěnách. Praha: Grada. 129s. ISBN 8024721743.

Course language:

Slovak language

Notes:

Course assessment

Total number of assessed students: 13211

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
84.35	0.51	0.02	0.0	0.0	0.05	10.78	4.29

Provides: Mgr. Agata Dorota Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., MPH, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Mgr. Richard Melichar, Mgr. Petra Tomková, PhD., MUDr. Peter Dombrovský

Date of last modification: 29.03.2022

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	cience					
Course ID: ÚTVŠ/ TVc/11Course name: Sports Activities III.						
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of ECTS cr	edits: 2					
Recommended seme	ster/trimester of the course: 3.					
Course level: I., I.II.,	Ш.					
Prerequisities:						
Conditions for cours min. 80% of active p	e completion: articipation in classes					
Learning outcomes: Sports activities in all They have a great im enables students to s improve.	their forms prepare university students for their professional and personal life. pact on physical fitness and performance. Specialization in sports activities strengthen their relationship towards the selected sport in which they also					
Brief outline of the c Within the optional s University provides badminton, body forr indoor football, S-M In the first two seme and particularities of physical condition, c Last but not least, the means of a special pr In addition to these physical education tra the premises of the far	ourse: ubject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik for students the following sports activities: aerobics, aikido, basketball, n, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, systems, step aerobics, table tennis, tennis, volleyball and chess. sters of the first level of education students will master basic characteristics individual sports, motor skills, game activities, they will improve level of their oordination abilities, physical performance, and motor performance fitness. e important role of sports activities is to eliminate swimming illiteracy and by ogram of medical physical education to influence and mitigate unfitness. sports, the Institute offers for those who are interested winter and summer ainings with an attractive program and organises various competitions, either at culty or University or competitions with national or international participation					
Recommended litera BENCE, M. et al. 20 [online] Dostupné na	ature: 05. Plávanie. Banská Bystrica: FHV UMB. 198s. ISBN 80-8083-140-8. : https://www.ff.umb.sk/app/cmsFile.php?disposition=a&ID=571					

BUZKOVÁ, K. 2006. Fitness jóga, harmonické cvičení těla I duše. Praha: Grada. ISBN 8024715252.

JARKOVSKÁ, H, JARKOVSKÁ, M. 2005. Posilování s vlastním tělem 417 krát jinak. Praha: Grada. ISBN 9788024757308.

KAČÁNI, L. 2002. Futbal:Tréning hrou. Bratislava: Peter Mačura – PEEM. 278s. ISBN 8089197027.

KRESTA, J. 2009. Futsal. Praha: Grada Publishing, a.s. 112s. ISBN 9788024725345.

LAWRENCE, G. 2019. Power jóga nejen pro sportovce. Brno: CPress. ISBN 9788026427902. SNER, Wolfgang. 2004. Posilování ve fitness. České Budějovice: Kopp. ISBN 8072322141. STACKEOVÁ, D. 2014. Fitness programy z pohledu kinantropologie. Praha: Galén. ISBN 9788074921155.

VOMÁČKO, S. BOŠTÍKOVÁ, S. 2003. Lezení na umělých stěnách. Praha: Grada. 129s. ISBN 8024721743.

Course language:

Slovak language

Notes:

Course assessment

Total number of assessed students: 8879

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.62	0.07	0.01	0.0	0.0	0.02	4.25	7.03

Provides: Mgr. Marcel Čurgali, Mgr. Agata Dorota Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., MPH, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Mgr. Richard Melichar, Mgr. Petra Tomková, PhD., MUDr. Peter Dombrovský

Date of last modification: 29.03.2022

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	cience					
Course ID: ÚTVŠ/ TVd/11Course name: Sports Activities IV.						
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of ECTS cr	edits: 2					
Recommended seme	ster/trimester of the course: 4.					
Course level: I., I.II.,	П.					
Prerequisities:						
Conditions for cours min. 80% of active pa	articipation in classes					
Learning outcomes: Sports activities in all They have a great im enables students to s improve.	their forms prepare university students for their professional and personal life. pact on physical fitness and performance. Specialization in sports activities strengthen their relationship towards the selected sport in which they also					
Brief outline of the c Within the optional s University provides badminton, body form indoor football, S-M In the first two seme and particularities of physical condition, c Last but not least, the means of a special pr In addition to these physical education tra the premises of the fac	ourse: ubject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik for students the following sports activities: aerobics, aikido, basketball, n, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, systems, step aerobics, table tennis, tennis, volleyball and chess. sters of the first level of education students will master basic characteristics individual sports, motor skills, game activities, they will improve level of their coordination abilities, physical performance, and motor performance fitness. e important role of sports activities is to eliminate swimming illiteracy and by rogram of medical physical education to influence and mitigate unfitness. sports, the Institute offers for those who are interested winter and summer ainings with an attractive program and organises various competitions, either at culty or University or competitions with national or international participation.					
Recommended litera BENCE, M. et al. 20	iture: 05. Plávanie. Banská Bystrica: FHV UMB. 198s. ISBN 80-8083-140-8.					

[online] Dostupné na: https://www.ff.umb.sk/app/cmsFile.php?disposition=a&ID=571 BUZKOVÁ, K. 2006. Fitness jóga, harmonické cvičení těla I duše. Praha: Grada. ISBN 8024715252.

JARKOVSKÁ, H, JARKOVSKÁ, M. 2005. Posilování s vlastním tělem 417 krát jinak. Praha: Grada. ISBN 9788024757308.

KAČÁNI, L. 2002. Futbal:Tréning hrou. Bratislava: Peter Mačura – PEEM. 278s. ISBN 8089197027.

KRESTA, J. 2009. Futsal.Praha: Grada Publishing, a.s. 112s. ISBN 9788024725345.

LAWRENCE, G. 2019. Power jóga nejen pro sportovce. Brno: CPress. ISBN 9788026427902. SNER, Wolfgang. 2004. Posilování ve fitness. České Budějovice: Kopp. ISBN 8072322141. STACKEOVÁ, D. 2014. Fitness programy z pohledu kinantropologie. Praha: Galén. ISBN 9788074921155.

VOMÁČKO, S. BOŠTÍKOVÁ, S. 2003. Lezení na umělých stěnách. Praha: Grada. 129s. ISBN 8024721743.

Course language:

Slovak language

Notes:

Course assessment

Total number of assessed students: 5628

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
82.66	0.28	0.04	0.0	0.0	0.0	8.05	8.97

Provides: Mgr. Marcel Čurgali, Mgr. Agata Dorota Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., MPH, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Mgr. Richard Melichar, Mgr. Petra Tomková, PhD., MUDr. Peter Dombrovský

Date of last modification: 29.03.2022

University: P. J. Šafárik University in Košice						
Faculty: Faculty of Science						
Course ID: ÚCH SAZ1/15	Durse ID: ÚCHV/ Course name: Stereochemistry of Inorganic Compounds AZ1/15 Course name: Stereochemistry of Inorganic Compounds					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present						
Number of ECTS	S credits: 3					
Recommended se	emester/trimes	ster of the cours	e:			
Course level: II.						
Prerequisities:						
Conditions for course completion: Successful completion of two written tests (2 x 50b) in the middle and at the end of the semester. Final written test (100b) in the examination period. A minimum of 50% for each test is considered successful. The exact dates will be determined after mutual consultation between the teacher and the students. The rating scale is determined as follows: A (100-91%), B (90-81%), C (80-71%), D (70-61%) E (60-51%) Ex (50-0%)						
Learning outcom Gaining knowled	nes: ge of the struct	ure, isomerism a	nd stereochemist	ry of inorganic c	ompounds.	
Brief outline of the Molecular symmetry polyhedral-regular units, spin and ch	he course: etry, distributio ar, semi-regular arge correlation	on of electron pa , irregular, chem n, non-equivalen	irs on valence sh lical coordination ce of electron pai	nell, configuratio n polyhedra, seco irs, molecular geo	n of molecules, ondary building ometry	
Recommended literature: Kepert, D.L.: Inorganic stereochemistry, Sringer, 1982. Morris, D.G.: Stereochemistry, Royal Society of Chemistry, 2001 Schiermund, T.: Introduction to stereochemistry, Springer, 2021.						
Course language: SK - slovak						
Notes: The subject is carried out in person or, if necessary, remotely using the online platform Big Blue Button (BBB). The form of teaching is specified by the teacher at the beginning of the semester and updated continuously. A notebook is required for the exercises, as some assignments require data analysis in graphics programs.						
Course assessme Total number of a	nt assessed studen	ts: 31				
A	В	С	D	Е	FX	
64.52	16.13	12.9	6.45	0.0	0.0	

Provides: prof. RNDr. Vladimír Zeleňák, DrSc.

Date of last modification: 27.01.2022

University: P. J. Šafá	rik University in Košice				
Faculty: Faculty of S	cience				
Course ID: ÚCHV/ Course name: Structure Analysis STA1/03					
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 28 esent				
Number of ECTS cr	edits: 6				
Recommended seme	ster/trimester of the course:				
Course level: II.					
Prerequisities:					
Conditions for cours 2 written tests during The final evaluation i The student must obta The same is valid also	e completion: semester and written examination. is based on the results from the tests (30 %) and written examination (70 %). ain at least 51% of each test and exam. o for online education.				
Learning outcomes: Students get an over principles of difraction and they will learn ho	rview about the symmetry at the micro- and macrostructure level, about on and about diffraction methods used for the crystal structure determination ow to use the results of the crystal structure analysis in their own work.				
Brief outline of the c Macrostructure and m of the diffraction expe structural analysis. Th analysis, its use at wo	ourse: nicrostructure symmetry, individual work with space groups. Theoretical basis eriment. Practical aspects of crystal structure solution. Processing the results of neoretical basis, practical aspects and possibilities of X-ray powder diffraction ork of a chemist.				
Recommended litera Massa, W.: Crystal st Clegg, W. et al.: Crys Hahn, T.: Internationa Klug, H.P. & Alexand materials. John Wiley	nture: ructure determination, 2nd edition. Springer 2004. stal structure analysis. Principles and practice. Oxford University Press 2009. al tables for crystallography, Vol. A. Kluwer Academic Publishers 2002. der, L.E.: X-Ray diffraction procedures for polycrystalline and amorphous V & Sons, Inc. 1970.				
Course language: Slovak and English					
Notes: Teaching is carried ou teaching is specified	ut in person or, if necessary, online using the MS Teams tool. The form of by the teacher at the beginning of the semester, updated continuously.				

Course assessment Total number of assessed students: 144							
A B C D E FX							
27.08	27.08 15.97 29.17 20.14 6.94 0.69						
Provides: doc. RNDr. Ivan Potočňák, PhD.							
Date of last modification: 21.07.2022							
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.							

University: P. J. Šaf	University: P. J. Šafárik University in Košice					
Faculty: Faculty of	Science					
Course ID: ÚINF/ SVK1/15Course name: Student scientific conference						
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present						
Number of ECTS credits: 4						
Recommended semester/trimester of the course: 2., 4.						
Course level: I., II.						
Prerequisities						

Conditions for course completion:

It is required to be registered for the participation on the Student Scientific Conference (ŠVK) in accordance to the Statute of the Student Scientific Conference at PF UPJŠ and the specific conditions for participation in a given year, which are announced by the dean of the faculty. Within one year of the ŠVK, a student or a research team can register in one track only. It is also possible to apply with a written work that is an integral part of a bachelor's or master's thesis or a result of a student support program. The written work at ŠVK is the result of the student's own work or the work of the research team. It must not show elements of academic fraud and must meet the criteria of good research practice defined in the Rector's Decision no. 21/2021, which lays down the rules for assessing plagiarism at Pavol Jozef Šafárik University in Košice and its components. Fulfillment of the criteria is verified mainly in the process of supervision and in the process of work presentation. Failure to do so is reason for disciplinary action. The condition for the evaluation is a successful presentation and defense of the work in the relevant track headed by a commission appointed by the dean of the faculty. The commission decides on the eligibility of credits and states its decision in the memorandum of the ŠVK.

Learning outcomes:

The student demonstrates mastery of extended theory and professional terminology of the field of study, acquisition of knowledge, skills and competences, the ability to apply them creatively in solving selected field problems, ability to present the results using appropriate presentation methods and tools and ability to actively participate in a professional discussion.

Brief outline of the course:

- 1. Analysis of the state of the art in the field.
- 2. Design and implementation of a solution to the researched problem.
- 3. Evaluation of achieved results.
- 4. Preparation of work annotation.
- 5. Processing the written work.
- 6. Preparation of results presentation.
- 7. Presentation and defense of the obtained results.

Recommended literature:

The recommended literature is specified individually by the student or research team in agreement with the consultant or the supervisor.					
Course language: Slovak or english					
Notes:					
Course assessment Total number of assessed students: 24					
abs	n				
100.0	0.0				
Provides:					
Date of last modification: 25.01.2022					
Approved: prof. PhDr. Oľga Orosová, CSc., do Stanislav Krajči, PhD.	c. RNDr. Mária Ganajová, CSc., prof. RNDr.				

× -					
University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚTVŠ/ LKSp/13	Course name: Summer Course-Rafting of TISA River				
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the method: se se-load (hours): dy period: 28 sent				
Number of ECTS cro	edits: 2				
Recommended seme	ster/trimester of the course:				
Course level: I., II.					
Prerequisities:					
Conditions for cours Completion: passed Condition for success - active participation - effective performance paddling	e completion: ful course completion: in line with the study rule of procedure and course guidelines ce of all tasks: carrying a canoe, entering and exiting a canoe, righting a canoe,				
Learning outcomes: Content standard: The student demonstr course syllabus and re Performance standard Upon completion of t - implement the acqui - implement basic ski - determine the right s - prepare a suitable m	ates relevant knowledge and skills in the field, which content is defined in the ecommended literature. I: the course students are able to meet the performance standard and: ired knowledge in different situations and practice, lls to manipulate a canoe on a waterway, spot for camping, aterial and equipment for camping.				
Brief outline of the constraints of the constraints of the constraint of the constraints of the constraint of the constraints. Setting up a crew 4. Practical skills traints 5. Canoe lifting and constraints of the canoe lifting the canoe in the canoe in the canoe in the canoe of the pry stroke (on b) The draw stroke in the canoe of the canoe	burse: purse: iculty of waterways ting ning using an empty canoe arrying n the water without a shore contact e ut of the water fast waterways)				

11. Capsizing

12. Commands

Recommended literature:

1. JUNGER, J. et al. Turistika a športy v prírode. Prešov: FHPV PU v Prešove. 2002. ISBN 8080680973.

Internetové zdroje:

1. STEJSKAL, T. Vodná turistika. Prešov: PU v Prešove. 1999.

Dostupné na: https://ulozto.sk/tamhle/UkyxQ2lYF8qh/name/Nahrane-7-5-2021-v-14-46-39#! ZGDjBGR2AQtkAzVkAzLkLJWuLwWxZ2ukBRLjnGqSomICMmOyZN==

Course language:

Slovak language

Notes:

Course assessment

Total number of assessed students: 209

abs	n
37.32	62.68

Provides: Mgr. Dávid Kaško, PhD.

Date of last modification: 29.03.2022

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	Science			
Course ID: KPE/ MPPa/15	Course name: Supervised	Teaching Practice		
Course type, scope a Course type: Practi Recommended cou Per week: Per stud Course method: pro	and the method: ce rse-load (hours): dy period: 36s esent			
Number of ECTS cr	redits: 2			
Recommended seme	ester/trimester of the cours	e: 1.		
Course level: II.	Course level: II.			
Prerequisities:	Prerequisities:			
Conditions for cours	se completion:			
Learning outcomes:				
Brief outline of the o	course:			
Recommended litera	ature:			
Course language:				
Notes:				
Course assessment Total number of asse	essed students: 689			
	abs	n		
	100.0	0.0		
Provides: doc. PhDr. Petríková, PhD.	Beata Gajdošová, PhD., doo	e. PaedDr. Renáta Orosová, PhD., Mgr. Katarína		
Date of last modific:	ation: 20.06.2022			
Approved: prof. PhI Stanislav Krajči, PhD	Dr. Oľga Orosová, CSc., doc.	RNDr. Mária Ganajová, CSc., prof. RNDr.		

Stanislav Krajči, PhD.

University: P. J	University: P. J. Šafárik University in Košice				
Faculty: Facult	y of Science				
Course ID: KP PDU/15	E/ Course name: Teaching Methodology and Pedagogy				
Course type, so Course type: 1 Recommendee Per week: 2 / 2 Course metho	cope and the met Lecture / Practice d course-load (h 2 Per study peri d: present	thod: ; ours): od: 28 / 28			
Number of EC	TS credits: 5				
Recommended	semester/trimes	ster of the cours	e: 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: 746					
А	В	С	D	Е	FX
24.66	28.15	27.35	13.94	5.36	0.54
Provides: doc. PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petríková, PhD.					
Date of last modification: 20.06.2022					
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.					

University. F. J. Salarik University in Rusice	University	P. J.	Šafárik	University in	Nošice
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Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Vybrané kapitoly z chémie
VKCH/10	

Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14

Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:

Terminal examination by written form.

Learning outcomes:

Organic chemistry:

The general review on the basic chemistry of saccharides, lipids, amino acids and peptides. Inorganic chemstry:

To get acquaintance of the students with the stereochemistry of inorganic compounds, methods of the study and its influence on the properties of the compounds. Moreover to get acquintance of the students with actual direction of inorganic chemistry in the area of nanomaterials.

Brief outline of the course:

Organic chemistry:

Nomenclature of monosaccharides, their stereochemistry (the Fischer projection, the Haworth projection, conformation of sugars). Monosaccharide derivatives. Ascending reactions. Oligosaccharides and polysaccharides.

Lipids, their structure and classification. Groups of lipids. Triacylglycerols, glycerophospholipids sfingophospholipids, glycosphingolipids.

Amino acids, their nomenclature, classification and stereochemistry. Synthesis of amino acids. Nonribosomal construction of peptides.

Inorganic chemistry:

Symmetry, elements of symmetry, point groups, symmetrical properties of orbitals and bonds. Principles of stereochemistry, VSEPR, configuration of molecules, polyhedra, regular and semiregular polyhedra, the use of concept of symmetry in IR and UV-VIS spectroscopy. Nanochemistry - definition, bonds in nanoparticles and nanopowders, interactions between nanoparticles. Unique properties of nanomaterials, new methods of the synthesis of nanomaterials.

Recommended literature:

J. McMurry: Organic chemistry, Books/Cole, a Thomson Learning Company 2004, Sixth Eddition, ISBN 0534389996.

J. Chomič: Stereochemistry of inorganic compounds, UPJŠ Košice, 1988.

K. J. Klabunde, R. M. Richards: Nanoscale Materials in Chemistry, Wiley-CH, 2009.

Course language:						
Notes:						
Course assessment Total number of assessed students: 232						
А	В	С	D	Е	FX	
27.59	28.45	30.6	11.21	1.72	0.43	
Provides: prof. RNDr. Mária Kožurková, CSc., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Miroslava Martinková, PhD.						
Date of last modification: 15.09.2021						
Approved: prof. PhDr. Ol'ga Orosová, CSc., doc. RNDr. Mária Ganajová, CSc., prof. RNDr. Stanislav Krajči, PhD.						