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COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: CJP/ PFAJAKA/07	**Course name:** Academic 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 classroom participation, assignments handed in on time, 2 absences tolerated
1 test (10th week), no retake.
Presentation on chosen topic
Final evaluation- average assessment of test (40%), essay (30%) and presentation (30%).
Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less

Learning outcomes:
The development of students´ language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the language for a given purpose, with focus on Academic English, level B2.

Brief outline of the course:
Formal and informal English
Academic English and its specific features
Key academic verbs and nouns
Linking words in academic writing, writing a paragraph, word-order, topic sentences
Word-formation - affixation
abstract
Selected aspects of English pronunciation, academic vocabulary
Selected functional grammar structures - defining, classifying, epressing opinion, cause-effect, paraphrasing

Recommended literature:
Seal B.: Academic Encounters, CUP, 2002
T. Armer :Cambridge English for Scientists, CUP 2011
M. McCarthy M., O´Dell F. - Academic Vocabulary in Use, CUP 2008
Zemach, D.E, Rumisek, L.A: Academic Writing, Macmillan 2005
Olsen, A. : Active Vocabulary, Pearson, 2013
www.bbclearningenglish.com
Cambridge Academic 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. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ AOS1/15	**Course name:** Administration of OS
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. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ ATA/14	**Course name:** Algebra and theoretical arithmetic

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 1 **Per study period:** 42 / 14
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
It is based on the results of written and oral exam.

Learning outcomes:
Obtain knowledge about sets N, Z, Q and R, about their axiomatic building-up, the operations and the orderigs on them.

Brief outline of the course:
Ordered Domains, Axioms for Rings, Construction for Rings,
Definition and Properties of the Integers,
Number-Theoretic Properties of the Integers,
The Rational Numbers, The Arithmetic of the Rational Numbers,
Integral Domains and Quotient Fields, The Arithmetic of Sequences,
Cantor Sequences, Null Sequences, The Real Numbers,
Ordered Fields, Relations between Ordered Fields and the Field of Rational Numbers,
the Completeness of the Real Numbers, more Theorems on Ordered and Complete, Ordered Fields,
the Isomorphism of Complete, Ordered Fields,
the Complex Numbers

Recommended literature:
Tibor Katriňák, Martin Gavalec, Eva Gedeonová, Jaroslav Smítal: Algebra a teoretická aritmetika (1), Alfa, Bratislava, 1985.
Tibor Šalát, Alfonz Haviar, Tomáš Hecht, Tibor Katriňák: Algebra a teoretická aritmetika (2), Alfa, Bratislava, 1986.
Garrett Birkhoff, Saunders Mac Lane: Prehľad modernej algebry, Alfa, Bratislava, 1979.
Norman T. Hamilton, Joseph Landin: Set Theory. The Structure of Arithmetic, Dover Publications, Inc., 2018.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 64

A	B	C	D	E	FX
48.44	26.56	14.06	10.94	0.0	0.0

Provides: prof. RNDr. Jozef Doboš, CSc.

Date of last modification: 17.09.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ AIM/10	**Course name:** Application of ICT into mathematics teaching

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚMV/DDMa/14

Conditions for course completion:
To master specific means of information and communication technologies usable for the support of mathematical education and for solving various types of mathematical problems. To be able to assess and evaluate the suitability and ways of using selected types of modern technologies to support active learning of mathematics. To be able to apply the basic principles of constructivism and research approaches to the teaching of mathematics in the planning and preparation of the teaching of mathematics. To be able to find and prepare ideas and examples for meaningful and effective use of information and communication technologies in the teaching process, to point out several possibilities of solving mathematical problems.
Rating:
Entry questionnaire - 2 b.
Design and solution of motivational word problems for the use of systems of linear equations - 5 b.
Test for the application of a spreadsheet in solving mathematical problems - 4 b.
Project for the application of the EUR model or research-oriented teaching in teaching a selected topic - 10 b.
Didactic processing of a selected construction task - 5 b.
Test for solving construction tasks - 4 b.
Participating in a discussion forum - 2 b.
Use of CAS in solving tasks - 5 b.
Design of examples for the use of CAS in teaching mathematics - 8 b.
Classification scale:
A: 91 % - 100 %,
B: 81 % - 90 %,
C: 71 % - 80 %,
D: 61 % - 70 %,
E: 51 % - 60 %,
FX: 0 % - 50 %.

Learning outcomes:
Students will learn standard work procedures for the use of modern information and communication technologies in solving mathematical problems. Students will be provided with examples and suggestions for the use of modern information technologies in creating a stimulating learning

environment supporting active learning mathematics. Students will gain skills in the use of modern information technologies in modeling real situations and exploring mathematical patterns. Development of creative and evaluation skills of students to plan and prepare the teaching of specific topics in school mathematics with effective and meaningful use of modern information technologies.

Brief outline of the course:
1. Integration of modern information technologies into mathematical education.
2. - 3. Possibilities of using mathematical tools of a spreadsheet in modeling and solving algorithmic problems in teaching mathematics.
4. - 5. Constructivist conception of teaching mathematics, research of properties of mathematical objects and their mutual relations.
6. - 7. Solving construction tasks, examining the properties of identical and similar transformations and their use in solving problems.
8. Possibilities of using dynamic geometric systems in solving selected types of stereometry tasks.
9. - 10. Mathematical modeling and problem solving in the CAS environment. The position of CAS in the teaching of mathematics.

Recommended literature:
Oldknow, A., Taylor, R., Tetlow, L.: Teaching Mathematics Using ICT, Bloomsbury Publishing, 2010.
Lukáč, S.: Multimédiá a počítačom podporované učenie sa v matematike, PF UPJŠ Košice 2001.
Johnston-Wilder, S., Pimm, D.: Teaching secondary mathematics with ICT, Open University Press, 2005.
Vaníček, J.: Počítačové kognitivní technologie ve výuce geometrie. Pedagogická fakulta Univerzity Karlovy, 2009.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 167

A	B	C	D	E	FX
42.51	29.34	13.77	8.98	5.39	0.0

Provides: doc. RNDr. Stanislav Lukáč, PhD.

Date of last modification: 12.01.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/SNP/09	**Course name:** Bullying, Violence and Their Prevention

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: II.

Prerequisities:

Conditions for course completion:
Active participation in seminars. Detailed information will be given.
Active participation - 20%
Seminar work - 40%
Seminar work 2 - 40%

Learning outcomes:
The student will acquire the latest information about bullying in schools and its consequences, about solving problematic situations associated with bullying as well as about possible ways of prevention. Within the seminars, students will develop professional skills through the implementation of prevention activities. At the same time, their sensitivity to the issue of bullying and their willingness to actively address it during their pedagogical practice will increase.

Brief outline of the course:
Aggressive behavior. Characteristics of actors of bullying (personality, characteristics of family environment). Manifestations and possible causes of bullying. Bullying as a group process. The role of teacher, school and parent in solving bullying. Possibilities of prevention of bullying at the level of school, class, individuals. Primary, secondary and tertiary prevention. Socio-psychological activities used in the prevention of bullying.

Recommended literature:
Kolář, M.: Bolest šikanování. Cesta k zastavení epidemie šikanování ve školách. Portál, Praha, 2001
Jánošová a kol. Psychologie školní šikany. Grada, Praha, 2016
Říčan, P.: Agresivita a šikana mezi dětmi. Portál, Praha, 1995

Course language:

Notes:

Course assessment
Total number of assessed students: 190

A	B	C	D	E	FX
83.68	14.74	1.05	0.53	0.0	0.0

Provides: doc. Mgr. Mária Bačíková, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPO/ SDaM/15	**Course name:** Child and Adolescent Sociology

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

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: 913

A	B	C	D	E	FX
50.6	29.35	15.01	3.5	1.2	0.33

Provides: doc. Mgr. Alexander Onufrák, PhD.

Date of last modification: 29.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ MT/09	**Course name:** Class Management

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 568

A	B	C	D	E	FX
53.87	34.68	8.45	1.58	0.53	0.88

Provides: doc. PaedDr. Renáta Orosová, PhD.

Date of last modification: 20.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJKKA/07	**Course 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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJGA/07	**Course name:** Communicative Grammar 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 classroom participation (maximum 2 absences tolerated), homework assignments completed by given deadlines.
Powerpoint presentation of a topic related to the study field.
Final Test - end of semester, no retake
Final assessment = average of test and presentation.
Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less

Learning outcomes:
The development of students´ language skills - reading, writing, listening, speaking, improvement of their communicative linguistic competence. Students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence. Students can efectively use the language for a given purpose, with focus on Academic English and English on level B2.

Brief outline of the course:
Selected aspects of English grammar and pronunciation
Word formation
Contrast of tenses in English
The passive voice
Types of Conditionals
Phrasal verbs and English idioms
Words order and collocations, prepositional phrases

Recommended literature:
Vince M.: Macmillan Grammar in Context, Macmillan, 2008
McCarthy, O'Dell: English Vocabulary in Use, CUP, 1994
www.linguahouse.com
esllibrary.com
bbclearningenglish.com
ted.com/talks

Course language:

English language, level B2 according to CEFR.

Notes:

Course assessment
Total number of assessed students: 432

A	B	C	D	E	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. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KGER/ NJKG/07	**Course name:** Communicative Grammar in German Language

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:
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 language:
German, Slovak language

Notes:

Course assessment
Total number of assessed students: 56

A	B	C	D	E	FX
60.71	10.71	8.93	3.57	8.93	7.14

Provides: Mgr. Ulrika Strömplová, PhD.

Date of last modification: 12.07.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ VKN/15	**Course name:** Computational and cognitive neuroscience II
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 2 / 2 **Per study period:** 28 / 28 **Course method:** present	
Number of ECTS credits: 5	
Recommended semester/trimester of the course:	
Course level: II., N	
Prerequisities:	
Conditions for course completion: Midterm exam Final exam consisting of written and/or oral part	
Learning outcomes: Advanced topics in computational and cognitive neuroscience, and in the tools used in neuroscience.	
Brief outline of the course: 1. Intro: Cognitive psychology, neural modeling. Theme 1: Topics in cognitive and neural science 2. Neural basis of vision 3. Visual object recognition and visual scene analysis 4. Auditory cognition. Echo suppression. Auditory scene analysis 5. Cortical sound processing. 6. Other topics in the study of brain and main: thinking, consciousness, emotions, motivation Topic 2: Modeling in cognitive and neural science 7. Intro 8. Connectionism, STM and LTM modeling 9. Additive and shunting neural networks. 10. Learning rule Outstar. 11. Adaptive resonance theory. 12. Statistical and decision-theory modeling Topic 3: Current research at UPJS 13. Invited lecture	
Recommended literature: 1. KANDEL, E. R., SCHWARTZ, J. H. and JESSELL, T.M.: Principles of Neural Science. McGraw-Hill, 2021 ISBN-13: 978-1259642234 2. Dayan P and LF Abbott: Theoretical Neuroscience - Computational and Mathematical Modeling of Neural Systems. MIT Press, 2005 ISBN-13: 978-0262541855 3. Thagard P: Mind: 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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ VYZ1/15	**Course name:** Computational complexity

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

Number of ECTS credits: 4

Recommended semester/trimester of the course: 3.

Course level: II., N

Prerequisities:

Conditions for course completion:
Oral examination.

Learning outcomes:
To give students theoretical background in computational complexity and theory of NP-completeness.

Brief outline of the course:
1: Introduction: the notion of computational complexity, computational time, computational model, example - the problem of sorting, computational complexity as an asymptotic function
2: Basic computational models: RAM and RASP computers, the cost of an elementary step on these computers, single-tape Turing machine, multi-tape Turing machine, nondeterministic variants of these computational models, transformations among these models with respect to the time complexity
3: The classes P and NP: basic definitions, presenting (un)undirected graphs on the input, 3COL – the set of all 3-colorable graphs is in NP, 2COL - the set of all 2-colorable graphs is in P, SAT – the set of satisfiable Boolean formulas is in NP, CNF-SAT - Boolean formulas in conjunctive normal form
4: Variants of P and NP: decision problem, the problem of finding a solution, optimization problem, polynomial conversions among different variants
5: NP-completeness: reducibility in polynomial time and its transitivity, definition of the NP-completeness and its basic properties
6: NP-completeness of SAT
7: Variants of SAT: 3CNF-SAT - satisfiability of Boolean formulas in 3-conjunctive normal form, kCNF-SAT, CNF-SAT - 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 NP-complete 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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/MSSUI/15	**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

Number of ECTS credits: 1

Recommended semester/trimester of the course:

Course level: II.

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 completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 15

A	B	C	D	E	FX
46.67	20.0	20.0	6.67	6.67	0.0

Provides:

Date of last modification: 24.04.2017

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ MPPc/15	**Course name:** Continuous practice teaching I

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: ÚINF/MPPb/15

Conditions for course completion:
Conditions for ongoing evaluation:
1. Observations in 6 lessons of the subject of informatics.
2. Independent leading of 18 lessons of the subject informatics.
3. Participation in analyzes from 20 lessons with a teacher trainer.
4. Active participation in out-of-class and after-school activities.
Conditions for the final evaluation:
1. Submission of 6 observation records from lessons.
2. Submission of 18 lesson projects of preparation for lessons.
3. Submission of a list of observations and own lesson of the trainee.
4. Submission of an evaluation of the trainee's teaching practice.
5. Submission of a report on the continuous pedagogical practice.
6. Submission of a feedback sheet from the continuous pedagogical practice.
Conditions for successful completion of the course:
Fulfillment of all ongoing and final assignments.

Learning outcomes:
Under the professional supervision of an experienced teacher trainer, the student acquires practical pedagogical skills in teaching the subject of informatics. He gets acquainted with school life, out-of-class and after-school activities activities.

Brief outline of the course:
Observations of teacher trainer lessons, consultations of lesson preparations, preparation of teaching aids, leading own lessons, methodological and scientific analysis of lessons, active participation in out-of-class and after-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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ VSPc/15	**Course name:** Continuous practice teaching I
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: ÚMV/VPPb/15	
Conditions for course completion: Teaching of a specified number of hours and visitations of specified number of classes (18 teaching and 6 visitation of classes). Submission of written assignments (reflection on teaching practice, statement of teaching hours and classes visitations, selected lesson plans).	
Learning outcomes: Application of the knowledge acquired in didactic courses focused on teaching mathematics in pedagogical practice. Development of the student's self-reflection within the framework of the analysis of the lessons taught by the student. Identification of the student's weaknesses in order to shift his/her knowledge. Acquaint students with the atmosphere and the organization of school.	
Brief outline of the course: Visitations of classes in selected lessons Analysis of lessons Lesson plans preparation Classes managed according to prepared lesson plan Reflection on realized classes	
Recommended literature: Mathematics curricula and textbooks for middle and secondary schools Hejný, M.: Teória vyučovania matematiky 2. Bratislava : SPN 1989 M. Hejný, J. Novotná, N. Stehlíková: Dvacet pět kapitol z didaktiky matematiky 2, Univerzita Karlova v Praze - Pedagogická fakulta, Praha, 2004	
Course language: Slovak	
Notes:	

Course assessment
Total number of assessed students: 91

abs	n
100.0	0.0

Provides: doc. RNDr. Ingrid Semanišinová, PhD., doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 24.08.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ MPPd/15	**Course name:** Continuous practice teaching II

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: ÚINF/MPPc/15

Conditions for course completion:
Conditions for ongoing evaluation:
1. Observations in 8 lessons of the subject of informatics.
2. Independent leading of 30 lessons of the subject informatics.
3. Participation in analyzes from 30 lessons with a teacher trainer.
4. Active participation in out-of-class and after-school activities.
Conditions for the final evaluation:
1. Submission of 8 observation records from lessons.
2. Submission of 30 lesson projects of preparation for lessons.
3. Submission of a list of observations and own lesson of the trainee.
4. Submission of an evaluation of the trainee's teaching practice.
5. Submission of a report on the continuous pedagogical practice.
6. Submission of a feedback sheet from the continuous pedagogical practice.
Conditions for successful completion of the course:
Fulfillment of all ongoing and final assignments.

Learning outcomes:
Under the professional supervision of an experienced teacher trainer, the student acquires practical pedagogical skills in teaching the subject of informatics. He gets acquainted with school life, out-of-class and after-school activities activities.

Brief outline of the course:
Observations of teacher trainer lessons, consultations of lesson preparations, preparation of teaching aids, leading own lessons, methodological and scientific analysis of lessons, active participation in out-of-class and after-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: 13

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 04.08.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ VSPd/15	**Course name:** Continuous practice teaching II
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: ÚMV/VSPc/15	
Conditions for course completion: Teaching of a specified number of hours and visitations of specified number of classes (30 teaching and 8 visitation of classes). Submission of written assignments (reflection on teaching practice, statement of teaching hours and classes visitations, selected lesson plans).	
Learning outcomes: Application of the knowledge acquired in didactic courses focused on teaching mathematics in pedagogical practice. Development of the student's self-reflection within the framework of the analysis of the lessons taught by the student. Identification of the student's weaknesses in order to shift his/her knowledge. Acquaint students with the atmosphere and the organization of school.	
Brief outline of the course: Visitations of classes in selected lessons Analysis of lessons Lesson plans preparation Classes managed according to prepared lesson plan Reflection on realized classes	
Recommended literature: Mathematics curricula and textbooks for middle and secondary schools Hejný, M.: Teória vyučovania matematiky 2. Bratislava : SPN 1989 M. Hejný, J. Novotná, N. Stehlíková: Dvacet pět kapitol z didaktiky matematiky 2, Univerzita Karlova v Praze - Pedagogická fakulta, Praha, 2004	
Course language: Slovak	
Notes:	

Course assessment
Total number of assessed students: 81

abs	n
100.0	0.0

Provides: doc. RNDr. Ingrid Semanišinová, PhD., doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 24.08.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ TTUP/15	**Course name:** Creating Text Teaching Aids

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 226

A	B	C	D	E	FX
57.96	29.65	8.85	2.65	0.88	0.0

Provides: doc. PaedDr. Renáta Orosová, PhD.

Date of last modification: 20.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KSSFaK/ KJPUAP/15	**Course name:** Culture of Spoken Discourse

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 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: 0

A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0

Provides: PhDr. Iveta Bónová, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ ODPU/15	**Course name:** Defence of diploma thesis
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 15	
Recommended semester/trimester of the course:	
Course level: II.	
Prerequisities:	
Conditions for course completion: The diploma thesis is the result of the student's own work. 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 thesis defense. Failure to do so is reason for disciplinary action.	
Learning outcomes: The diploma thesis demonstrates mastery of extended theory and professional terminology of the field of study, acquisition of knowledge, skills and competencies in accordance with the declared profile of the graduate of the study program, as well as the ability to apply them creatively in solving selected field problems. Student demonstrates the ability of independent professional work in terms of content, formal and ethical. Further details on the diploma thesis are determined by Directive no. 1/2011 on the basic requirements of final theses and the Study Regulations of UPJŠ in Košice for the 1st, 2nd and combined 1st and 2nd degree.	
Brief outline of the course: 1. Elaboration of the diploma thesis in accordance with the instructions of the supervisor. 2, Presentation of the results of the diploma thesis before the examination commission. 3. Answering questions related to the topic of the diploma thesis within the discussion.	
Recommended literature: The recommended literature is determined individually in accordance with the topic of the diploma thesis.	
Course language: Slovak and optionally English.	
Notes:	

Course assessment
Total number of assessed students: 11

A	B	C	D	E	FX
45.45	9.09	45.45	0.0	0.0	0.0

Provides:

Date of last modification: 19.11.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ TSM1a/15	**Course name:** Development and processing of multimedia

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.

Prerequisities:

Conditions for course completion:
Conditions for ongoing evaluation:
1. Creation of an educational animation.
2. Creation of a poster with vector and raster graphics.
3. Creation of an educational audio recording.
4. Creation of an instructional educational video.
Conditions for successful completion of the course:
Obtaining at least 50% of points for ongoing assignments.

Learning outcomes:
After completing this course, students are able to:
a) deepen the knowledge of the principles of multimedia and to practice skills in the creation and processing of multimedia,
b) create multimedia teaching aids with accompanying methodological commentary for teaching selected topics of school informatics,
c) analyze and discuss the issue of teaching the creation and processing of multimedia in school informatics.

Brief outline of the course:
1. Digitization and processing of raster image.
2. Digitization and processing of raster image.
3. Creating animations.
4. Creation of vector graphics.
5. Creation of vector graphics.
6. Creation of vector graphics.
7. 3D modeling and printing
8. 3D modeling and printing
9. Digitization and sound processing.
10. Digitization and sound processing.
11. Digitization and video processing.
12. Digitization and video processing.

Recommended literature:

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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ TSM1b/15	**Course name:** Development and processing of multimedia

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., 4.

Course level: II.

Prerequisities:

Conditions for course completion:
Conditions for ongoing evaluation:
1. Programmed SVG image.
2. Programmed animation.
3. Programmed sound or melody.
4. Programmed multimedia application.
Conditions for successful completion of the course:
Obtaining at least 50% of points for ongoing assignments.

Learning outcomes:
After completing this course, students are able to:
a) explain the basic principles and procedures in multimedia programming,
b) design and program multimedia applications.

Brief outline of the course:
1. Programming of still images.
2. Programming of still images.
3. Programming of still images.
4. Programming of still images.
5. Animation programming.
6. Animation programming.
7. Animation programming.
8. Programming of sounds and melodies.
9. Programming of sounds and melodies.
10. Programming of sounds and melodies.
11. Creating a multimedia application.
12. Creating a multimedia application.

Recommended literature:
SATHAYE, Ninad, 2010. 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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/VPU/17	**Course name:** Developmental Psychology for Teachers

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Evaluation of participation in teaching, continuous evaluation of activity in seminars, evaluation of seminar work,

Learning outcomes:
The graduate will understand the principles of developmental psychology, and will be able to characterize the norm in separate developmental stages with a specific focus on the period of school age and adolescence. As part of the seminar work, a students will process current knowledge published in foreign journals. They will have a knowledge about the current social discourse on the topics covered. The graduate will be able to consider various aspects of the possible influence of parents and friends on the development of piupils and apply the knowledge of developmental psychology in the practice of the teacher.

Brief outline of the course:
Determinants and factors of development, cognitive development, personality development. Socialization in separate developmental stages (family, peers, school). Specifics of development in the period of school age, in pubescence and adolescence. Parents and their role in child development. Application of knowledge of developmental psychology in the teacher's practice - communication with students in different developmental stages, creating a teacher-student relationship with respect to the development needs of the student.

Recommended literature:
Vágnerová, M. Vývojová psychologie. Portál, Praha 2000
Říčan, P. Cesta životem. Portál, Praha, 2004.
Thorová, K. Vývojová psychologie. Portál, Praha, 2015.
Macek, P. Adolescence. Praha: Portál, 2003
Matějček, Z. - rôzne diela
Bačíková, M. Psychológia rodičovskej kontroly, Šafárik Press, Košice 2019

Course language:

Notes:

Course assessment
Total number of assessed students: 88

A	B	C	D	E	FX
82.95	11.36	2.27	3.41	0.0	0.0

Provides: doc. Mgr. Mária Bačíková, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ DIN1a/15	**Course name:** Didactics of informatics

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:
Conditions for ongoing evaluation:
1. Proposal of a thematic plan for teaching informatics at secondary or elementary school extended by 1 disponible hour.
2. Creation of a concept map and specific educational objectives for selected topic of school informatics.
3. Creation of a graded system of tasks for teaching selected topic of school informatics.
4. Proposal for the preparation of a lesson with a 5E inquiry cycle.
Conditions for successful completion of the course:
Obtaining at least 50% of points for ongoing assignments.

Learning outcomes:
After completing this course, students are able to:
a) acquire an overview of the objectives, content, modern methods and aids for teaching school informatics,
b) create conceptual map, cognitive objectives and graded tasks collection for seleced topic of school informatics,
c) create a inquiry-based 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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ DIN1b/15	**Course name:** Didactics of informatics

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
Conditions for ongoing evaluation:
1. Creation of an interactive educational aid.
2. Microteaching with a sample solution of an algorithmic problem.
3. Assessment of administered didactic test.
4. Creation of an assignment and a commented author's solution of the STEAM task for the PALMA junior competition, correction, and assessment of student solutions.
Conditions for the final evaluation:
1. Elaboration of a final paper focused on the conceptual process, creation of assignments with various didactic functions, naming misconceptions, and assessment of learning outcomes of selected topics of school informatics.
2. Presentation of own teacher's portfolio with discussion.
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) 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 course:
1. Assessment of students' learning outcomes in school informatics. Didactic tests.
2. Assessment of student projects. Student portfolio.
3. Conceptual process in school informatics.
4. Informatics concepts in informatics competitions (iBobor).
5. Informatics concepts in activities outside the computer (Computer Science Unplugged).
6. Methodology of teaching selected topics in the field of Representation and tools (coding, compression).

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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DDMa/14	**Course name:** Didactics of mathematics

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Continuous assessment - 60% of the total assessment, exam - 40% of the total assessment.

Learning outcomes:
Master the basic principles and methods of teaching of mathematics at primary and secondary schools. Gain knowledge of the various ways of teaching specific topics of school mathematics.

Brief outline of the course:
1. Subject of Didactics of Mathematics, the development of mathematics and mathematics education.
2. Aims and objectives of mathematics teaching
3. Planning in mathematics teaching Logical and didactical curriculum analysis Determination of learning objectives
4. - 5. Didactical principles, methods of mathematics teaching
6. - 7. Assessment of learning outcomes, the creation of didactic tests
8. Mathematical problems
9. - 10. Construction numeric fields,
11. Theory of elementary functions,
12. - 13. Synthetic and analytic geometry

Recommended literature:
[1] M.Hejný a kol.: Teorie vyučovania matematiky, SPN Blava 1989, (in slovak)
[2] L.Frantíková,K.Hončarivová,O.Kopanev: Didaktika matematiky, UPJŠ 1982 (in slovak)
[3] R.Fischer,G.Malle: Človek a matematika, SPN Bratislava 1992 (in slovak)
[4] Polya, G.: How to solve it, Princeton University Press, 1957.
[5] Hejný, M., Kuřina, F.: Dítě, škola a matematika: Konstruktivistické přístupy k vyučování. Portál, Praha 2001. (in czech)

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 93

A	B	C	D	E	FX
37.63	34.41	16.13	8.6	3.23	0.0

Provides: doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 19.09.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ DDMb/14	**Course name:** Didactics of mathematics

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: 3.

Course level: II.

Prerequisities: ÚMV/DDMa/14

Conditions for course completion:
Conditions for continuous evaluation:
1. Participation in teaching in accordance with the study rules and instructions of the teacher.
2. Activity.
3. Homework and written tests.
4. Seminar work and its presentation at the seminar - lesson plan on the selected topic
Conditions for successful completion of the course:
1. Participation in teaching in accordance with the study regulations and according to the instructions of the teacher;
2. Credits will be awarded to a student who scores at least 50% on homework assignments, at least 50% on written tests, and at least 50% on a seminar work. A grade of A requires at least 90%, a grade of B requires at least 80%, a grade of C requires at least 70%, a grade of D requires at least 60%, and a grade of E requires at least 50%.

Learning outcomes:
The student demonstrates a shift in students' cognitive understanding specifically by orienting to some familiar general student problems (e.g., distinguishing between sentences and definitions) and to specific problems in some areas of mathematics (e.g., incorrect use of the equals sign) when solving a homework assignment.
While solving problems on written tests, the student will show that he or she has a conceptual understanding of mathematical concepts, properties and methods from school mathematics and is familiar with some standard and nonstandard procedures that students use when learning mathematics.
When presenting the seminar work, the student demonstrates that he/she is aware of the potential of the chosen topic, the necessary input knowledge of the pupils and the connections within the topic and with other topics, and has developed the objectives of the lesson properly. Furthermore, he/she demonstrates that he/she is aware of the possibilities of the proposed activities, teaching methods, selected tasks (what are their weaknesses and strengths). Demonstrates that he/she reflects on the response to a pupil's mistake in order to help him/her in his/her learning.

Brief outline of the course:

The content is based on current research findings related to mathematics teacher's specialised knowledge model. We focus mainly on pedagogical content knowledge, specifically knowledge of features of learning mathematics, knowledge of mathematics teaching, and knowledge of mathematics learning standards.
This knowledge is developed in the context of the five essential topics:
- Numbers, variables and numerical operations with numbers
- Relationships, functions, tables, diagrams
- Geometry and measurement
- Combinatorics, probability, statistics
- Logic, reasoning, proofs.

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

Recommended literature:

[1] M.Hejný a kol. Teória vyučovania matematiky. Bratislava: SPN, 1989.
[2] Hejný, M.; Kuřina, F. Dítě, škola a matematika: konstruktivistické přístupy k vyučování. Praha: Portál, 2001.
[3] Hejný, M.; Novotná, J.; Stehlíková, N. Dvacet pět kapitol z didaktiky matematiky. Praha: PedF UK, 2004.
[4] Fischer, R.; Malle, G. Člověk a matematika, Bratislava: SPN, 1992.
[5] Vondrová Naďa a kol. Kritická místa matematiky základní školy v řešení žáků. Praha: Karolinum, 2016.
[6] Textbooks and collections of problems and taks for secondary and middle school.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 89

A	B	C	D	E	FX
68.54	15.73	12.36	2.25	1.12	0.0

Provides: doc. RNDr. Ingrid Semanišinová, PhD.

Date of last modification: 31.01.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

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 problem-solving 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

A	B	C	D	E	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
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ DFR/10	**Course name:** Differential equations

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 1 **Per study period:** 42 / 14
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Continuous assessment is taken the form of two tests during the semester. Final evaluation is given by continuous assessment (40%), written and oral part of the exam (30% and 30%).

Learning outcomes:
Theory of differential equations is one of the fundamental areas of mathematical analysis. It has numerous applications in various fields of science and technology. The main objective of this course is to familiarize students with the basics of the theory of ordinary differential equations and their systems, and methods for solving certain types of differential equations and systems. We consider them as possible mathematical models of real situations.

Brief outline of the course:
Basic concepts. Elementary methods for solving and applications of the first order differential equations. The existence and uniqueness of solutions to Cauchy problem for differential equations of the first order, the n-th order and for differential systems. The relationship between differential equations of the n-th order and systems. Linear differential equations of the n-th order and linear differential systems - the local and global theorem on the existence and uniqueness
of solutions to Cauchy problem, basic properties of solutions, fundamental system of solutions, structure of general solution, Lagrange method of variation of constants, linear differential equations and systems with constant coefficients. Reduction of the order of differential equations. Euler differential equations. Elimination method for solving the systems of differential equations.

Recommended literature:
1. L. Kluvánek, I. Mišík, M. Švec: Matematika II, SVTL, Bratislava, 1961 (in Slovak).
2. J. Eliaš, J. Horváth, J. Kajan: Zbierka úloh z vyššej matematiky 3, Alfa, Bratislava, 1980 (in Slovak).
3. S. J. Farlow: An introduction to differential equations and their applications, Dover Publications, New York, 2006.
4. W. Kohler, L. Johnson: Elementary differential equations with boundary value problems, Pearson Education, Boston, 2006.
5. M. Tenenbaum: Ordinary differential equations, Dover Publications, New York, 1985.
6. J. C. Robinson: An introduction to ordinary differential equations, Cambridge University Press, Cambridge, 2004.

7. J. Polking, A. Boggess, D. Arnold: Differential equations, Prentice Hall (Pearson), Upper Saddle River, 2006.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 158

A	B	C	D	E	FX
19.62	22.78	14.56	21.52	17.72	3.8

Provides: doc. Mgr. Jozef Kiseľák, PhD.

Date of last modification: 03.05.2015

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ 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 credits: 1	
Recommended semester/trimester of the course: 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: 12	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

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 ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 15

abs	n
100.0	0.0

Provides:

Date of last modification:

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik 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 ECTS credits: 2	
Recommended semester/trimester of the course: 3.	
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: 7	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DPP2a/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 credits: 1	
Recommended semester/trimester of the course: 1.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language: Slovak	
Notes:	
Course assessment Total number of assessed students: 48	

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DPP2b/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 ECTS credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities: ÚMV/DPP2a/14	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language: Slovak	
Notes:	
Course assessment Total number of assessed students: 48	

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DPP2c/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 credits: 2	
Recommended semester/trimester of the course: 3.	
Course level: II.	
Prerequisities: ÚMV/DPP2b/14	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language: Slovak	
Notes:	
Course assessment Total number of assessed students: 41	

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/PUDU/15	**Course name:** Drug Addiction Prevention in Educational Practice

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., 3.

Course level: II.

Prerequisities:

Conditions for course completion:
1st part of the semester evaluation: active participation in the training part (30p). 2nd part of the semester evaluation: active participation in workshops (20p) 3rd part of the semester evaluation - preparation (10p) and implementation (10p) of block activities (20p, minimum 11 points). 4th part of the evaluation - written knowledge exam (20p, minimum 11 points). In total, students can get 90p and the final grade is as follows: 90 - 82: A 81 - 73: B 72 - 66: C 65 - 59: D 58 - 54: E 53 and less: FX. Detailed information in the electronic bulletin board of the course in AIS2. The teaching of the subject will be realized by a combined method.

Learning outcomes:
The student understands principals of research data based prevention of risk behavior, can describe and explain the determinants of risk behavior as well as protective and risk factors for substance use. Understands and adequately interprets the theory explaining the background of substance and non-substance addictions.
The student is also able to state and classify the types and forms of prevention, strategies and approaches in prevention, can distinguish effective strategies from ineffective ones.
The student is able to apply the learned rules, procedures and competencies for the work of a teacher in the field of drug use prevention, as well as the acquired professional skills for the work of a teacher and prevention coordinator at school.

Brief outline of the course:
Psychological, pedagogical-psychological, medical and legal-forensic aspects of substance use prevention
Prevention of substance use based on risk and resilience
Primary, secondary and tertiary prevention of substance use
Universal, selective and indicated prevention of substance use
Effective substance prevention strategies based on research data
Preparation and implementation of components of effective substance use prevention programs

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

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

Course language:
slovak

Notes:

Course assessment
Total number of assessed students: 371

A	B	C	D	E	FX
54.18	38.01	7.01	0.81	0.0	0.0

Provides: prof. PhDr. Oľga Orosová, CSc., Mgr. Lucia Barbierik, PhD., Mgr. Lenka Abrinková, PhD., Mgr. Frederika Lučanská, PhD., Mgr. Viera Čurová, Mgr. Marcela Majdanová, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DGE/10	**Course name:** Dynamic geometry

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

Number of ECTS credits: 3

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
Master the concept of dynamic geometric systems and commands for creating and modifying dynamic constructions. To be able to use dynamic geometric systems in the study of the properties of geometric shapes and the discovery of geometric patterns. To be able to effectively use the commands of dynamic geometric systems for modeling various situations, solving geometric problems, exploring geometric transformations, exploring graphs of functions, data processing.
Rating:
Test requiring the solution of geometric problems using classical tools and the use of a dynamic geometric system - 16 b.
Elaboration of a project focused on the use of a dynamic geometric system in solving geometric problems on a selected topic - 16 b.
Classification scale:
A: 91 % - 100 %,
B: 81 % - 90 %,
C: 71 % - 80 %,
D: 61 % - 70 %,
E: 51 % - 60 %,
FX: 0 % - 50 %.

Learning outcomes:
Skills to create dynamic constructions in a dynamic geometric system and to use commands usable in solving geometric problems. Knowledge and skills to effectively use geometric, algebraic and other types of tools in experimenting with geometric objects and their attributes, in discovering invariant properties of geometric shapes and geometric relationships between objects in triangles, quadrilaterals, conic sections and in basic types of spatial bodies. Be able to use geometric transformations in solving more complex constructing tasks.

Brief outline of the course:
1. - 4. Constructions and investigation of properties and geometric relations in triangles, quadrilaterals, circles and their use in solving construction problems. Menelaos's theorem, Ceva's theorem, Varignon's theorem, Ptolemy's theorem, cyclic and tangential quadrilaterals, center of gravity of triangles and quadrilaterals.

5. Investigation of sets of points with a given property.
6. Discovering and testing geometric relationships.
7. Composing congruent transformations. Use of congruent and similar transformations and circular inversion for solving tasks.
8. Mathematical modeling, investigation of functional dependencies between quantities, solving problems to find extremes.
9. - 10. Constructions of bodies, mutual positions of geometric shapes in space, sections of bodies, intersection of a line with a body.

Recommended literature:

Vaníček, J.: Počítačové kognitivní technologie ve výuce geometrie, Pedagogická fakulta Univerzity Karlovy, 2009
Stahl, G.: Dynamic-Geometry activities with GeoGebra for Virtual Math Teams, The Math Forum at Drexel University, 2012.
De Villiers, M., D.: Rethinking proof with the Geometer's Sketchpad. Key Curriculum Press, 2003.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 43

A	B	C	D	E	FX
51.16	27.91	13.95	6.98	0.0	0.0

Provides: doc. RNDr. Stanislav Lukáč, PhD.

Date of last modification: 12.01.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/VP/09	**Course name:** Educational Counselling

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 208

A	B	C	D	E	FX
70.67	18.27	7.21	2.88	0.96	0.0

Provides: PhDr. Anna Janovská, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ ZSP/15	**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 ECTS credits: 2

Recommended semester/trimester of the course: 3.

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: 591

A	B	C	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. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ ZZP/12	**Course name:** Experiential Education

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: 1., 3.

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: 380

A	B	C	D	E	FX
45.0	37.11	13.95	3.68	0.26	0.0

Provides: doc. PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petríková, PhD.

Date of last modification: 20.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/FO1/15	**Course name:** Formal languages and automata

Course type, scope and the method:
Course type: Lecture / Practice
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: II.

Prerequisities:

Conditions for course completion:
Test and oral examination.

Learning outcomes:
To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.

Brief outline of the course:
1: Pushdown automata: definition of a pushdown automaton, accepting by final states, accepting by empty pushdown
2: Deterministic pushdown automata: examples of application in practice
3: Context-free grammars: basic definition, leftmost derivation, derivation tree, elimination of rules of type A→epsilon and A→B, Chomsky normal form
4: Relation between context-free grammars and pushdown automata: transforming context-free grammar to a pushdown automaton, transforming pushdown automaton to a context-free grammar
5: Pumping lemma I: Statement of the lemma and its proof
6: Pumping lemma II: applications of the lemma
7: Closure properties of context-free languages
8: Closure properties of deterministic context-free languages
9: Pushdown automata producing an output: basic definitions and properties, applications in practice
10: Context-sensitive languages: context-sensitive grammar, nondeterministic linear-bounded Turing machine (LBA), transforming context-sensitive grammar to an LBA, transforming LBA to a context-sensitive grammar
11: Closure properties of context-sensitive languages
12: Recursively enumerable languages: phrase-structure grammar, nondeterministic and deterministic Turing machine, transforming nondeterministic Turing machine to a phrase-structure grammar, transforming phrase-structure grammar to a deterministic Turing machine, closure properties
13: Universal Turing machine
14: Algorithmically undecidable problems of the formal language theory

Recommended literature:

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

Course assessment
Total number of assessed students: 11

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ GEO2b/10	**Course name:** Geometry II

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 2 **Per study period:** 42 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
In the covered areas of geometry, the ability to formulate definitions and statements, to present proofs of statements, to explain individual steps in proofs and to solve selected problems related to given topics is required. During the semester (continuous assessment) two tests take place, from which 50% of points can be obtained, and from the oral exam alike 50% can be obtained. Evaluation: A ... at least 90%, B ... at least 80%, C ... at least 70%, D ... at least 60%, E ... at least 50%, FX ... less than 50%

Learning outcomes:
Acquired knowledge of the properties of affine, isometric and similarity transformations, understanding of important statements and methods, knowledge of the use of isometric and similarity transformations in construction and optimization problems and the ability to solve other problems in this area.

Brief outline of the course:
- (week 1-2) Quadric surfaces (circular and general quadric surfaces)
- (week 3-7) Affine transformations (associated transformation, matrix representation, affinities, fixed points and lines, pseudo-reflections)
- (week 8-10) Isometric transformations (matrix representation, isometries, classification in the plane, composiion of reflections)
- (week 11-12) Similarity transformations (matrix representation, similarities, homothety, composition of homotheties)
- (week 13-14) Geometry of circles (the power of a point with respect to a circle, radical axis of two circles, pencils of circles)

Recommended literature:
1. M. Sekanina et al, Geometry 2, SPN, 1988 (in slovak).
2. O. Šedivý et al, Geometry 2, SPN, 1987 (in slovak).
3. H.S.M. Coxeter, Introduction to geometry, Wiley, 1989.
4. J.T. Smith, Methods of geometry, Wiley, 2000.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 149

A	B	C	D	E	FX
16.78	16.11	24.83	16.78	20.13	5.37

Provides: RNDr. Igor Fabrici, Dr. rer. nat., RNDr. Veronika Hubeňáková, PhD.

Date of last modification: 28.10.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ GEO2c/10	**Course name:** Geometry III

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

Number of ECTS credits: 4

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
In the covered areas of geometry, the ability to formulate definitions and statements, to present proofs of statements, to explain individual steps in proofs and to solve selected problems related to given topics is required. During the semester (continuous assessment) a test take place, from which 30% of points can be obtained, and from the oral exam the remaining 70% can be obtained. Evaluation: A ... at least 90%, B ... at least 80%, C ... at least 70%, D ... at least 60%, E ... at least 50%, FX ... less than 50%

Learning outcomes:
Acquired knowledge of important points, lines, and circles in triangles, of quadrangles, and of circles and their properties, and the ability to solve problems on this area. A new look on classical geometric results.

Brief outline of the course:
- (week 1-5) Points and lines connected with a triangle (Menelaus's theorem, Ceva's theorem, points of interest, the incircle and excircles, pedal triangles, Euler line, nine-point circle)
- (week 6-8) Properties of circles (the power of a point with respect to a circle, radical axis of two circles, Simson lines, Ptolemy's theorem, Morley's theorem)
- (week 9-11) Collinearity and concurrence (quadrangles, Varignon's parallelogram, cyclic quadrangles, Brahmagupta's formula, Napoleon triangles)
- (week 12-14) Inversion with respect to a circle (basic properties, composition of inversions and homotheties)

Recommended literature:
1. H.S.M. Coxeter, S.L. Greitzer, Geometry revisited, MAA, 1967.
2. R.A. Johnson, Advanced Euclidean geometry, Dover Publ., 2007.
3. A.V. Akopyan, A.A. Zaslavsky, Geometry of conics, AMS, 2007.
4. D.A. Brannan, M.F. Esplen, J.J. Gray, Geometry, Cambridge Univ. Press, 2007.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 118

A	B	C	D	E	FX
25.42	25.42	28.81	9.32	11.02	0.0

Provides: RNDr. Igor Fabrici, Dr. rer. nat.

Date of last modification: 28.10.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/PsZ/15	**Course name:** Health Psychology

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
Active participation in seminars, preparation and presentation of seminar work, final evaluation

Learning outcomes:
The aim of the course is to provide students with the latest knowledge and background of Health Psychology as well as forms of its application in order to improve the mental and physical health of individuals and society. The graduate of the course will understand the principles of health psychology, will be familiar with the current social discourse on the topics covered. The student will learn to use the acquired knowledge in school practice.

Brief outline of the course:
1. Health psychology. Definition of health. Bio-psycho-social model of health.
2. Mental health and quality of life, well being.
3. Physiological aspects of mental health, lifestyle
4. Stress. Coping, resilience.
5. Psychosomatic diseases, placebo.
6. Social support and its importance for health.
7. Burnout syndrome.
8. The meaning of life, faith.
9. Health-related behavior and prevention. Risky behavior, excessive use of the Internet and screens.
10. Socio-economic inequalities in health. Unemployment and health.

Recommended literature:
Křivohlavý, J.: Psychologie zdraví. Praha: Portál, 2001
Kebza, V.: Psychosociální determinanty zdraví. Praha: Academia, 2005
Křivohlavý, J.: Psychologie nemoci. Praha : Grada, 2002
Sarafino, E.P.: Health Psychology: Biopsychosocial Interactions, John Wiley & Sons, 2007
Taylor, E.: Health Psychology. Singapore: McGraw-Hill, 2006
Vollrath M.E.: Handbook of Personality and Health. Chichester: John Wiley & Sons, 2006

Course language:

Notes:

Course assessment
Total number of assessed students: 111

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. Mgr. Mária Bačíková, PhD.

Date of last modification: 22.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ TIK1/15	**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 ECTS credits: 4

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Satisfiable knowledge of basic notions

Learning outcomes:
To understand principles of lossless coding and entropy and their mutual relationship.

Brief outline of the course:
1. Word and language
2. Decodable codes
3. Prefix-free codes
4. Krafto-McMillan inequality
5.-7. Entropy
8.-9. Price of code sequence
10. Shannon's theorem
11. Fano's code sequence
12. Huffman's optimal code sequence

Recommended literature:
1. D. Hankersson, G. Harris, P. Johnson: Introduction to Information Theory and Data Compression, CRC Pr., 1998.
2. J. Adámek: Kódovaní a teorie informace, Vydavatelství ČVUT, Praha 1994
3. J. Černý: Entrópia a informácia v kybernetike, Alfa 1981

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 99

A	B	C	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
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/UPN/17	**Course name:** Introduction into Psychology of Religion

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
The assessment is based on the interim evaluation. The subject will be taught in both present and distance format. Up-to-date information concerning the subject for the given academic year can be found on the electronic board of the subject in the Academic information system of the UPJŠ.

Learning outcomes:
The student wil acquire a basic overview of the origin and current state of knowledge in the field of research and application the psychology of religion. He/she will be able to described, explaine, and evaluate this knowlege. The student will be able to apply the acquired knowledge in the basic orientation in the field, and develop critical thinking and will be able to apply and integrate already acquired knowledge from other (psychological) distributions

Brief outline of the course:
1. History of psychology of religion in national and world context
2. Psychological perspective on religion and religious experience
3. Psychology of religion in an interdisciplinary context
4. Basic approaches to psychological interpretation and selected views
5. Different types of religious experience
6. Psychological view of religion from a biodromal perspective
7. Spirituality versus religiosity in a postmodern society
8. Coping in the context of religiosity
9. Psychotherapy and religion, pastoral psychology

Recommended literature:
Eliade, M. (1994). Posvátné a profánní. Praha: Česká křesťanská akademie.
Eliade, M. (1995). Dějiny náboženského myšlení 1. Praha: Oikoymenh.
Freud, S. (1999). Nutkavá jednání a náboženské úkony. In Freud, S., Spisy z let 1906–1909. Praha: Psychoanalytické nakladatelství.
Fromm, E. (2003). Psychoanalýza a náboženství. Praha: Aurora
Erikson, E. (1996). Mladý muž Luther: studie psychoanalytická a historická. Praha: Psychoanalytické nakladatelství.
James, W. (1930). Druhy náboženské zkušenosti. Praha: Melantrich.
Jung, C. G. (1993). Analytická psychologie: Její teorie a praxe. Praha: Academia.

Křivohlavý, J. (2000). Pastorální péče. Praha: Oliva
Pargament, K. (1997), Psychology of religion and coping,
Říčan, P. (2007). Psychologie náboženství a spirituality. Praha: Portál.
Říčan P. (2002), Psychologie náboženství, Portál, Praha,
Stríženec, M. (2001) Súčasná psychológia náboženstva

Course language:

Notes:

Course assessment
Total number of assessed students: 55

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: Mgr. Jozef Benka, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/ZMPPV/15	**Course 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:

Course assessment
Total number of assessed students: 716

A	B	C	D	E	FX
19.41	27.09	24.72	19.55	9.08	0.14

Provides: doc. Mgr. Mária Bačíková, PhD., PhDr. Anna Janovská, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/UGR1/15	**Course name:** Introduction to computer graphics

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

Number of ECTS credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To provide the students with knowledge of graphics algorithms and basic principles of computer graphics.

Brief outline of the course:
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 language:

Notes:

Course assessment
Total number of assessed students: 311

A	B	C	D	E	FX
13.18	10.29	13.83	23.47	30.87	8.36

Provides: RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 08.01.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ UNS1/15	**Course name:** Introduction to neural networks

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

Number of ECTS credits: 5

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 the realization of a project with the application of neural networks, successful completion of two written tests in the field of neural networks, their basic types, and genetic algorithms, as well as successful completion of the written and oral part of the exam.

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 course:
1. Basic concept arising from biology. Linear threshold units, polynomial threshold units, functions calculable by threshold 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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ pLTM/21	**Course name:** Logic and set theory

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

Number of ECTS credits: 3

Recommended semester/trimester of the course: 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: 3

A	B	C	D	E	FX
33.33	33.33	0.0	33.33	0.0	0.0

Provides: RNDr. Jaroslav Šupina, PhD.

Date of last modification:

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ LOP1/15	**Course name:** Logic programming

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2., 4.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Evaluation of active participation in exercises and homework, test of theoretical knowledge during the semester. Written and oral exam together with assessment from exercises.

Learning outcomes:
To learn bases of declarative programming (as complementary method to procedural programming) and basic methods of implementations of logic programming languages.

Brief outline of the course:
1. Introduction to logic
2. theory, models, Herbrand model
3. SLD resolution
4. Basics of Prolog language
5. Prologue in examples
6. Lists
7., 8., 9. Data analysis in Prolog
10., 11., 12. Graph theory in Prolog

Recommended literature:
BRATKO, Ivan. Prolog. Programming for Artificial Intelligence. 2 ed. Wokingham: Addison-Wesley, 1990. ISBN 0-201-41606-9.
NILSON U., MALUSINSKI J.: Logic, Programming and Prolog, John Wiley & Sons Ltd. 1995
NIENHUYIS-CHENG Sh.H., WOLF R.: Foundations of Inductive Logic Programming, Springer-Verlag, 1997

Course language:
Slovak or English

Notes:
Prerequisites: none

Course assessment
Total number of assessed students: 307

A	B	C	D	E	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. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ DPU/14	**Course name:** Magister thesis and its defense

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

Number of ECTS credits: 15

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 41

A	B	C	D	E	FX
75.61	9.76	7.32	4.88	2.44	0.0

Provides:

Date of last modification: 07.12.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ pMRU/21	**Course name:** Mathematical problem solving strategies

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: 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: 3

A	B	C	D	E	FX
0.0	0.0	66.67	33.33	0.0	0.0

Provides: doc. RNDr. Ingrid Semanišinová, PhD., doc. RNDr. Stanislav Lukáč, PhD., doc. RNDr. Dušan Šveda, CSc.

Date of last modification:

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ MST/19	**Course name:** Mathematical statistics

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Total evaluation based on two written tests during the semester (2x40p) and the result of the written (30p) and oral part of the exam (30p).
At least 50% must be obtained from each part.
Final evaluation: ≥90% A; ≥80% B; ≥70% C; ≥60% D; ≥50% E; <50% FX.

Learning outcomes:
Student should obtain the knowledge about basic statistical methods and the ability to apply theoretical knowledge in practical problems solving.

Brief outline of the course:
1. Random vectors (definition, distributions, characteristics, joint and marginal distributions).
2. Covariance, correlation and regression.
3. Random sample, sampling distributions and characteristics.
4. Some important statistics and their distributions.
5. Point estimators and their properties.
6. Maximum likelihood method.
7. Interval estimates, confidence interval construction (2 weeks).
8. Testing of statistical hypothesis (critical region, level of significance and power of test, methods for searching optimal critical regions).
9. Some important parametric tests (2 weeks).
10. Some important nonparametric tests (2 weeks).

Recommended literature:
1. Skřivánková V.: Pravdepodobnosť v príkladoch, UPJŠ, Košice, 2006 (in Slovak)
2. Skřivánková V.-Hančová M.: Štatistika v príkladoch, UPJŠ, Košice, 2005 (in Slovak)
3. Casella, G., Berger, R., Statistical Inference, 2nd ed., Duxbury Press, 2002
4. DeGroot, M. H., Schervish, M. J.: Probability and Statistics, 4th ed., Pearson, Boston, 2012
5. Anděl J.: Základy matematické statistiky, MatfyzPress, Praha, 2011 (in Czech)

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 158

A	B	C	D	E	FX
25.32	20.89	13.92	18.99	12.66	8.23

Provides: doc. RNDr. Martina Hančová, PhD.

Date of last modification: 14.04.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ MDM/14	**Course name:** Mathematics and didactics of mathematics

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

Number of ECTS credits: 1

Recommended semester/trimester of the course:

Course level: II.

Prerequisities: ÚMV/DDMa/14 and ÚMV/DDMb/14

Conditions for course completion:
Acquiring the required number of credits in the structure defined by the study plan.

Learning outcomes:
Evaluation of student‘s competences with respect to the profile of the graduate.

Brief outline of the course:

Recommended literature:

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 86

A	B	C	D	E	FX
29.07	24.42	23.26	13.95	9.3	0.0

Provides:

Date of last modification: 03.05.2015

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ FEP1/07	**Course name:** Microcomputer Based Science Laboratory

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:

Course level: II.

Prerequisities:

Conditions for course completion:
Terms and conditions of assessment during the semester
-participation in classes in accordance with study regulations and teacher´s instructions
-active participation at seminars and exercises
-submitting all the assignments in accordance with teacher´s instruction
-realization, presentation and defence of the final assignment
Final assessment:
-based on assessment during the semester
Conditions for successful completion of the course:
-participation in lessons in accordance with the study regulations and teacher's instructions
-achieving the level higher than 50 % in assessment during the semester and in final assessment

Learning outcomes:
By the end of the course student gains an overview about the possible use of digital technologies to support active learning in science implementing methods of inquiry-based science education. He gains skills to use and develop activities on measuring data with the help of datalogging, measuring on videorecordings and picture and modeling processes. Student is able to implement such activities in science teaching to support active learning, conceptual understanding and inquiry skills´ development.

Brief outline of the course:
1. Inquiry-based science education (IBSE). Inquiry skills. Digital technologies to enhance IBSE.
2. Inquiry teaching and learning in computer-based laboratory. Digital tools for data collection, videomeasruement, modeling and data processing and analysis.
3. Data collection in real experiment with the help of sensors.
4. Processing and analysis of data gained with the help of sensors.
5.Activities on real-time measurements and processing and data analysis implementing IBSE methods.
6. Videomeasurement. How to measure on videorecording and picture.
7. Processing and analysis of data gained from videomeaurement.
8. Activities on videomeasurement 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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ MDT/19	**Course name:** Modern Didactical Technology

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Summary evaluation based on ongoing assessment:
1. Active participation at the seminars (in the contact or online form) with minimum 80% participation.
2. Practical ongoing assignments (10) and their defense. At least 50% must be obtained from each assignment elaborated according to assessment criteria.

Learning outcomes:
Student graduated from subject will be able:
- recognize current available digital tools and their parameters for educational activities,
- to use all types of actual digital tools in education of science or humanities,
- to design and realize educational activities by using the modern technologies.

Brief outline of the course:
00. Introduction - goals and didactic principles
01. Modern hybrid classroom in 21st century
02. Digital learning spaces in 21st century
03. Cloud repositories, services, modern web-browser
04. Cloud editors for notes, texts, spreadsheets and presentations
05. Digital text (scan, OCR, voice recognition, Kami pdf)
06. Digital image and audio (digital recording and editing)
07. Interactive E-voting and videoconference systems in education
08. Digital collaborative technologies (social e-reader, collaborative whiteboard)
09. Virtual and digitally based experiments, digital databases
10. Education video (digital recording and editing)
11. Smartphone and tablet in classic and blended education
12. Teaching tools and digital teacher's workspace

Recommended literature:
1. Kireš, M. et al.: Modern didactical technics in teacher practice (in Slovak), Košice: Elfa, 2010
2 . Redecker, C., & Punie, Y. (2017). European Framework for the Digital Competence of Educators: DigCompEdu. Luxembourg: Publications Office of the European Union.

3. C. R. Tucker, T. Wycoff, J. T. Green, Blended Learning in Action: A Practical Guide Toward Sustainable Change. Thousand Oaks: Corwin Press, 2016.
4. D. Bannister, Guidelines on Exploring and Adapting: LEARNING SPACES IN SCHOOLS. Brussels: European Schoolnet, 2017.
5. current information from web sites related to didactical technologies,
catalogues of teaching tools,
current articles about modern trends in science and humanities education.

Course language:
Slovak, English

Notes:

Course assessment
Total number of assessed students: 96

A	B	C	D	E	FX
53.13	30.21	11.46	3.13	2.08	0.0

Provides: doc. RNDr. Jozef Hanč, PhD.

Date of last modification: 07.07.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ PDK/17	**Course name:** Pedagogical Communication

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 144

A	B	C	D	E	FX
73.61	24.31	2.08	0.0	0.0	0.0

Provides: Mgr. Katarína Petríková, PhD.

Date of last modification: 20.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ PDD/17	**Course name:** Pedagogical Diagnostics

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 85

A	B	C	D	E	FX
83.53	11.76	4.71	0.0	0.0	0.0

Provides: PaedDr. Michal Novocký, PhD.

Date of last modification: 20.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPE/ PPD/15	**Course 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 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 pedagogical-psychological 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 language:

Notes:

Course assessment
Total number of assessed students: 574

A	B	C	D	E	FX
27.7	28.75	25.61	14.46	3.14	0.35

Provides:

Date of last modification: 07.06.2021

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PDSI2/21	**Course name:** Pro-seminar to diploma thesis in informatics

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Conditions for ongoing evaluation:
1. Analysis of the informatics curriculum of a selected country.
2. Analysis of selected contributions of educational journals.
3. Analysis of selected papers of conference proceedings.
4. Analysis of a selected educational project.
Conditions for the final evaluation:
1. Creation of a thesis assignment (title, objectives, literature, supervisor).
2. Creation of an overview of the current state of the studied issue.
3. Creation 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 get an idea of a thesis focused on the teaching of informatics (its types, structure and life cycle).
The student actively exploit educational information resources (publication databases, journals and conference proceedings, educational projects).
The student gains an overview of the content of informatics teaching at home and abroad, as well as the teaching of current topics in informatics.
The student will create an overview of the current state of teaching issues related to the selected topic of the master thesis.

Brief outline of the course:
1. Master theses focused on teaching informatics (types of theses, structure of thesis, life cycle of theses).
2. Analysis of selected theses on teaching informatics (CRZP).
3. Overview of information resources (curricula of informatics abroad, available publication databases, journals and conference proceedings, educational projects).
4. Study and analysis of informatics curricula in selected countries (CSTA, UK, Czech Republic).
5. Study and analysis of selected papers of educational journals (INFEDU, C&E, JTIE, ICTE, MFI, OMFI, sciED).

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., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/PASZ/17	**Course name:** Problem and Aggressive Behaviour of Pupils. Etiology, Prevention and Intervention.

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
General principles of mental development as a basis for recognizing mental disorders in children and adolescents. Etiology of mental disorders and developmental disorders in children and adolescents. Definition of aggressive behavior. Concepts of aggression vs. aggressiveness. Theoretical approaches to aggression. Causes and factors of aggressive behavior. Violence at school and in the family. Bullying. Psychology of problem students. Problems resulting from disturbed behavior. Problems arising from group relationships. Adolescent lifestyle issues. Problems resulting from impaired emotional experience. Solving problematic and aggressive behavior in the school environment. School classroom management, group preventive and intervention work with the classroom. Crisis intervention. Work with parents of problem students. Principles of interviewing a parent. Cooperation with other experts. Prevention of aggressive and problematic behavior at school. Classroom and school climate, school prevention programs.
Viac o tomto zdrojovom texteNa získanie ďalších informácií o preklade sa vyžaduje zdrojový text
Odoslať spätnú väzbu
Bočné panely

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 94

A	B	C	D	E	FX
73.4	19.15	7.45	0.0	0.0	0.0

Provides: PhDr. Anna Janovská, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/KPE/EPU/15	**Course name:** Professional Ethics for Teachers and School Counsellors

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., 4.

Course level: II.

Prerequisities:

Conditions for course completion:
1. Active participation in seminars (max. 1 absence) - 30p, 2. Preparation for the seminar - 40p, 3. Preparation (description and analysis) of the moral dilemma - 30p. By summing the points obtained during the semester, the student obtains the final evaluation according to the scale: A 87 - 100, B 77 - 86, C 69 - 76, D 61 - 68, E 56 - 60, FX 55 and less. Detailed information in the electronic board of the course in AIS2. The teaching of the subject will be realized by a combined method.

Learning outcomes:
The student will understand the principles of teacher ethics and the ethics of the educational counselor as one of the branch types of professional ethics. The student can theoretically reflect on the ethical and moral issues of the teaching profession and the function of the educational counselor (including the formulation of moral values, principles and standards of the teaching profession and the function of the educational counselor in the form of codes of ethics). He is able to analyze and solve practical moral problems in pedagogical practice, which supports the development of professional skills of students. The student is able to critically evaluate situations with a moral context thanks to the opportunity to discuss moral and ethical issues in an open way.

Brief outline of the course:
Moral emotions (theories of emotion, the center of emotions in the brain, types of emotions and their manifestations)
Development of moral reasoning, cognitive approaches to moral reasoning and their comparison (Piaget, Kohlberg, Gilligan, Eisenberg, Selman, Lind),
Moral behavior (from the point of view of learning theories) and moral (vs. social and emotional) intelligence in the work of a teacher
Possibilities of examining moral behavior and judgment (socio-psychological research of conformity, obedience, aggression and psychodiagnostic approaches to the determination of moral judgment)
Morality and professional ethics in general (ethical principles in helping professions) and codes of ethics
Professional ethics of the teacher and educational counselor (terminology, concepts, main principles of teacher ethics) and teacher ethics codes

Moral dilemmas and ways of solving them, MD of teaching practice
Possibilities of influencing and stimulating moral judgment, use of moral dilemma in education
Cheating and other unethical manifestations in the school environment, ethics and etiquette of final exams

Recommended literature:

Ráczová, Babinčák, P. Základy psychológie morálky. Košice : Equilibria, 2009. - 130 s. ISBN 9788070977866 (brož.).
Gluchmanová, M. K niektorým terminologickým otázkam učiteľskej etiky. Pedagogická orientace 2007, č. 2, s. 11–25. ISSN 1211-4669.
Malankievičová, S. Profesijná etika: FF PU. 2008.
Miezgová J., Vargová, D. Etika. SPN Mladé letá 2007.
Remišová A. Dejiny etického myslela v Európe a USA. Bratislava, Kalligram 2008.
Zelina, M. Teória výchovy alebo hľadanie dobra. Bratislava SPN 2010.
Gluchmanová, M. Uplatnenie princípov a hodnôt etiky sociálnych dôsledkov v učiteľskej etike. Prešov: FF PU,2009. 222 s. ISBN 978-80-555-0042-3
Campbell, E. The Ethical Teacher. Berkshire (England): Open University Press, 2003. 178 s. ISBN 03-3521-219-0.

Course language:
slovak

Notes:

Course assessment
Total number of assessed students: 490

A	B	C	D	E	FX
96.94	2.65	0.41	0.0	0.0	0.0

Provides: Mgr. Lucia Barbierik, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/JAC1/15	**Course name:** Programming language C

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.

Prerequisities:

Conditions for course completion:
Practics attendance and activity. Home assigment
Final project.

Learning outcomes:
The student will gain the ability to create source code files in the C programming language, which is the primary system programming language used in the creation of operating systems and system components, as well as firmware for embedded devices. The aim of the exercise is to guide students from the simple language constructs to a full understanding of working with pointers and their use in the management of static and dynamic memory.

Brief outline of the course:
1. Short overview of language history, explanation of terms, code compilation, linking and program execution.
2. Variables and data types, unary, binary and ternary operations, operator precedence.
3. Cycles, conditions. Structures, unions and enumerators.
4. Functions.
5. Pointers - concept, implementation, pointer arithmetic.
6. Fields - principle, implementation.
7. Dynamic memory allocation.
8. N-dimensional fields and pointers.
9. Text strings.
10. Input and output, command line arguments, process return codes.
11. Dynamic fields and structures.
12. Basic operations with regular files.
13. Pointer to a function.
14. Compiling a program from source code using the "make" utility.

Recommended literature:
1. KERNIGHAN, Brian W., Dennis M. RITCHIE. Programovací jazyk C. Brno: Computer Press, 2006. ISBN:802510897X.
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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
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 credits: 5

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Combined method.
Assessment Maximum 50 points during the semester (Three assignments).
Exam entry criteria: Active participation in exercises and at least 35 points obtained during the semester.
Continuous assessment (50%) and written examination (50%) / 10 questions.
Final evaluation:
A 94-100
B 93-87
C 86-80
D 79-73
E 72- 66
FX 65 -0
Electronic board of the course AIS2 - more information and news.

Learning outcomes:
Students will be able to show understanding of the human behaviour in educational situations.
Students will be able to describe, explain and justify possible teachers‘ decisions by using psychological concepts, principles and theories.
Students will be able to apply the psychological findings in the field of education.
Students will be able 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

A	B	C	D	E	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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/PTPN/17	**Course name:** Psychology of Creativity and Working with Gifted Students in Teacher 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 credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
1. active participation in lessons (max. 2 absences) - 30p, 2. own output at the seminar - 40p, 3. seminar work - 30p. By summing the points obtained during the semester, the student obtains the final evaluation according to the given scale: A 87 - 100, B 77 - 86, C 69 - 76, D 61 - 68, E 56 - 60, FX 55 and less. Detailed information in the electronic board of the course in AIS2. The teaching of the subject will be realized by a combined method.

Learning outcomes:
The student understands the basic factors and process of creativity. The student is able to explain the specifics of working with the gifted. He knows the methods of identifying talent and also can apply methods to support creativity and the development of talent in the implementation of creative creativity in education.

Brief outline of the course:
The concept of creativity.
A brief history of the theory of creativity.
Social, psychological and biological factors of creativity.
Cognitive processes in creativity.
Creativity and cognitive style.
Development of creativity.
Talent and giftedness.
Methods of determining creativity and talent.
Methods of developing creativity and talent.
Creativity and talent development programs. Specifics of working with the gifted children.

Recommended literature:
DOČKAL, V. (2006): Inteligencia a tvorivosť, tvorivé nadanie od intelektovej schopnosti po štruktúru osobnosti. In: KUSÁ, D. a kol. EDS. (2006): Zjavná a skrytá tvorivosť. Bratislava: Slovak Academic Press
HŘÍBKOVÁ, L. (2009): Nadání a nadaní. Pedagogicko- psychologické přístupy, modely, výzkumy a jejich vztah ke školské praxi. Praha: Grada Publishing
DACEY, J.S.- LENNON, K.H. (2000): Kreativita. Praha: Grada

GROSS, M.U.M. (2009): Highly Gifted Young People: Development from Childhood to Adulthood. In: SHAVININA, L. (2009): International Handbook on Giftedness. Part one. Springer
KUSÁ, D. a kol. EDS. (2006): Zjavná a skrytá tvorivosť. Bratislava: Slovak Academic Press
KOLKOVÁ, S. (2000): Tvorivosť a jej rozvoj vo voľnočasových aktivitách detí (v školskom klube). Bratislava: Metodické centrum v Bratislave
LOKŠOVÁ, I., - LOKŠA, J.: (2003): Tvořivé vyučování. Praha: Grada
LAZNIBATOVÁ, J. (2004): Špecifiká vývinu a vzdelávania nadaných detí. In: Psychológia a patopsychológia dieťaťa, roč.39, č. 2-3
LAZNIBATOVÁ, J. (2001): Nadané dieťa, jeho vývin, vzdelávanie a podporovanie. Bratislava: Iris
MESÁROŠOVÁ, M. (1998): Nadané deti. Poznávanie a rozvíjanie ich osobnosti. Prešov: Manacon
SZOBIOVÁ, E. (2004): Tvorivosť – Od záhady k poznaniu. Bratislava: Stimul - Centrum informatiky a vzdelávania FIF UK
National and international scientific journlas

Course language:
slovak

Notes:

Course assessment
Total number of assessed students: 79

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: Mgr. Lucia Barbierik, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KSSFaK/ ČGUAP/15	**Course name:** Reading Literacy in Educational Process
Course type, scope and the method: **Course type:** Lecture **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 2.	
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: 42	

abs	n
100.0	0.0

Provides: doc. PaedDr. Ivica Hajdučeková, PhD.
Date of last modification: 29.06.2022
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ PPU1a/15	**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 credits: 2

Recommended semester/trimester of the course: 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 selected 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
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ MPPb/15	**Course name:** Scheduled practice teaching

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:
Conditions for ongoing evaluation:
1. Observations for 11 lessons of the subject of informatics.
2. Independent leading 1 lesson from the subject of informatics.
3. Participation in 6 analyzes from lessons.
4. Participation in a reflexive colloquium with a didactician of informatics.

Conditions for the final evaluation:
1. Submission of 11 observation records.
2. Submission of a project of preparation for a lesson.
3. Submission of a list of observations and own lesson of the trainee.
4. Submission of evaluation of pedagogical output of the trainee.
5. Submission of a report on ongoing pedagogical practice.

Conditions for successful completion of the course:
Fulfillment of all ongoing and final assignments.

Learning outcomes:
Students acquire knowledge by observing the practical application of teaching skills for teaching the subject of informatics and get to know the organization of school work. They also acquire their first experience with the practical implementation of a informatics lesson.

Brief outline of the course:
Students observe the process of teaching informatics at secondary and primary school and analysed it with teacher trainer. Practice takes place continuously during the course of the semester. Practice is scheduled once a week at the time of first to third lesson in schools.
The first two lessons are students observing/teaching, the third lesson is for analysis of the first two under the guidance of a teacher trainer.

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: 72

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., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ VPPb/15	**Course name:** Scheduled practice teaching
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: Teaching of a specified number of hours and visitations of specified number of classes (1 teaching and 11 visitation of classes). Submission of written assignments (reflection on teaching practice, statement of teaching hours and classes visitations, selected lesson plans).	
Learning outcomes: Application of the knowledge acquired in didactic courses focused on teaching mathematics in pedagogical practice. Development of the student's self-reflection within the framework of the analysis of the lessons taught by the student. Identification of the student's weaknesses in order to shift his/her knowledge. To acquaint students with the atmosphere and the organization of school.	
Brief outline of the course: Visitations of classes in selected lessons Analysis of lessons Lesson plans preparation Classes managed according to prepared lesson plan Reflection on realized classes	
Recommended literature: Mathematics curricula and textbooks for middle and secondary schools Hejný, M.: Teória vyučovania matematiky 2. Bratislava : SPN 1989 M. Hejný, J. Novotná, N. Stehlíková: Dvacet pět kapitol z didaktiky matematiky 2, Univerzita Karlova v Praze - Pedagogická fakulta, Praha, 2004	
Course language: Slovak	
Notes:	

Course assessment
Total number of assessed students: 97

abs	n
100.0	0.0

Provides: doc. RNDr. Ingrid Semanišinová, PhD., doc. RNDr. Dušan Šveda, CSc.

Date of last modification: 24.08.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ 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:
1. Basic aerobics – low impact aerobics, high impact aerobics, basic steps and cuing
2. Basics of aqua fitness
3. Basics of Pilates
4. Health exercises
5. Bodyweight exercises
6. Swimming
7. Relaxing yoga exercises
8. Power yoga
9. Yoga relaxation
10. 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. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ VMA/19	**Course name:** Selected topics on mathematical analysis

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

Number of ECTS credits: 4

Recommended semester/trimester of the course: 2.

Course level: I., II.

Prerequisities: ÚMV/FRPb/19

Conditions for course completion:
Final evaluation is given by continuous assessment.

Learning outcomes:
Expand the knowledge of mathematical analysis needed to deepen understanding of machine learning and artificial intelligence.

Brief outline of the course:
1. Vector (linear) space - examples of infinite-dimensional spaces (spaces of sequences and functions).
2. Metric space (MS) - metric, convergence of sequences, closure and interior of a set, completeness and compactness of MP, Banach fixed-point theorem.
3. Normed linear space (NLS) - norm, Banach spaces, relation to MS, dual spaces, Hölder, Minkowski inequality.
4. Space with scalar product - unitary and Hilbert spaces, Cauchy-Schwartz inequality, Pythagorean theorem, parallelogram rule, relation to LNP, orthogonal projections.
6. Operators (functionals) in NLP - linearity, continuity, boundedness, adjointness.

Recommended literature:
1. N. Katzourakis, E. Varvaruca, An illustrative introduction to modern analysis. Boca Raton, FL:CRC Press (2018)
2. A. M. Bruckner, J. B. Bruckner, B. S. Thomson, Real analysis, 2nd. ed., ISBN 1434844129, 2008
3. Taylor, A.: Úvod do funkcionální analýzy, Academia 1973.
4. Kolmogorov, A., Fomin, S.: Základy teórie funkcí a funkcionální analýzy, 1975.
5. S. Lang, Undegraduate Analysis, Springer, 1997.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 1

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Ondrej Hutník, PhD., doc. Mgr. Jozef Kiseľák, PhD.

Date of last modification: 27.03.2019

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ SHM/10	**Course name:** Seminar on history of mathematics

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Conditions for continuous evaluation:
1. Participation in teaching in accordance with the study rules and instructions of the teacher.
2. Activity.
3. Homework and tests.
4. Seminar work and its presentation at the seminar – poster from history of mathematics on the selected topic
Conditions for successful completion of the course:
1. Participation in teaching in accordance with the study regulations and according to the instructions of the teacher;
2. Credits will be awarded to students who score at least 50% on homework assignments and tests. Additional points can be achieved for the presentation of a seminar paper.

Learning outcomes:
Students will demonstrate an understanding of the history of the development of some mathematical disciplines and selected concepts, and parallels between the phylogeny and ontogeny of mathematical thinking. They will demonstrate this understanding by scoring at least 50% on tests given at the beginning of the seminar on previous topics and on homework assignments.

Brief outline of the course:
Prehistory, ontogeny and phylogeny.
Mathematics in ancient cultures: Egypt, Mesopotamia, China, India.
Mathematics in ancient Greece: Origins of Greek natural philosophy and mathematics. The discovery of incommensurability and its consequences (Pythagoras and his school). Classical problems of Greek mathematics. Problems with infinity (Zeno). Eudoxus' method. Plato, Aristotle, Euclid and his Foundations. Archimedes of Syracuse, Eratosthenes, Apollónios, Claudios Ptolemy, Diophantos.
Arabic mathematics and its relation to medieval European mathematics.
The origins of modern mathematics. The search for the roots of polynomial equations. The origins of analytic geometry. Probability. Infinitesimal calculus. Number theory. Non-Euclidean geometry. The origin of set theory.
Development of mathematical symbolism.

Selected topics in school mathematics from the perspective of the history of mathematics.

Recommended literature:

Burton, D. M.: The History of Mathematics: An Introduction. McGraw−Hill, 2007.
Devlin, K.: Jazyk matematiky. Dokořán, 2002. (in czech)
Čižmár, J . Dejiny matematiky (Od najstarších čias po takmer súčasnosť) Perfekt, 2017. (in slovak)
Mareš , M . Příběhy matematiky. Pistorius, 2011. (in czech)

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 125

A	B	C	D	E	FX
72.0	12.0	8.8	3.2	3.2	0.8

Provides: doc. RNDr. Ingrid Semanišinová, PhD.

Date of last modification: 31.01.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/SSM/15	**Course name:** Seminar on school mathematics

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Active participation.
Seminar works.

Learning outcomes:
In this course, students will learn the way of thinking that a mathematics teacher should use in the processing of school mathematics in preparation for the lesson. They will get acquainted with some possibilities of using digital technologies in teaching mathematics and acquire basic knowledge for quality use of formative assessment.

Brief outline of the course:
The concept of function in mathematics, its aspects, and definitions. The concept of function in the school curriculum, knowledge of the structure of mathematics with respect to the concept of function. Proximal formative assessment, knowledge of the characteristics of learning mathematics. Instrumented formative assessment with a focus on the use of digital technologies for assessment in mathematics. Selection of tasks and digital tools for teaching functions. MTSK model as a tool for teacher self-reflection.

Recommended literature:
Slovak and Czech mathematics textbooks for secondary education. National mathematics curriculum of Slovakia, Czech republic and USA.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 84

A	B	C	D	E	FX
55.95	39.29	3.57	0.0	1.19	0.0

Provides: RNDr. Veronika Hubeňáková, PhD.

Date of last modification: 18.02.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DSU1a/15	**Course name:** Seminar to diploma theses in informatics XI

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.

Course assessment
Total number of assessed students: 12

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., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ DSU1b/15	**Course name:** Seminar to diploma theses in informatics XI

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚINF/DSU1a/15

Conditions for course completion:
Conditions for ongoing evaluation:
1. Creation of diagnostic tools for teaching selected topics.
2. Creation of teaching aids for teaching selected topics.
3. Creating preparation for teaching selected topics.
4. Evaluation of pilot 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/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: 31

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., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KSSFaK/VSJU/15	**Course name:** Slovak Language for Teachers

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

Number of ECTS credits: 2

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

Course level: II.

Prerequisities:

Conditions for course completion:
Conditions for successful completion of the course:
a) regular active participation in seminars,
b) preparation of basic literature and content of lectures,
c) elaboration of seminar work / creative task,
d) successful completion of the final test.
Conditions for obtaining the final evaluation: a) seminar work / creative task b) final test (min. 56%) Final evaluation: 100,00 - 92,00% A 91,99 - 83,00% B 82,99 - 74,00 % C 73.99 - 65.00% D 64.99 - 56.00% E 55.99% and less FX
Prerequisites for successful completion of the course are annually updated on the electronic bulletin board in AIS2.

Learning outcomes:
During the final evaluation, the student demonstrates adequate mastery of the content standard of the course, which is defined by the required literature and seminar content, and demonstrates mastery of the performance standard, within which the student is able to practically apply the standard of standard Slovak in oral and written communications. manuals, gain skill in the bibliographic and citation standard. The graduate of the course normatively masters written communication on the basis of current orthographic rules and knows the basic characteristics of the means of expression of the text and functional language style.

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

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

FINDRA, J.: Štylistika slovenčiny. Martin : Osveta, 2004.
FINDRA, J.: Štylistika slovenčiny v cvičeniach. Martin : Osveta, 2005.
KRÁĽ, Á.: Pravidlá slovenskej výslovnosti. Martin: Matica slovenská 2006. 423 s.
Krátky slovník slovenského jazyka. Martin: Matica slovenská 2020.
SABOL, J.- SLANČOVÁ, D. - SOKOLOVÁ, M.: Kultúra hovoreného slova. Prešov, FF UPJŠ 1989.
Pravidlá slovenského pravopisu. Bratislava: Veda 2000 (2013).
SABOL, J. – BÓNOVÁ, I. – SOKOLOVÁ, M.: Kultúra hovoreného prejavu. Prešov: FF PU 2006.
SLANČOVÁ, D.: Praktická štylistika. 2., upravené a doplnené vydanie. Prešov: Slovacontact 1996. 178 s. ISBN 80-901417-9-X.
Slovník súčasného slovenského jazyka. Bratislava: Veda 2006.
Slovník súčasného slovenského jazyka. Bratislava: Veda 2011.
Slovník súčasného slovenského jazyka. Bratislava: Veda 2015.

Course language:
Slovak language

Notes:

Course assessment
Total number of assessed students: 124

A	B	C	D	E	FX
16.94	25.0	33.87	13.71	9.68	0.81

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

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVa/11	**Course 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 semester/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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVb/11	**Course name:** Sports Activities II.

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:
active participation in classes - min. 80%.

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:
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: 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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ TVc/11	**Course name:** Sports Activities III.

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

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:
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: 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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVd/11	**Course name:** Sports Activities IV.

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 4.

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:
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: 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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ SVK1/15	**Course 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., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ SVK/10	**Course name:** Students 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:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes: Individual scientific work of students. Publishing of obtained results in a written form and as a public presentation.	
Brief outline of the course:	
Recommended literature: With respect to the research problematics (article in journals, books).	
Course language: Slovak or English	
Notes:	
Course assessment Total number of assessed students: 17	

abs	n
100.0	0.0

Provides:
Date of last modification: 01.12.2021
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

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 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: carrying a canoe, entering and exiting a canoe, righting a canoe, paddling

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:
- implement the acquired knowledge in different situations and practice,
- implement basic skills to manipulate a canoe on a waterway,
- determine the right spot for camping,
- prepare a suitable material and equipment for camping.

Brief outline of the course:
Brief outline of the course:
1. Assessment of difficulty of waterways
2. Safety rules for rafting
3. Setting up a crew
4. Practical skills training using an empty canoe
5. Canoe lifting and carrying
6. Putting the canoe in the water without a shore contact
7. Getting in the canoe
8. Exiting the canoe
9. Taking the canoe out of the water
10. Steering
a) The pry stroke (on fast waterways)
b) The draw stroke

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

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPE/ MPPa/15	**Course name:** Supervised Teaching Practice
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: 2	
Recommended semester/trimester of the course: 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: 689

abs	n
100.0	0.0

Provides: doc. PhDr. Beata Gajdošová, PhD., doc. PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petríková, PhD.
Date of last modification: 20.06.2022
Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ PDU/15	**Course name:** Teaching Methodology and Pedagogy

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 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

A	B	C	D	E	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. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/UPR/15	**Course name:** The Art of Aiding by Verbal Exchange

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
1. Active participation in seminars
2. Elaboration and presentation of PPT presentation on the assigned topic. Maximum number of points 20; minimum number of points 11.
3. Final test in the range of 20 questions from selected chapters and lectures. Maximum number of points 20; minimum number of points 11. The final evaluation (mark) is the sum of points for the presentation and the test. A 40b - 37b B 36b - 33b C 32b - 29b D 28b - 25b E 24b - 21b FX 20b - 0b
The evaluation of the course and its subsequent completion will be based on clearly and objectively set requirements, which will be set in advance and will not change. The aim of the assessment is to ensure an objective and fair mapping of the student's knowledge while adhering to all ethical and moral standards. There is no tolerance for students' fraudulent behavior, whether in the teaching process or in the assessment process.

Learning outcomes:
Provide students with basic information about a systemic approach to helping. Train interviewing, clarify orders. Reflect on help options.
The student is able to demonstrate an understanding of the theoretical principles of conducting a helping conversation.
The student is able to describe, explain and evaluate in what context to use which of the selected techniques to help the interview with the individual.
The student is able to use basic selected techniques when working with an individual in the interview process.
The method of teaching the subject will be oriented to the student. Lecturers will be interested in students' needs, expectations and opinions so as to encourage them to think critically by expressing respect and feedback on their opinions and needs.
The content of the curriculum will be based on primary and high-quality sources that will reflect the topicality of the topics so as to ensure the connection of the curriculum with other subjects and also the connection of the curriculum with practice. Students will be expected to take an active approach in lectures and seminars with an emphasis on their independence and responsibility.

Brief outline of the course:

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

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 149

A	B	C	D	E	FX
89.26	2.68	6.04	1.34	0.67	0.0

Provides: Mgr. Ondrej Kalina, PhD.

Date of last modification: 24.06.2022

Approved: prof. PhDr. Oľga Orosová, CSc., prof. RNDr. Jozef Doboš, CSc., prof. RNDr. Stanislav Krajči, PhD.