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 credits: 2

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To be able to install Linux based system, divide disks, to know how to install, configure and manage several network deamons.

Brief outline of the course:
 1. Introduction to network services
 2. SSH
 3. Routing and NAT
 4. Introduction to Firewall
 5. Advanced firewall settings
 6. DHCP server
 7. Web server (apache, php, mysql)
 8. Monitoring Server (SNMP, MRTG)
 9. Samba Server
 10. Mail server (smtp, imap, postfix)
 11. Proxy server
 12. Windows server
 13. Windows Server II.
 14. Introduction to Virtualization (Hyper-V OpenVZ)

Recommended literature:
 1. Linux Documentation Project, 4 updated edition. Brno: Computer Press (2008).
 2. Stanek, W.: Windows Server 2012 Inside Out. Microsoft Press (2013)
 3. Shah, S. Soyinka, W. Administration Linux. Grade (2007)
 4. Nemeth, E., et al.: Linux. Brno: Computer Press (2008)

Course language:

Course assessment
Total number of assessed students: 83

A	B	C	D	E	FX
51.81	24.1	6.02	4.82	7.23	6.02

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 credits: 3

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Computer science teaching plan at secondary grammar school. Conceptual map and cognitive objectives of chosen topic. Solving of algorithmic problem with the description of used problem solving strategies. Collection of tasks with increasing complexity. Video recorded from microteaching of chosen topic using activating methods. Applet to the teaching of algorithms and programming. Worksheet to programming chosen game in Scratch. Activity in discussion forums.

Learning outcomes:
1. To acquire an overview of the objectives, content, modern methods of teaching computer science.
2. To create conceptual map, cognitive objectives and tasks collection with increasing complexity for chosen topic.
3. To solve selected algorithmic problems using various problem solving strategies.
4. To master the methodology of teaching of algorithms and programming using selected algorithmic simulations, games, programming environments.

Brief outline of the course:
The objectives and content of computer science education. Solving algorithmic problems exploiting algorithmic games and children's programming environment. Teaching task, its forms and parameters. Creation of tasks collection with increasing complexity. Activating methods of teaching computer science. Methodology of teaching selected topics of algorithms and programming (recursion, sorting, searching, coding, encryption, compression, checksums). Methodology of teaching programming in Scratch.

Recommended literature:
1. HAZZAN, Orit - LAPIDOT, Tami - RAGONIS, Noa (2011). Guide to teaching computer science : an activity-based approach. London ; New York : Springer, ©2011. ISBN 978-0-85729-443-2.
2. BELL, Tim - MORGAN, Jack (2014). Computer Science Field Guide. University of Canterbury, New Zealand. http://www.cosc.canterbury.ac.nz/csfieldguide/index.html
3. BELL, Tim - WITTEN, Ian H. - FELLOWS, Mike (2005). Computer Science Unplugged: An enrichment and extension programme for primary-aged children. Computer Science Unplugged. 2005. http://ir.canterbury.ac.nz/bitstream/10092/247/1/12584508_Main.pdf

4. KALAŠ, Ivan et al. (2001). Informatika pre stredné školy, Bratislava : SPN, 2001. ISBN 80-10-00157-0.

5. TOMCSÁNYIOVÁ, Monika et al. (2009). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika - Riešenie problémov a základy programovania 1. 2009. ISBN 978-80-8118-023-1.

6. GUNIŠ, Ján - SUDOLSKÁ, Miloslava - ŠNAJDER, Ľubomír (2009). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika - Aktivizujúce metódy vo vyučbe školskej informatiky. 2009. ISBN 978-80-89225-96-5.

Course language:

Course assessment
Total number of assessed students: 64

A	B	C	D	E	FX
26.56	15.63	23.44	20.31	12.5	1.56

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

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 5

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
The preliminary assessment shall be based on the results of independent work of student on computers for a number of sub-assignments (course and evaluation of own inquiry activity, didactical quiz, interactive modelling applet, inquiry-based worksheet with tasks and questions). In final exam students will demonstrate an overview of the theoretical knowledge in the field of computer science education in written form and they will present and defend their own educational project for the chosen topic of the computer science (containing objectives, system of tasks with increasing complexity, tasks solutions and methodological commentaries and didactical quiz).

Learning outcomes:
1. For the chosen topic of school informatics create didactic quiz, inquiry-based worksheet with tasks and questions, implement and evaluate own inquiry activity.
2. To create an interactive model for the chosen natural phenomenon or computer science concept.
3. To create a lesson preparation using modern teaching methods and aids, to implement it in practice and evaluate.

Brief outline of the course:
Teaching paradigms. Inquiry based computer science education. Process of creating concepts in computer science. Assessment of learning objectives of pupils, didactical quizes. Programming teaching (paradigms, environments, data types, commands, variables). Specifics of computer arithmetics. Mathematical modelling and simulation. Methodology of teaching selected topics of computer science (multimedia, internet). Computer science competitions.

Recommended literature:
1. HAZZAN, Orit - LAPIDOT, Tami - RAGONIS, Noa (2011). Guide to teaching computer science : an activity-based approach. London ; New York : Springer, ©2011. ISBN 978-0-85729-443-2.
2. BELL, Tim - MORGAN, Jack (2014) Computer Science Field Guide. University of Canterbury, New Zealand. http://www.cosc.canterbury.ac.nz/csfieldguide/index.html
3. SALANCI, Ľubomír - TOMCSÁNYIOVÁ, Monika - BLAHO, Andrej (2010). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika : Didaktika programovania 2. Bratislava : Štátny pedagogický ústav, 2010. 36 s. ISBN 978-80-8118-053-8.

4. GUNIŠ, Ján - ŠNAJDER, Ľubomír (2009). Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika : Didaktika predmetu Informatika 2. Bratislava : Štátny pedagogický ústav, 2009. 45 s. ISBN 978-80-8118-021-7.

Course language:

Course assessment
 Total number of assessed students: 148

A	B	C	D	E	FX
16.89	33.78	24.32	16.22	8.11	0.68

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

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
 Elaboration and presentation of papers on selected areas of computer science education.
 Present the interim results of the diploma thesis.

Learning outcomes:
 Get an overview of the results of educational research in the field of computer science education.
 To learn currently work on the diploma thesis, to present partial results of the pedagogical
 research work on it.

Brief outline of the course:
 Educational research in the field of computer science education. Study of educational literature
 (conference proceedings, journals, studies) focusing on selected issues of computer science
 education.
 Presentations of interim results of students' diploma theses.

Recommended literature:
 1. KATUŠČÁK, D. Ako písať vysokoškolské a kvalifikačné práce: ako písať seminárne práce
 a ročníkové práce, práce študentskej vedeckej a odbornej činnosti, diplomové, záverečné a
 atestačné práce a dizertácie. 3. vyd. Nitra : Enigma, 2004. 162 s. ISBN 80-89132-10-3.
 2. ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.
 3. ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written
 documents.
 4. ECO, U. Jak napsat diplomovou práci. Olomouc : Votobia, 1997. 278 s. ISBN 80-7098-173-7.
 5. Digital libraries (ACM Digital Library, IEEExplore, DOAJ)
 6. Scientific literature relevant to diploma thesis according of recommendation of supervisor.

Course language:
 Slovak

Course assessment
 Total number of assessed students: 6

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.
Date of last modification: 25.02.2018
Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚINF/DSU1a/15

Conditions for course completion:

Learning outcomes:
Get an experience with design, realization and evaluation of own educational research in the field of computer science education. To learn currently work on the diploma thesis, to present partial results of the pedagogical research work on it.

Brief outline of the course:
Educational research in the field of computer science education. Study of educational literature (conference proceedings, journals, studies) focusing on selected issues of computer science education. Design, realization and evaluation of own educational research in the field of computer science education. Presentations of interim results of students' diploma theses.

Recommended literature:
1. HENDL, Jan (2005). Kvalitativní výzkum - základní metody a aplikace. Praha : Portál, 2005. ISBN 80-7367-040-2.
2. ŠVAŘÍČEK, Roman - ŠEĎOVÁ, Klára et al. (2007). Kvalitativní výzkum v pedagogických vědách. Praha : Portál, 2007. ISBN 978-80-7367-313-0.
3. GAVORA, Peter et al. (2010). Elektronická učebnica pedagogického výskumu.
[online]. Bratislava : Univerzita Komenského, 2010. Dostupné na: http://www.e-metodologia.fedu.uniba.sk/ ISBN 978–80–223–2951–4.
4. BELL, Tim - MORGAN, Jack (2014). Computer Science Field Guide. University of Canterbury, New Zealand. Dostupné na: http://www.cosc.canterbury.ac.nz/csfieldguide/index.html
5. Digital libraries (ACM Digital Library, IEEExplore, DOAJ)
6. Scientific literature relevant to diploma thesis according of recommendation of supervisor.

Course language:
Slovak

Course assessment
Total number of assessed students: 30

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.
Date of last modification: 25.02.2018
Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 4

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion: test 30 points active participation 10 points project (development of mathematical model, videomeasurement and physical experiment) 60 points The final assessment is based on the sum of partial results

Learning outcomes: After the course student gains an overview about the possible use of digital technologies to support active learning in science. He gains skills to use and develop activities on measuring data with the help of datalogging, measuring on picture and viderecording and modeling natural processes. Student is able to implement such activities in science teaching to support active learning and conceptual understanding.

Brief outline of the course: The aim of the course is to present the use of digital technologies to enhance active learning in science with the help of datalogging, videomeasurement and modeling tools. Mathematical modeling is based on dynamical modeling of natural phenomena. Within the course students carry out computer-based experiments, videomeasurements and measurement on picture and create corresponding models. The activities involve selected topics of secondary schools science. The emphasize is put on the methods of implementation of the activities with regard to active students´ learning.

Recommended literature: [1]Koubek, V., Pecen, I.: Fyzikálne experimenty a modely v školskom mikropočítačom podporovanom laboratóriu, Univerzita Komenského, Bratislava, 1999 [2]Príručka COACH [3]http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm

Course language: Slovak

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: 01.03.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 5

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

Course level: II.

Prerequisities:

Conditions for course completion:

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

Brief outline of the course:
 Greibach normal structure of contextfree gramars.Deterministic pushdown automata. Context-sensitive grammars and linearly-bounded Turing machines. Deterministic linearly-bounded Turing machines. Space bounded machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal languages.

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 10

A	B	C	D	E	FX
30.0	40.0	20.0	10.0	0.0	0.0

Provides: prof. RNDr. Viliam Geffert, DrSc., Mgr. Alexander Szabari, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 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:
 Become skilled in language C and get knowledge of the theoretical concepts that are used in the development in low-level software.

Brief outline of the course:
 1. Installing and setting up the development environment. Simple program in C, compiling and running.
 2. Loops, conditions. Introduction to arrays. Numeric functions from numeric library. Compiling with `gcc` and setting up the warnings and hints.
 3. Functions. Statically allocated arrays. Array gotchas in C. Makefiles for complex projects.
 4. Basic I/O functions. Functions with array parameters and specifics.
 5. Dynamic memory allocation as a mechanism for dynamic arrays. Strings as a special case of arrays. Strings and file I/O.
 6. String manipulation principles and functions from standard library.
 7. Working with binary files.
 8. Custom data types. Structs.
 9. Dynamic data structures. Linked lists. Stacks and operations with these structs.
 10. Additional operations with dynamic data structures. Parameter passing with values and name.
 11. Useful tricks and hints: passing parameters from operating system, exit codes. Multidimensional arrays.
 12. Function pointers. Generic pointers. Unions.

Recommended literature:
 1. A. D. Marshall: Programming in C: UNIX System Calls and Subroutines using C. [online] <http://www.cs.cf.ac.uk/Dave/C/CE.html>
 2. J. Maasen: C for Java Programmers. [online] <http://www.cs.vu.nl/~jason/college/dictaat.pdf>
 3. Bruce Eckel: Thinking in C. [online] <http://mindview.net/CDs/ThinkingInC>

Course language:

Course assessment

Total number of assessed students: 178					
A	B	C	D	E	FX
37.08	20.22	15.73	12.36	10.67	3.93

Provides: RNDr. PhDr. Peter Pisarčík

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	

Faculty: Faculty of Science	

Course ID: ÚINF/ KKV1/15	**Course name:** Classical and quantum computations

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 credits: 6

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

Course level: II.

Prerequisities:

Conditions for course completion:
 Written work
 Writen and oral examination

Learning outcomes:
 To provide information on quantum computer and quantum computations. To compare classical and quantum models and methods.

Brief outline of the course:
The basics of classical theory of computation: Turing machines, Boolean circuits, parallel algorithms, probabilistic computation, NP-complete problems, and the idea of complexity of an algorithm. Introduction of general quantum formalism (pure states, density matrices, and superoperators), universal gate sets and approximation theorems. Grover's algorithm, Shor's factoring algorithm, and the Abelian hidden subgroup problem. Parallel quantum computation, a quantum analogue of NP-completeness, and quantum error-correcting codes.

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:

Course assessment
 Total number of assessed students: 117

A	B	C	D	E	FX
23.08	35.04	14.53	13.68	7.69	5.98

Provides: prof. RNDr. Gabriel Semanišin, PhD.
Date of last modification: 26.09.2017
Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ KP/12	Course name: Survival Course

Course type, scope and the method:
 Course type: Practice
 Recommended course-load (hours):
 Per week: Per study period: 36s
 Course method: present

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:
 Conditions for course completion:
 Attendance
 Final assessment: continuous fulfilment of all tasks within the course

Learning outcomes:
 Learning outcomes:
 Students will be familiarized with principles of safe stay and movement in extreme natural conditions as they will obtain theoretical knowledge and practical skills to solve the extraordinary and demanding situations connected with survival and minimization of damage to health. The course develops team work and students will learn how to manage and face the situations that require overcoming of obstacles.

Brief outline of the course:
 Brief outline of the course:
 Lectures:
 1. Principles of behaviour and safety for movement and stay in unknown mountains
 2. Preparation and leadership of tour
 3. Objective and subjective danger in mountains
 4. Principles of hygiene and prevention of damage to health in extreme conditions
 Exercises:
 1. Movement in terrain, orientation and navigation in terrain (compasses, GPS)
 2. Preparation of improvised overnight stay
 3. Water treatment and food preparation.

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 365

abs	n
44.38	55.62

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: Per study period: 36s
 Course method: present

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:
 Conditions for course completion:
 Attendance
 Final assessment: Raft control on the waterway (attended/not attended)

Learning outcomes:
 Learning outcomes:
 Students have knowledge of rafts (canoe) and their control on waterway.

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:

Course language:

Course assessment
 Total number of assessed students: 142

abs	n
41.55	58.45

Provides: Mgr. Peter Bakalár, PhD.
Date of last modification: 18.08.2017
Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

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: Facts and rules in Prolog. Unification of terms (Robinson's unification algorithm). Recursion and backtrack in Prolog. Computational step and computational tree. Classification of terms. Lists. Functors and operators in composed terms. Predicates for input and output. Dynamic database. Cycles (repeat-fail, for). Predicates related to backtrack. Cut. Predicates evaluating of arithmetic expressions.

Recommended literature: Bratko, I.: Prolog – programming for artificial intelligence, third edition. Addison-Wesley, 2001   Nilsson U., Maluszynski J.: Logic, Programming and Prolog, John Wiley & Sons Ltd. 1995   Nienhuys-Cheng Sh.H., Wolf R.: Foundations of Inductive Logic Programming, Springer-Verlag, 1997

Course language:

Course assessment
Total number of assessed students: 255

A	B	C	D	E	FX
21.57	10.98	13.73	24.71	27.06	1.96

Provides: RNDr. Ondrej Krídlo, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 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:
 During the practice students observe 11 computer science lessons and leads one own computer science hour under the guidance of a teacher trainer. Confirmation of classroom visits. Written assessment from the teacher trainer.

Learning outcomes:
 Students acquire knowledge by observing the practical application of teaching skills for teaching the subject of computer science and getting to know the organization of school work. Introduction into practical implementation of computer science lesson.

Brief outline of the course:
 Students observe the process of teaching computer science at primary and secondary 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 hours observation/teaching, the third hour analysing process under the guidance of a teacher trainer.

Recommended literature:
 Current computer science textbooks for primary and secondary schools in Slovakia.

Course language:
 Slovak

Course assessment
 Total number of assessed students: 64

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities: ÚINF/MPPb/15

Conditions for course completion:
A certified statement of classroom visits and own taught lessons as proof of a practice within the range prescribed 6 hours classroom visits and 18 taught computer science lessons. Observation records and lesson preparations.

Learning outcomes:
The student under supervision of an experienced teacher trainer teaching practical skills for computer science teaching. Student is familiar with the life of the school, extra-curricular and other activities.

Brief outline of the course:
Observations of teacher trainer lessons, consultations of lesson preparations of students, teaching aids, teaching own lessons, methodological and scientific analysis of lessons, active participation in extracurricular and other activities of training school.

Recommended literature:
Current computer science textbooks for primary and secondary schools in Slovakia.

Course language:
Slovak

Course assessment
Total number of assessed students: 12

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course: 4.

Course level: II.

Prerequisities: ÚINF/MPPc/15

Conditions for course completion:
A certified statement of classroom visits and own taught lessons as proof of a practice within the range prescribed 8 hours classroom visits and 30 taught computer science lessons. Observation records and lesson preparations.

Learning outcomes:
The student under supervision of an experienced teacher trainer teaching practical skills for computer science teaching. Student is familiar with the life of the school, extra-curricular and other activities.

Brief outline of the course:
Observations of teacher trainer lessons, consultations of lesson preparations of students, teaching aids, teaching own lessons, methodological and scientific analysis of lessons, active participation in extracurricular and other activities of training school.

Recommended literature:
Current computer science textbooks for primary and secondary schools in Slovakia.

Course language:
Slovak

Course assessment
Total number of assessed students: 9

abs	n
100.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	

Faculty: Faculty of Science	

Course ID: ÚINF/ MSSUI/15	**Course name:** Informatika a didaktika informatiky

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

Number of credits: 1

Recommended semester/trimester of the course:

Course level: II.

Prerequisities: ÚINF/DIN1b/15 and ÚINF/TIK1/15 and (ÚINF/UGR1/15 or ÚINF/KKV1/15 or ÚINF/UNS1/15 or ÚINF/FO1/15)

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 13

A	B	C	D	E	FX
38.46	23.08	23.08	7.69	7.69	0.0

Provides:

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 48

A	B	C	D	E	FX
54.17	12.5	10.42	4.17	10.42	8.33

Provides: PaedDr. Ingrid Puchalová, PhD., Mgr. Barbora Molokáčová

Date of last modification: 25.08.2017

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 15

Recommended semester/trimester of the course:

Course level: II.

Prerequisities: ÚINF/DSU1b/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment Total number of assessed students: 10

A	B	C	D	E	FX
50.0	0.0	50.0	0.0	0.0	0.0

Provides:

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	

Faculty: Faculty of Science	

Course ID: ÚINF/ PDSI1/15	**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 credits: 2

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
 To inform students about areas of informatics they are suitable to work in diploma theses. In the end of semester students have to prepared themes of diploma theses, goals and recommended study literature.

Brief outline of the course:
 The seminar is oriented to problems prospective to preparations of Diploma theses.

Recommended literature:
 MEŠKO, D., KATUŠČÁK, D. Akademická príručka. 1. vyd. Vydavateľstvo Osveta : Martin, 2004. 316 s. ISBN 80-8063-150-6
 ISO 690: 1987 Documentation - Bibliographic references. Content, form and structure.
 ISO 2145: 1978 Documentation - Numbering of divisions and subdivisions in written documents.
 Eco, U.: Jak napsat diplomovou práci, z taliančiny Come si fa una tesi di laures, Milano, 1977, Olomouc, Votobiax.
 Odborná a vedecká literatúra týkajúca sa diplomovej práce podľa odporúčania vedúceho diplomovej práce.

Course language:

Course assessment
 Total number of assessed students: 439

abs	n
99.32	0.68

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion: Active classroom participation, 2 absences tolerated (4x45 min.) tolerated. 2 tests (5th/6th week and 12th/13th week), no retake. Minipresentation on chosen topic. Final evaluation- average assessment of tests 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:

Brief outline of the course:

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.

Course assessment
Total number of assessed students: 344

A	B	C	D	E	FX
30.81	23.55	15.99	11.05	7.27	11.34

Provides: Mgr. Zuzana Naďová

Date of last modification: 06.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
 Active classroom participation (max. 2x90 min. absences tolerated). 2 test (5th/6th and 12/13th week), no retake. Final evaluation- average assessment of tests. Grading scale: 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:
 Misztal M.: Thematic Vocabulary, Fragment, 1998
 McCarthy, O'Dell: English Vocabulary in Use, 1994
 Alexander L.G.: Longman English Grammar, Longman, 1988
 Jones I. - Communicative Grammar Practice, CUP, 1992
 Vince M.: Macmillan Grammar in Context, Macmillan, 2008
 www.bbclearningenglish.com
 Gráf T., Peters S.: Time to practise, Polyglot, 2007

Course language:

Course assessment
 Total number of assessed students: 394

A	B	C	D	E	FX
39.34	18.53	17.01	8.88	6.09	10.15

Provides: Mgr. Lenka Klimčáková

Date of last modification: 06.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 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 short academic presentations in English on selected topics.
 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:
 Uplatnenie a aktívne používanie svojich teoretických vedomostí v praktických komunikačných situáciách. Zdokonalenie jazykových vedomostí a zručností študenta, rečovej, pragmatickej a vecnej kompetencie, predovšetkým zlepšujú komunikáciu, schopnosťprijímať a formulovať výpovede, efektívne vyjadrovať svoje myšlienky ako aj orientovať sa v obsahovom pláne výpovede. Precvičovanie rečových intencií kontaktných (napr. pozdravy, oslovenia, pozvanie, oslovenie), informatívnych (napr. získavanie a podávanie informácií, vyjadrenie priestorových a časových vzťahov), regulačných (napr. prosba, poďakovanie, zákaz, pochvala, súhlas, nesúhlas) a hodnotiacich (napr. vyjadrenie vlastného názoru, stanoviska, želania, emócií). Výsledkom budovania praktickej jazykovej kompetencie majú byť vedomosti a zručnosti zodpovedajúce požiadavkám a kritériám dokumentu Spoločný európsky referenčný rámec pre vyučovanie jazykov.

Brief outline of the course:
 Rodina, jej formy a problémy
 Vyjadrovanie pocitov a dojmov
 Dom, bývanie a budúcnosť
 Formy a dialekty v anglickom jazyku
 Život v meste a na vidieku
 Kolokácie a idiomy, zaužívané slovné spojenia
 Prázdniny a sviatky vo svete
 Životné prostredie a ekológia
 Výnimky zo slovosledu
 Frázové slovesá a ich použitie
 Charakteristiky neformálneho diškurzu

Recommended literature:
www.bbclearningenglish.com
McCarthy M., O'Dell F.: English Vocabulary in Use, Upper-Intermediate. CUP, 1994.
Misztal M.: Thematic Vocabulary. SPN, 1998.
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.
Alexander L.G.: Longman English Grammar. Longman, 1988.

Course language:
English language, B2 level according to CEFR

Course assessment
Total number of assessed students: 220

A	B	C	D	E	FX
36.36	21.82	20.45	10.45	7.27	3.64

Provides: Mgr. Zuzana Naďová

Date of last modification: 06.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 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:

Course assessment
Total number of assessed students: 168

abs	n
97.02	2.98

Provides: RNDr. JUDr. Pavol Sokol, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 4

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 156

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

Provides:

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 4

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:

Course assessment
 Total number of assessed students: 68

A	B	C	D	E	FX
61.76	11.76	11.76	4.41	0.0	10.29

Provides: doc. RNDr. Stanislav Krajči, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

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

Course level: II.

Prerequisities:

Conditions for course completion:
 Assessment of preliminary assignments - static images, animations, sounds, videos.
 Assessment of the final multimedia project for the selected topic of computer science.

Learning outcomes:
 To acquire basic principles about multimedia and procedures for the creation and processing of multimedia (still images, animation, audio, video).

Brief outline of the course:
 Principles of creation and processing of computer graphics, audio and video by the help of selected multimedia editors (LogoMotion, Pixlr, Go Animate, Diagramly, InkScape, Audacity, Anvil Studio, Magix Music Maker, CamStudio, Windows Movie Maker, FormatFactory).

Recommended literature:
 1. LACHS, V. Making Multimedia in the Classroom. London : RoutledgeFalemer, 2000. ISBN 0415216842.
 2. GÖBEL, S. et al. Technologies for Interactive Digital Storytelling and Entertainment (LNCS 4326). Darmstadt : Springer, 2006. ISBN 3540499342.
 3. ADÁMEK, R. et al. Moderná didaktická technika v práci učiteľa. Elfa, s.r.o., Košice. 2010. ISBN 978-80-8086-135-3.
 4. CHALUPA, R. Fotografie, hudba a video ve Windows XP. 2005. ISBN 8072269313.

Course language:

Course assessment
 Total number of assessed students: 10

A	B	C	D	E	FX
30.0	30.0	20.0	10.0	10.0	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

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

Course level: II.

Prerequisities:

Conditions for course completion:
 Evaluation of particular assignments.
 100% / 0%
 Project containing programmed multimedia.

Learning outcomes:
 Program design and multimedia applications.
 Understand the basic principles and procedures for multimedia programming.

Brief outline of the course:
 Principles of Programming bitmap graphics, bitmap animation, vector graphics, vector animation, audio and video.

Recommended literature:
 DUNN, J. R. Digitální video. 2003. ISBN 8025100383.
 Audacity: Programování v Conquista. [online] Dostupné na internete: <http:// audacity.sourceforge.net/help/nyquist2>.
 ARMSTRONG, J., DEHAAN, J. Macromedia Flash 8 - výukový průvodce. 2006. ISBN 8025103358.

Course language:

Course assessment
 Total number of assessed students: 5

A	B	C	D	E	FX
20.0	60.0	20.0	0.0	0.0	0.0

Provides: PaedDr. Ján Guniš, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course: 1.

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

Prerequisities:

Conditions for course completion:
 Conditions for course completion:
 Min. 80% of active participation in classes.

Learning outcomes:
 Learning outcomes:
 Increasing physical condition and performance within individual sports. Strengthening the relationship of students to the selected sports activity and its continual improvement.

Brief outline of the course:
 Brief outline of the course:
 Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, basketball, badminton, floorball, yoga, pilates, swimming, body-building, indoor football, self-defence and karate, table tennis, sports for unfit persons, streetball, tennis, and volleyball.
 In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness.
 Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness.
 In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 11672

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.42	0.01	0.0	0.0	0.0	0.03	7.59	3.96

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 credits: 2

Recommended semester/trimester of the course: 2.

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

Prerequisities:

Conditions for course completion:
 Conditions for course completion:
 Final assessment and active participation in classes - min. 75%.

Learning outcomes:
 Learning outcomes:
 Increasing physical condition and performance within individual sports. Strengthening the relationship of students to the selected sports activity and its continual improvement.

Brief outline of the course:
 Brief outline of the course:
 Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, basketball, badminton, floorball, yoga, pilates, swimming, body-building, indoor football, self-defence and karate, table tennis, sports for unfit persons, streetball, tennis, and volleyball.
 In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness.
 In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 10971

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.37	0.57	0.02	0.0	0.0	0.05	10.13	3.86

Provides: Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Ing. Iveta Cimboláková, PhD.
Date of last modification: 18.08.2017
Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course: 3.

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

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 6910

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
89.84	0.04	0.0	0.0	0.0	0.03	4.23	5.86

Provides: Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Ing. Iveta Cimboláková, PhD.

Date of last modification: 18.08.2017

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 2

Recommended semester/trimester of the course: 4.

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

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 5045

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.09	0.3	0.04	0.0	0.0	0.0	6.82	7.75

Provides: Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Ing. Iveta Cimboláková, PhD.

Date of last modification: 18.08.2017

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 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:

Course assessment
 Total number of assessed students: 287

A	B	C	D	E	FX
14.29	10.1	12.89	23.34	30.66	8.71

Provides: prof. RNDr. Gabriel Semanišin, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 5

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

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
 To understand and to know applications of basic paradigms of neural networks. To learn working with software for neural network models.

Brief outline of the course:
 Basic models of computational units - neurons (linear threshold gates, polynomial threshold gates, perceptrons), their computational capability, algorithms of adaptations. Feed-forward neural networks, back propagation algorithm. Hopfield neural networks. ART neural networks. Using neural networks to solving of problems. Genetic and evolution algorithms.

Recommended literature:
 J. Hertz, A.Krogh, R.G. Palmer: Introduction to the theory of neural computation, Addison Wesley, 1991
 HASSOUN, M. H.: Fundamentals of artificial neural networks, The MIT Press, 1995

Course language:

Course assessment
 Total number of assessed students: 407

A	B	C	D	E	FX
11.3	16.22	23.34	20.39	24.08	4.67

Provides: doc. RNDr. Gabriela Andrejková, CSc., RNDr. Ľubomír Antoni, PhD.

Date of last modification: 26.09.2017

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

<div align="center">**COURSE INFORMATION LETTER**</div>

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

Course ID: ÚINF/ VIV1/15	**Course name:** Internet in 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 credits: 4

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
 Assessment of preliminary assignments - design of a teleproject, design of an e-learning course lesson, design and implementation of a video-conference activity.
 In final exam students will demonstrate an overview of using the Internet in education in written form and they will present and defend their final work focused on using the Internet in education (design and implementation of an e-learning course, teleproject, webquest, on-line competition, lesson exploiting several Internet sources and tools).

Learning outcomes:
 1. To acquire an overview of the possibilities of using the Internet in education.
 2. To enhance skills for searching, acquiring, exchanging and presenting information via the Internet.
 3. To design, develop and verify an Internet activity (e-learning course, teleproject, WebQuest, online competition, video lecture).

Brief outline of the course:
 Overview of using the Internet in education. Educational Web sites and search engines. Design, implementation and evaluation of e-learning courses. Educational teleprojects, online competitions, teleexperiments. Communicating via the Internet - forums, blogs, videoconferences, social networking. Social, medical, ethical and legal aspects of using the Internet.

Recommended literature:
 1. CONRAD, Rita-Marie - DONALDSON, J. Ana (2011). Engaging the Online Learner: Activities and Resources for Creative Instruction. Jossey-Bass; Updated Edition edition 2011. ISBN 978-1118018194.
 2. FREEDMAN, Terry (2010) The Amazing Web 2.0 Projects Book.
 http://www.terry-freedman.org.uk/web2_2010/Amazing%20Web%202%20Projects%202%20online%20version.pdf
 3. MANN, B. L. Selected Styles in Web-based Educational Research. Information Science Pub, 2005. ISBN 15-9140-732-X.
 4. BARANOVIČ, R. et al. Internet pre stredné školy - Učebnica Internetu. Praha : Computer Press, 2003. 275 s. ISBN 80-251-0088-X.

Course language:

Course assessment					
Total number of assessed students: 150					
A	B	C	D	E	FX
15.33	33.33	21.33	14.67	12.0	3.33

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

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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

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 credits: 5

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:
 project, exam

Learning outcomes:
 Advanced topics in study of the central nervous system and cognitive processes in human,
 with focus on computational concepts important in the study of cognitive and neural sciences.
 Prerequisite: Intro to Neurosicence

Brief outline of the course:
 Selected topics in cognitive science (following up on Intro to Neuroscience). Overview of the
 methods of theoretical study in cognitive and neural science, including connectionistic, statistical
 and system-theory principles in modeling of cognitive processes and neural circuits. Selected
 models of the human visual and auditory systems, learning, thinking, attention, development and
 plasticity.

Recommended literature:
 HERTZ, J., KROGH, A. and PALMER R. G.: Introduction to the theory of neural computation.
 Addison-Wesley 1991
 KANDEL, E. R., SCHWARTZ, J. H. and JESSELL, T.M.: Principles of Neural Science.
 McGraw-Hill, 2000
 DAYAN, P. and ABBOTT, L. F.: Theoretical Neuroscience – Computa-tional and Mathematical
 Modeling of Neural Systems. MIT Press, 2001

Course language:
 Slovak or English

Course assessment
 Total number of assessed students: 5

A	B	C	D	E	FX
40.0	20.0	40.0	0.0	0.0	0.0

Provides: doc. Ing. Norbert Kopčo, PhD., Ing. Beáta Tomoriová, PhD.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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 credits: 4

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion: Oral examination.

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

Brief outline of the course: Deterministic and nondeterministic algorithms with polynomial time, NP-completeness. Deterministic simulation of a nondeterministic Turing machine. Satisfiability of Boolean formulae. Another NP-complete problems: satisfiability of a formula in a conjunctive normal form, 3-satisfiability, 3-colorability of a graph, 3-colorability of a planar graph, knapsack problem, balancing, ... Space bounded computations, classes L, NL, PSPACE. Deterministic simulation - Savitch theorem. Closure under complement. Complete problems for classes NL, P, and PSPACE.

Recommended literature: J.E. Hopcroft, R.Motwani, J.D. Ullman: Introduction to automata theory, languages, and computation, Addison-Wesley, 2007. M. Sipser: Introduction to the Theory of Computation, Thomson, 2nd edition, 2006. L.A.Hemaspaandra, M.Ogihara: Complexity theory companion, EATCS series, texts in computer science, Springer-Verlag, 2002. S. Arora, B. Barak: Computational Complexity: A Modern Approach, Cambridge Univ. Pess, 2009. G.Brassard, P.Bradley: Fundamentals of algorithmics, Prentice Hall, 1996. D.P.Bovet, P.Crescenzi: Introduction to the theory of complexity, Prentice Hall, 1994. 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:

Course assessment Total number of assessed students: 309

A	B	C	D	E	FX
57.28	15.53	11.65	7.44	7.77	0.32

Provides: prof. RNDr. Viliam Geffert, DrSc.

Date of last modification: 25.02.2018

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.

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: Per study period: 36s
 Course method: present

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:
 Conditions for course completion:
 Attendance

Learning outcomes:
 Learning outcomes:
 Students will be provided an overview of possibilities how to spend leisure time in seaside conditions actively and their skills in work and communication with clients will be improved. Students will acquire practical experience in organising the cultural and art-oriented events, with the aim to improve the stay and to create positive experiences for visitors.

Brief outline of the course:
 Brief outline of the course:
 1. Basics of seaside aerobics
 2. Morning exercises
 3. Pilates and its application in seaside conditions
 4. Exercises for the spine
 5. Yoga basics
 6. Sport as a part of leisure time
 7. Application of projects of productive spending of leisure time for different age and social groups (children, young people, elderly)
 8. Application of seaside cultural and art-oriented activities in leisure time

Recommended literature:

Course language:

Course assessment
 Total number of assessed students: 33

abs	n
12.12	87.88

Provides: Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.

Date of last modification: 18.08.2017

Approved: Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. PhDr. Oľga Orosová, CSc.