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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					
Prerequisites:					
Conditions for course completion: Combined method of teaching (classroom/distance) Active classroom participation, assignments handed in on time, 2 absences tolerated 1 test (10th week), no retake. (in classroom, in case of distance learning due to worsened epidemiological situation – online) Presentation on chosen topic (in case of distance learning - online thorough MS Teams) 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:					
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.					
Notes:					
Course assessment Total number of assessed students: 379					
A	B	C	D	E	FX
33.77	22.16	15.3	10.03	6.6	12.14
Provides: Mgr. Viktória Mária Slovenská					
Date of last modification: 17.09.2020					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/SOP1/15		Course name: Administration and security of computer networks			
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: 6.					
Course level: I.					
Prerequisites: ÚINF/SKB1/15					
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: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science			
Course ID: ÚINF/ ADL1/15		Course name: Administration of GNU/Linux	
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: 6.			
Course level: I.			
Prerequisites: ÚINF/AOS1/15 and leboÚINF/ZOS1/19			
Conditions for course completion:			
Learning outcomes:			
Brief outline of the course:			
Recommended literature:			
Course language:			
Notes:			
Course assessment Total number of assessed students: 0			
abs	n	neabs	z
0.0	0.0	0.0	0.0
Provides: RNDr. PhDr. Peter Pisarčík			
Date of last modification: 03.05.2015			
Approved: prof. RNDr. Gabriel Semanišin, 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: 5.	
Course level: I., II.	
Prerequisites:	
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: Slovak or english	
Notes:	

Course assessment					
Total number of assessed students: 28					
A	B	C	D	E	FX
57.14	21.43	14.29	0.0	7.14	0.0
Provides: RNDr. JUDr. Pavol Sokol, PhD., RNDr. Tomáš Bajtoš					
Date of last modification: 10.02.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ ADW1/15	Course name: Administration of Windows
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: 5.	
Course level: I.	
Prerequisites: (ÚINF/OSY1/15,ÚINF/AOS1/15) and leboÚINF/ZOS1/19	
Conditions for course completion: Practics activity, home assignment, test. Final test.	
Learning outcomes: Deep insight into system concepts and components of operating system Windows along with the practical techniques concerning with configuration and management corresponding to the professional administrator level. Completing the course allows to become oriented and experienced in the Active Directory administration, net services configuration and management and in the virtualization concepts.	
Brief outline of the course: Active Directory infrastructure and its management and configuration. Zone configuration, DNS setup, replication. Trust configuration. Roles and services. Account management, group policy, auditing. Certification authority and management. Network configuration and network services. DHCP, routing, firewall, remote access configuration. Monitoring and security breach handling. Licences for multiple remote access. Website configuration and management. FTP and mail server configuration. Data Storage configuration, filesystems and backup, network services. Installing and configuring devices, monitoring system health and settings. System log. Creating system images and image recovery. Installing and activating distribution. Virtualization support, installing and configuring virtual machines. Configuring access to network, memory and disk resources. Clustering.	
Recommended literature: 1. J. C. Mackin, T. Northrup: MCTS self-paced training kit (exam 70-642) : configuring Windows server 2008 network infrastructure, Microsoft Press, 2008, ISBN 0-7356-2512-3. 2. S. Reimer, M. Mulcare, C. Kezema, B. Wright: Windows server 2008 Active Directory resource kit, Microsoft Press, 2008, ISBN 0-7356-2515-8. 3. D. Holme: Windows administration resource kit: productivity solutions for IT professionals, Microsoft Press, 2008, ISBN 0-7356-2431-3.	
Course language:	
Notes:	

Course assessment			
Total number of assessed students: 0			
abs	n	neabs	z
0.0	0.0	0.0	0.0
Provides: PaedDr. Ján Guniš, PhD.			
Date of last modification: 03.05.2015			
Approved: prof. RNDr. Gabriel Semanišin, PhD.			

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PPPy/18	Course name: Advanced programming in Python
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., 6.	
Course level: I.	
Prerequisites: ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15 and leboÚINF/PRG1/15	
Conditions for course completion: Continuous assignment - 50% Midterm test and final test - 50% or The final project - 100%	
Learning outcomes: Problem solving in Python with using various modules, to implement and use algorithms to solve selected problems, knowledge of the principles of object-oriented programming and its implementation in Python.	
Brief outline of the course: Introduction to the environment, basic features of Python, syntax. Simple types (number, logical type), structured types (string, list, dictionary, tuple, set) and control structures (loops, conditional statements, exception handling). Definition of functions (parameters, return value, variable number of parameters, default values of parameters). Generators. Import and creation of modules. Documentation of functions, modules, packages. Types of errors and error handling. Capturing and raising exceptions. Saving data to a file and reading data from a file. Data serialization. Open data formats. Definition of own classes. Decorators. Modules, packages. Tests and test-driven programming (unittest). Logging. Parallelism, threads and processes. Graphic interface for Python programs. Problem solving using Python. Classes and objects. Iterator, context manager. Object-oriented approach to problem solving. Custom data structures. Selected algorithms over data structures.	
Recommended literature:	

Pilgrim, M., (2012) Dive Into Python 3. PILGRIM, Mark. <https://github.com/downloads/diveintomark/diveintopython3/dive-into-python3.pdf>
 SHIPMAN, John W. Tkinter 8.5 reference: a GUI for Python. Socorro, NM 87801: New Mexico Tech Computer Center, 2013. Dostupné také z: <https://anzeljg.github.io/rin2/book2/2405/docs/tkinter/tkinter.pdf>
 LOTT, Steven F. Mastering Object-oriented Python. Birmingham B3 2PB, UK: Packt Publishing, 2014. ISBN 978-1-78328-097-1.

Course language:
 The primary language is Slovak, English is useful for reading Python documentation

Notes:
 Required knowledge: Ability to implement simple programs in a selected programming language (eg Java, Pascal, C ...), basic knowledge of the principles of object-oriented programming.

Course assessment
 Total number of assessed students: 23

A	B	C	D	E	FX
13.04	21.74	34.78	17.39	0.0	13.04

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

Date of last modification: 11.02.2021

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ ASU1/15	Course name: Algorithms and data structures
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: 6.	
Course level: I.	
Prerequisites: (ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15),(ÚINF/PAZ1b/15 and leboÚINF/ePAZ1b/15)	
Conditions for course completion: Practice activities, homeworks and midterm exam. Final examination consisting of practice and theoretical test.	
Learning outcomes: Understand and learn algorithmic paradigms and data structures. Analyse time complexity of these algorithms.	
Brief outline of the course: Algorithms' time and space asymptotic complexity. Main Theorem. Amortized complexity. Brute Force. Backtrack. Divide and Conquer. Dynamic programming. Comparison and non-comparison sort algorithms. Sweep line algorithms. Graph Theory Algorithms. Data structures – queue, stack, priority queue, heap, prefix sum, binary search trees, interval trees, union & find, trie.	
Recommended literature: 1, Laaksonen A.: Guide to Competitive Programming: Learning and Improving Algorithms Through Contests (Undergraduate Topics in Computer Science), Springer, 2017, ISBN 978-3319725468 2, Forišek M., Steinová M.: Explaining Algorithms Using Metaphors. Springer Briefs in Computer Science, Springer (2013), ISBN 978-1-4471-5018-3 3, R. Sedgewick, K. Wayne: Algorithms (4th Edition), Addison-Wesley Professional, 2011, ISBN 978-0321573513, http://algs4.cs.princeton.edu/home/ 4, Open Data Structures: http://opendatastructures.org/	
Course language: Slovak or english	
Notes: Content prerequisites: - programming skills in some programming language (Python/Java/C++/...) - mathematics: -- computing with polynomials, logarithmic and exponential functions	

-- computing limits of sequences, L'Hospital rule					
Course assessment					
Total number of assessed students: 134					
A	B	C	D	E	FX
11.94	5.97	17.16	23.13	38.81	2.99
Provides: prof. RNDr. Gabriel Semanišin, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 25.02.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ AFJ1a/15		Course name: Automata and formal languages			
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: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion: 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: Chomsky hierarchy of grammars and languages. Finite-state transducers and mapping, construction of a reduced automaton. Finite-state acceptors, nondeterministic acceptors, regular expressions. Closure properties of regular languages. Context-free grammars, Chomsky and Greibach normal forms. Pushdown automata, Pumping lemma. Closure properties of context-free languages.					
Recommended literature: J.E. Hopcroft, R.Motwani, J.D. Ullman: Introduction to automata theory, languages, and computation, Addison-Wesley, 2001. J. Shallit: A second course in formal languages and automata theory, Cambridge University press, 2009. M. Sipser: Introduction to the theory of computation, Thomson Course Technology, 2006.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 832					
A	B	C	D	E	FX
25.36	18.03	23.92	17.91	9.86	4.93
Provides: Mgr. Alexander Szabari, PhD., prof. RNDr. Viliam Geffert, DrSc., RNDr. Zuzana Bednárová, PhD.					
Date of last modification: 24.08.2018					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ BPO/14		Course name: Bachelor Thesis and its Defence			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of ECTS credits: 4					
Recommended semester/trimester of the course:					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 95					
A	B	C	D	E	FX
44.21	27.37	13.68	8.42	6.32	0.0
Provides:					
Date of last modification: 09.01.2019					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ KMU1/15		Course name: Coding and multimedial data transition			
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: 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 18					
A	B	C	D	E	FX
33.33	5.56	22.22	22.22	16.67	0.0
Provides: doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, 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	
Prerequisites:	
Conditions for course completion: Active participation in class and completed homework assignments. Students are allowed to miss two classes at the most. Online teaching (MS Teams), in case of an improved epidemiological situation = on-site teaching. 2 credit tests (presumably in weeks 6/7 and 12/13) and a short oral presentation in English. The tests will be taken online (MS Teams) during online teaching and in class in case of on-site classes. The presentation will be sent to the course instructor as a video recording. Final evaluation consists of the scores obtained for the 2 tests (70%) and the presentation (30%). 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, schopnosť prijímať 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	

<p>Životné prostredie a ekológia Výnimky zo slovosledu Frázové slovesá a ich použitie Charakteristiky neformálneho diškurzu</p>					
<p>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.</p>					
<p>Course language: English language, B2 level according to CEFR</p>					
<p>Notes:</p>					
<p>Course assessment Total number of assessed students: 241</p>					
A	B	C	D	E	FX
38.59	22.41	19.5	9.54	6.64	3.32
<p>Provides: Mgr. Barbara Mitriková</p>					
<p>Date of last modification: 11.02.2021</p>					
<p>Approved: prof. RNDr. Gabriel Semanišin, PhD.</p>					

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					
Prerequisites:					
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: Vince M.: Macmillan Grammar in Context, Macmillan, 2008 McCarthy, O'Dell: English Vocabulary in Use, CUP, 1994 C. Oxengen, C. Latham-Koenig: New English File Advanced, Oxford 2010 Misztal M.: Thematic Vocabulary, Fragment, 1998 www.bbclearningenglish.com ted.com/talks					
Course language:					
Notes:					
Course assessment Total number of assessed students: 406					
A	B	C	D	E	FX
39.66	18.97	16.75	8.62	5.91	10.1
Provides: Mgr. Lenka Klimčáková					
Date of last modification: 14.09.2019					
Approved: prof. RNDr. Gabriel Semanišin, 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.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 54					
A	B	C	D	E	FX
59.26	11.11	9.26	3.7	9.26	7.41
Provides: Mgr. Blanka Jenčíková					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚFV/ POF1a/99		Course name: Computational Physics I					
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: 4.							
Course level: I.							
Prerequisites: ÚFV/NUM/10							
Conditions for course completion: Continuous evaluation is based on students' activity in the classroom and work on assignments. Examination and assignments submitted electronically with the attached computer code.							
Learning outcomes: To teach students to use computer as a tool of modeling of physical reality.							
Brief outline of the course: Introduction to dynamical systems. Numerical solution of ordinary differential equations (ODE) with initial value. Boundary value problems for ODE. Discrete schemes for partial differential equations (PDE). Numerical solution of PDE. Finite difference methods, consistency, convergence, stability. Elliptic and parabolic PDE. Introduction to Monte Carlo (MC) method and applications in statistical physics.							
Recommended literature: 1. C. Pozrikidis: Num. Comp. in Science and Engineering, Oxford Univ. Press, 1998. 2. A.L. Garcia: Numerical Methods for Physics, Prentice-Hall, 1994. 3. D. P. Landau, K. Binder: A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge Univ. Press, 2000. 4. B. A. Berg: Introduction to Markov Chain Monte Carlo Simulations and Their Statistical Analysis, http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf 5. W. Janke: Lectures on Ising model, http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html							
Course language:							
Notes:							
Course assessment Total number of assessed students: 111							
A	B	C	D	E	FX	N	P
33.33	17.12	9.91	17.12	14.41	2.7	0.0	5.41
Provides: prof. RNDr. Milan Žukovič, PhD.							

Date of last modification: 19.02.2021

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ POF1b/99		Course name: Computational Physics II			
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: 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: Continuous evaluation is based on students' activity in the classroom and work on assignments. Examination and assignments submitted electronically with the attached computer code.					
Learning outcomes: To teach students to create simulation projects to help to solve physical problems.					
Brief outline of the course: Advanced methods of Monte Carlo (MC) simulations of lattice spin systems. Local and cluster perturbation algorithms. Errors and histogram analysis of MC data. Reweighting by simple and histogram methods. Universality and finite-size scaling. Determination of order of phase transitions and calculation of critical exponents. Basics of quantum MC simulations. MC simulations of stochastic processes. Diffusion equation. Stochastic processes in financial analysis. Basics of molecular dynamics method.					
Recommended literature: 1. D.P. Landau, K. Binder: A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge University Press, 2000. 2. B.A. Berg: Introduction to Markov Chain Monte Carlo Simulations and Their Statistical Analysis, http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf 3. W. Janke: Lectures on Ising model, http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html					
Course language:					
Notes:					
Course assessment Total number of assessed students: 53					
A	B	C	D	E	FX
52.83	16.98	16.98	9.43	1.89	1.89
Provides: prof. RNDr. Milan Žukovič, PhD.					
Date of last modification: 25.09.2017					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ PTS/15		Course name: Computer and telecommunication networks			
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: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 6					
A	B	C	D	E	FX
16.67	0.0	0.0	33.33	33.33	16.67
Provides: doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ ARP1/15	Course name: Computer architecture
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: 4.	
Course level: I., II.	
Prerequisites:	
Conditions for course completion: Homeworks, active participation in laboratory exercises, final written exam. Final oral examination.	
Learning outcomes: Obtain detailed information about the technical implementation of modern computer systems. Understand the principles of organization of work of processor and computer on concrete examples. Gain basic experience with programming at the level of machine instructions (Assembler language). Understand the current way a computer communicates with I / O devices. Students will get acquainted with the components of current computers, with their properties, connection, principle of operation and possibilities of use. They will be able to make informed decisions about the purchase of computer equipment, identify computer failures; make simpler repairs by replacing modules, including setting them correctly.	
Brief outline of the course: Milestones in computer organization, fundamental limitations. The representation of numbers and the implementation of floating point arithmetic. Combinatorial and sequential circuits, memory organization, RAMs and ROMs. Digital logic level architecture, data path timing, machine cycle. The microarchitecture level, microinstructions and microinstruction control. The instruction set architecture level, data types, addressing modes, instruction types. Instruction execution, pipelining, cache memory. I/O controllers, ports, interrupts, direct memory access. Multicore architectures, processor virtualization. Device drivers, operating system kernel, device-independent software. Laboratory practices and tutorials.	
Recommended literature: 1. W. Stallings: Computer Organization and Architecture, Pearson, 2018 2. J. Ledin: Modern Computer Architecture and Organization, Packt Publishing, 2020 3. E. Upton, J. Duntemann, R. Roberts, T. Mamtora, B. Everard: Learning Computer Architecture with Raspberry Pi, Wiley, 2016	
Course language: Slovak or English	
Notes:	

Content prerequisites: understanding of fundamental concepts of computer architecture and design within the scope of a standard undergraduate course.
The course is not organized annually.

Course assessment

Total number of assessed students: 58

A	B	C	D	E	FX
17.24	18.97	17.24	20.69	18.97	6.9

Provides: doc. RNDr. Jozef Jirásek, PhD.

Date of last modification: 26.02.2021

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PSIN/15	Course name: Computer network Internet
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: 2.	
Course level: I.	
Prerequisites: ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15 and leboÚINF/PRG1/15	
Conditions for course completion: Activity at excercises (max 18 points), home work (max 18 points), test (max 30 points). Verbal exam (min 25 points, max 50 points). Required minimum for passing the course is 64 points.	
Learning outcomes: To understand ISO OSI reference model for network communication, to analyze communication channels parameters, to understand different access methods, to be familiar with the function of center network devices (hub, switch, router), to understand IP protocol, IP addresses and the transfer of internet packets, to understand reliable data transfer of the TCP protocol, to be able to use Sockets in won application, to know basic application protocols.	
Brief outline of the course: 1. Introduction to computer networks, internet connection types, delay and loss in packet-switched networks, ISO OSI reference model and TCP/IP protocols family. 2. Application layer: Web and HTTP, protocol FTP ,e-mail and SMTP, POP3, IMAP, 3. Application layer: domain names and DNS, Peer-to-peer applications. Security in computer networks. 4. Transport layer: services, multiplexing and demultiplexing, protocol UDP, reliable data transfer 5. Transport layer: connection oriented transport protocol TCP, flow and congestion control. 6. Network Layer: Internet protocol IPv4, virtual circuit and datagram networks, packet fragmentation, routing table, application protocol DHCP 7. Network Layer: network address translation NAT, ICMP protocol, internet protocol IPv6 8. Network Layer: routing algorithms and protocols, broadcast and multicast routing 9. Link layer: error detection, multiple access methods CSMA/CD and CSMA/CA, Ethernet, frames, protocols ARP and RARP, link layer addressing 10. Link Layer and wireless and mobile networks: hub, switch, virtual LAN, 802.11 Wireless LAN, Bluetooth 802.15, WiMAX 802.16, Mobile IP, mobility in GSM 11. Physical Layer: Communication channels parameters, digital and analog encoding.	
Recommended literature: 1. J. F. Kurose, Keith W. Ross: Computer Networking: A Top-Down Approach, 7. edition, 2016 2. A. S. Tanenbaum: Computer Networks, 5. edition, Pearson, 2010 3. W. Stallings: Local and Metropolitan Area Networks, Prentice Hall, 2000	

4. E. Comer, R.E. Droms: Computer Networks and Internets, Prentice Hall, 2003					
5. W. R. Stevens: TCP/IP Illustrated, Vol.1: The Protocols, Addison-Wesley, 1994					
Course language:					
Notes:					
Course assessment					
Total number of assessed students: 759					
A	B	C	D	E	FX
9.62	5.27	12.38	16.47	37.29	18.97
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Peter Gurský, PhD.					
Date of last modification: 06.02.2019					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ KOPR/15	Course name: Concurrent programming
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: 5.	
Course level: I.	
Prerequisites: ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15	
Conditions for course completion: Final projects in area of parallel and distributed programming	
Learning outcomes: Ability to create thread safe programs, cooperation and synchronization of threads, design pattern "Work stealing", interruption of threads. Technologies SOAP and Akka.	
Brief outline of the course: 1, Introduction to threads 2, Stale data and data publication 3, Composing thread safe classes 4, Concurrent collections 5, Thread coordination 6, Executors 7, ForkJoinPool - work stealing pattern 8, Tasks cancellation 9, Threads in JavaFx 10, SOAP Web Services - From code to WSDL 11, SOAP Web Services - From WSDL to code 12, Actor model and Akka	
Recommended literature: 1. B. Goetz, Tim Peierls, Joshua Bloch, Joseph Bowbeer, David Holmes, Doug Lea: Java Concurrency in Practice; Addison-Wesley Professional, 2006 2. P. Hyde: Java Thread Programming; Sams, 1999 3. T. White: Hadoop: The Definitive Guide; Yahoo Press; Second Edition edition, 2010	
Course language:	
Notes:	

Course assessment					
Total number of assessed students: 78					
A	B	C	D	E	FX
44.87	25.64	15.38	10.26	3.85	0.0
Provides: RNDr. Peter Gurský, PhD.					
Date of last modification: 05.02.2019					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ KRP1/15	Course name: Cryptographic protocols
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., 5.	
Course level: I., II.	
Prerequisites:	
Conditions for course completion: Homeworks, active participation in laboratory exercises, presentation of a selected topic at a course seminar. Final written exam.	
Learning outcomes: Understand the problems of designing secure cryptographic protocols for authentication and key management. Know the ways to compromise them and be able to apply methods of proving their correctness. Control some automated verification tools. Understand and be able to apply advanced cryptographic techniques in various application fields - signature schemes, electronic banking, electronic voting. Orientation in current problems of implementation of cryptographic protocols.	
Brief outline of the course: Authentication and key establishment using shared and public key cryptography, key agreement protocols, conference key agreement, zero-knowledge protocols, provable security. Protocol architecture and formal definition, goals for authentication and key establishment, formal verification. Digital signature, implementation, trust distribution. The final seminar with presentations on selected current topics - electronic banking, electronic voting, secure communication ...	
Recommended literature: 1. Colin Boyd, Anish Mathuria: Protocols for Authentication and Key Establishment, Springer, 2020 2. Douglas R. Stinson, Maura B. Paterson: Cryptography: Theory and Practice, Fourth Edition, Chapman & Hall/CRC, 2018 3. Paul C. van Oorschot: Computer Security and the Internet: Tools and Jewels, Springer, 2020 4. Peter Ryan, Steve Schneider: Modeling and Analysis of Security Protocols, Addison-Wesley, 2001	
Course language: Slovak or English	
Notes:	

Content prerequisites: understanding of fundamental cryptographic concepts and primitives (as taught in the course KRS/15 or in the scope of the textbook "Understanding Cryptography" by Christof Paar and Jan Pelzl).
The course is not organized annually.

Course assessment

Total number of assessed students: 21

A	B	C	D	E	FX
38.1	4.76	19.05	19.05	14.29	4.76

Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.

Date of last modification: 22.02.2021

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ KRS/15	Course name: Cryptographic systems and their applications
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: 3., 5.	
Course level: I., II.	
Prerequisites:	
Conditions for course completion: Homeworks, midterm written exam, active participation in laboratory exercises. Final written exam, possibly oral exam.	
Learning outcomes: This course covers the basic knowledge in understanding and using cryptography. The main focus is on definitions, theoretical foundations, and rigorous proofs of security, with some programming practice. Topics include symmetric and public key encryption, message integrity, hash functions, block cipher design and analysis, number theory, and digital signatures. The course also provides an introduction to cryptographic protocols for authentication and key management, including PKI and certificates.	
Brief outline of the course: Classical cryptography, basic information theory, cryptanalysis, security of classical ciphers. Symmetric ciphers - stream ciphers, block ciphers (DES, AES), modes of operation. Asymmetric ciphers - RSA, Elgamal, elliptic curve cryptosystems. Hash functions, message authentication codes, digital signatures. Authentication, key establishment and distribution, certificates.	
Recommended literature: 1. PAAR, Ch., PELZL, J.: Understanding Cryptography, Springer 2010. 2. STINSON, D. R., PATERSON, M. B.: Cryptography: Theory and Practice. CRC Press, 2018. 3. MAO, W. Modern Cryptography: Theory and Practice. Prentice Hall, 2003. 4. MENEZES, A., OORSCHOT, P. van, VANSTONE, S.: Handbook of Applied Cryptography. CRC Press, 1996. 5. SCHNEIER, B.: Applied Cryptography, 20th Edition, John Wiley & Sons Inc., 2015	
Course language: Slovak or English	
Notes: Content prerequisites: basic number theory and algebra, basic programming	

Course assessment					
Total number of assessed students: 112					
A	B	C	D	E	FX
12.5	9.82	13.39	13.39	33.04	17.86
Provides: RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 22.02.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ DBS1a/15		Course name: Database systems			
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: I., II.					
Prerequisites:					
Conditions for course completion: Tests, assignments.					
Learning outcomes: Acquired basic concepts and techniques of relational database theory and a corresponding software.					
Brief outline of the course: Relational DB, SQL, Filtration, Grouping and Aggregation, Join, Three-Value Logic. Data and database models, database design, integrity, ER diagrams. DWH data warehouses, data cubes, pivot. Data science. Normalization 1.					
Recommended literature: - J. ULLMAN: Principles of database and knowledge – base systems, Comp. Sci. Press., 1988 - R. Ramakrishnan, J. Gehrke, Database Management Systems, McGraw-Hill, 2003 - HENDERSON, K.: The Guru's Guide to Transact SQL, Addison Wesley Professional, 2000					
Course language:					
Notes:					
Course assessment Total number of assessed students: 857					
A	B	C	D	E	FX
10.62	9.22	17.97	22.75	32.56	6.88
Provides: doc. RNDr. Csaba Török, CSc.					
Date of last modification: 26.02.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ DBS1b/15		Course name: Database systems			
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: 6					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites: ÚINF/DBS1a/15 and leboÚINF/DBdi/15					
Conditions for course completion: Tests, assignments.					
Learning outcomes: Advanced techniques of relational databases and theoretical fundamentals of DB normalization and relational algebra. NoSQL					
Brief outline of the course: Stored procedures, functions. Triggers. Views. CTE, recursion and transitive closure. Set operations. Window functions. Transactions. Cursors. B-trees and indexes. XML, JSON. Relational algebra. Functional Dependencies and Essential Tuple NF. Big Data and NoSQL, MongoDB, CRUD and Cursors, Aggregations and Indexes, Replication and Sharding.					
Recommended literature: - K. Chodorow, MongoDB: The Definitive Guide, O'Reilly, second edition, 2013 - Date C.J., Database Design and Relational Theory, O'Reilly, 2012 - Itzik Ben-Gan, Microsoft SQL Server, 2012 T-SQL Fundamentals, O'Reilly, 2012 - L. Davidson, J.M. Moss, Pro SQL Server 2012 Relational database Design and Implementation, APRESS, 2012					
Course language:					
Notes: If necessary, teaching, mid-term and final evaluation will be by distance form.					
Course assessment Total number of assessed students: 710					
A	B	C	D	E	FX
10.0	8.45	12.25	24.08	34.93	10.28
Provides: doc. RNDr. Csaba Török, CSc.					
Date of last modification: 30.03.2020					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ VMA1/15		Course name: Development of mobile applications			
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: 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 73					
A	B	C	D	E	FX
57.53	4.11	12.33	5.48	1.37	19.18
Provides: RNDr. Róbert Novotný, PhD., RNDr. Miroslav Opiela, PhD.					
Date of last modification: 02.07.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ DSM3a/10		Course name: Discrete mathematics for informaticians			
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: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Based on results of two semestral tests. Based on semestral evaluation and the result of examination.					
Learning outcomes: To present the basics of combinatorics and their applications in computer science.					
Brief outline of the course: Mathematical induction and Dirichlet principle. The sum and the product rule. Permutations, k-permutations, combinations. Selections with repetitions. The inclusion/exclusion principle. Recurrent equations. Introduction to graph theory. Trees. Eulerian and Hamiltonian graphs. Planar graphs. Graph colourings.					
Recommended literature: 1. S. Jendroľ, P. Mihók: Diskrétna matematika I., UPJŠ Košice 1992 2. J. Nešetřil, J. Matoušek: Kapitoly z diskrétni matematiky 3. E. R. Scheinerman: Mathematics - a discrete introduction, Brooks/Cole Publ. Comp. Pacific Grove 2000. 4. R.P. Grimaldi: Discrete and Computational Mathematics, Addison-Wesley Publ. Co.-Rending 1994.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 274					
A	B	C	D	E	FX
5.47	2.92	9.49	16.79	52.55	12.77
Provides: prof. RNDr. Tomáš Madaras, PhD., RNDr. Mária Maceková, PhD.					
Date of last modification: 22.09.2019					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: CJP/ PFAJ4/07	Course name: English Language of Natural Science
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.	
Prerequisites:	
Conditions for course completion: Distant form of study (Online through MS teams) - based on the syllabus Active participation in class and completed homework assignments. Students are allowed to miss 2 classes at the most (in case of online form - not attending online class/ assignments not handed in) Continuous assessment: 2 credit tests taken thorough MS Teams online (presumably in weeks 6 and 13) and academic presentation in English given through MS Teams online. In order to be admitted to the final exam, a student has to score at least 65 % as a sum of both credit tests. The exam test results represent 50% of the final grade for the course, continuous assessment results represent the other 50% of the final grade. The final grade for the course 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: Enhancement of students' language skills (speaking, writing, reading and listening comprehension) in English for specific purposes and development of students' language competence (familiarization with selected phonological, lexical and syntactic phenomena), improvement of students' pragmatic competence (familiarization with selected language functions) and improvement of presentation skills at B2 level (CEFR) with focus on terminology of English for natural science.	
Brief outline of the course: 1. Introduction to studying language 2. Selected aspects of scientific language 3. Talking about academic study 4. Discussing science 5. Defining scientific terminology and concepts 6. Expressing cause and effect 7. Describing structures 8. Explaining processes 9. Comparing objects, structures and concepts 10. Talking about problem and solution 11. Referencing authors	

12. Giving examples
13. Visual aids and numbers
14. Referencing time and place
Presentation topics related to students' study fields.

Recommended literature:

study materials provided by the course instructor

Redman, S.: English Vocabulary in Use, Pre-intermediate, Intermediate. Cambridge University Press, 2003.

Armer, T.: Cambridge English for Scientists. CUP, 2011.

Wharton J.: Academic Encounters. The Natural World. CUP, 2009.

Murphy, R.: English Grammar in Use. Cambridge University Press, 1994.

P. Fitzgerald : English for ICT studies. Garnet Publishing, 2011.

<https://worldservice/learningenglish>, <https://spectator.sme.sk>

www.isllibrary.com

Course language:

Notes:

Course assessment

Total number of assessed students: 2605

A	B	C	D	E	FX
37.16	25.03	17.04	10.21	8.29	2.26

Provides: Mgr. Lenka Klimčáková, Mgr. Barbara Mitříková, Mgr. Viktória Mária Slovenská, PhDr. Helena Petruňová, CSc.

Date of last modification: 14.02.2021

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ ABSP/16		Course name: Essentials of ABAP			
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: 3					
Recommended semester/trimester of the course: 3., 5.					
Course level: I., N					
Prerequisites: ÚINF/ZTSP/16					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course: Principles of programming in ABAP, declaration of variables, the basic syntax of the language ABAP Open SQL, ABAP Workbench navigation, ABAP editor, arithmetic, logic conditions, string operations, cycles, test programs using a debugger, an overview of the most important commands of ABAP, definition elementary and structured data objects, functional groups and function modules.					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 55					
A	B	C	D	E	FX
30.91	43.64	20.0	1.82	0.0	3.64
Provides:					
Date of last modification: 24.08.2016					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice		
Faculty: Faculty of Science		
Course ID: ÚINF/ ZSSP/16	Course name: Essentials of the SAP System for Users	
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: 3		
Recommended semester/trimester of the course: 3., 5.		
Course level: I., N		
Prerequisites: ÚINF/ZTSP/16		
Conditions for course completion:		
Learning outcomes:		
Brief outline of the course: Characteristics of modern systems, effective solutions for the management and operation of institutions, fundamental processes in the institution of government, support for the process from the system. SAP user roles and profiles, case studies in terms of deployment of SAP company.		
Recommended literature:		
Course language:		
Notes:		
Course assessment Total number of assessed students: 77		
abs	n	neabs
94.81	2.6	2.6
Provides: Ing. Slávka Šimková, PhD., RNDr. Slavka Blichová		
Date of last modification: 24.08.2016		
Approved: prof. RNDr. Gabriel Semanišin, PhD.		

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice		
Faculty: Faculty of Science		
Course ID: ÚINF/ ZTSP/16	Course name: Essentials of the SAP Technology	
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 0 / 2 Per study period: 0 / 28 Course method: present		
Number of ECTS credits: 2		
Recommended semester/trimester of the course: 3., 5.		
Course level: I., N		
Prerequisites:		
Conditions for course completion:		
Learning outcomes:		
Brief outline of the course: Defining mySAP Technology (Products, Innovations provided by SAP), Navigation (Logon, Screen Design, Calling Functions), System Kernel (Client/Server Architecture, Structure of an SAP system, Processing in SAP), Communication and Integration Technologies (Remote Function Calls, Internet Technologies).		
Recommended literature:		
Course language:		
Notes:		
Course assessment Total number of assessed students: 339		
abs	n	neabs
96.76	1.18	2.06
Provides: Ing. Slávka Šimková, PhD., RNDr. Slavka Blichová		
Date of last modification: 24.08.2016		
Approved: prof. RNDr. Gabriel Semanišin, PhD.		

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ FAN/15		Course name: Forensic 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: 6.					
Course level: I., II.					
Prerequisites: ÚINF/BPD1/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 19					
A	B	C	D	E	FX
26.32	36.84	21.05	10.53	5.26	0.0
Provides: RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ FUN1/15		Course name: Functional 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: 4					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites: ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15					
Conditions for course completion:					
Learning outcomes: To learn bases of declarative programming (as complementary method to procedural programming) and basic methods of implementations of functional programming languages.					
Brief outline of the course: Principles of functional programming. Lambda calculus from the functional programming languages point of view. Properties of functional programming languages. Programming language Haskell: the structure of the language and basic computational rule, basic data types, lists, recursion and induction, trees					
Recommended literature: BIRD, R., WADLER, P.: Introduction to Functional Programming. Prentice Hall International, 1988. LIPOVAČA, M.: Learn You Haskell for Great Good!. Free from http://learnyouahaskell.com/					
Course language:					
Notes:					
Course assessment Total number of assessed students: 249					
A	B	C	D	E	FX
21.29	15.26	15.66	14.46	32.53	0.8
Provides: prof. RNDr. Stanislav Krajčí, PhD., RNDr. Ondrej Krídlo, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ GRP/13		Course name: GRID computing			
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: 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 6					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides: RNDr. Martin Vařa, PhD.					
Date of last modification: 30.03.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚGE/ GIS/15		Course name: Geographic Information Systems			
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: 6					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: The assessment is a combination of continual control during the practicals and the final exam in the examination period. The continual assessment is performed during the semester and it involves 1 written test in the mid-term of the semester and a project report generated according to the assignment and practical skills acquired during the practicals. The student can go for the final exam in case he or she acquired at least the E mark in the continual assessment. The final assessment mark is the result of the average of the marks received in the mid-term test, project report and final exam. The final exam is a written test. The credits are given in case the student had reached at least the E mark in continual assessment and final exam. The following marking scheme is applied in the assessment: A (100-90 points), B (80-89 points), C (70-79 points), D (60-69 points), E (50-59 points), FX (0-49 points).					
Learning outcomes: The student will understand the basics of the theory of geoinformation science, GIS, and Remote Sensing. The student will be able perform tasks in a GIS software, generate thematic maps and conduct basic spatial analyses such as spatial queries, attribute queries, terrain modelling, editing custom geodata, importing geodata.					
Brief outline of the course:					
Recommended literature:					
Course language: Slovak or Czech or English					
Notes:					
Course assessment Total number of assessed students: 344					
A	B	C	D	E	FX
29.65	25.0	25.58	13.37	6.4	0.0
Provides: doc. Mgr. Michal Gallyay, PhD., Mgr. Michaela Nováková					
Date of last modification: 16.09.2017					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ ANO/15		Course name: Image 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: 3., 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 25					
A	B	C	D	E	FX
12.0	20.0	24.0	8.0	36.0	0.0
Provides: doc. Ing. Zoltán Tomori, CSc., doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ MIN1/15		Course name: Informatics for medicine			
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., 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: Oral and written exam					
Learning outcomes: To present an application of computer science in medicine domain with emphasis on the specific conditions for so-called safety-relevant domain.					
Brief outline of the course: Software development go medicine domain (radiotherapy and ultrasound). Syngo platform, MS .NET, C#, C++. Development based on so-called "V" development model. An overview of used software tools: RationalRose, RequisitePro, UITA, Caliber, ClearCase. Quality and process management and SW company mangement according to CMMI methodology.					
Recommended literature: http://www.syngo.com http://www.siemens.com					
Course language:					
Notes:					
Course assessment Total number of assessed students: 80					
A	B	C	D	E	FX
76.25	23.75	0.0	0.0	0.0	0.0
Provides: doc. RNDr. Gabriela Andrejková, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ MIN2/15		Course name: Informatics for medicine			
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: 3					
Recommended semester/trimester of the course: 6.					
Course level: I., II.					
Prerequisites: ÚINF/MIN1/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 5					
A	B	C	D	E	FX
60.0	0.0	20.0	0.0	20.0	0.0
Provides: doc. RNDr. Gabriela Andrejková, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ MAIN/15		Course name: Interdisciplinary applications 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: 4					
Recommended semester/trimester of the course:					
Course level: I.					
Prerequisites: (ÚINF/ANO/15 and leboÚINF/AFJ1a/15),(ÚINF/ASU1/15 and leboÚFV/ POF1b/99 and leboÚFV/UPF1/12),(ÚINF/UNS1/15 and leboÚINF/UNV1/15 and leboÚFV/ NOT1b/03)					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 5					
A	B	C	D	E	FX
20.0	20.0	20.0	20.0	20.0	0.0
Provides:					
Date of last modification: 24.08.2018					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ ZIV1/16		Course name: Internet of Things			
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., 6.					
Course level: I.					
Prerequisites: ÚINF/PAZ1a/15 and lebo ÚINF/ePAZ1a/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 28					
A	B	C	D	E	FX
89.29	10.71	0.0	0.0	0.0	0.0
Provides: RNDr. František Galčík, PhD., RNDr. Miroslav Opiela, PhD.					
Date of last modification: 03.02.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: Dek. PF UPJŠ/USPV/13	Course name: Introduction to Study of Sciences
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: Per study period: 12s / 3d Course method: present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment	
Total number of assessed students: 1731	
abs	n
86.48	13.52
Provides:	
Date of last modification: 25.09.2019	
Approved: prof. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ UKA1/15		Course name: Introduction to cognitive algorithms			
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: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Overview of central nervous system and algorithms to describe it.					
Brief outline of the course: Overview of the cognitive processes in the human brain and of computational algorithms used to describe these processes.					
Recommended literature: 1. Kopčo N (2011) Výpočtová neuroveda (Úvod do modelovania neurofyziologických a behaviorálnych dát), Vydavateľ: Technická univerzita v Košiciach. 2. Hertz J, Krogh A and Palmer RG: Introduction to the theory of neural computation. Addison-Wesley 1991 3. Dayan P and LF Abbott: Theoretical Neuroscience - Computational and Mathematical Modeling of Neural Systems. MIT Press, 2001					
Course language: english or slovak					
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: doc. Ing. Norbert Kopčo, PhD., Ing. Peter Lokša					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, 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: 3., 5.					
Course level: I., II.					
Prerequisites:					
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: 297					
A	B	C	D	E	FX
13.8	10.44	13.8	23.57	29.97	8.42
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ UIB1/17		Course name: Introduction to information security			
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: 5.					
Course level: I., N					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 56					
A	B	C	D	E	FX
37.5	37.5	14.29	7.14	1.79	1.79
Provides: RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 27.03.2019					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ UPR1/15		Course name: Introduction to law for informatics			
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: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Written final exam (score at least 50%)					
Learning outcomes: To provide theoretical background for studying computer science in general, by giving the necessary knowledge in the Slovak private and public law.					
Brief outline of the course: (1) Introduction to concepts of law and legal theory (2) Introduction to Civil law (3) Introduction to Commercial law (4) Introduction to Labor law (5) Introduction to Administrative law (6) Introduction to Tax law (7) Introduction to criminal law					
Recommended literature: (1) Selected slovak legislation					
Course language:					
Notes:					
Course assessment Total number of assessed students: 12					
A	B	C	D	E	FX
25.0	16.67	16.67	16.67	25.0	0.0
Provides: RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 14.01.2020					
Approved: prof. RNDr. Gabriel Semanišin, 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: 3., 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: Evaluation of projects created for neural network applications. Written and oral exam.					
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. Mitchell, M. (1998). An introduction to genetic algorithms. MIT press.					
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: 439					
A	B	C	D	E	FX
14.12	17.08	22.55	19.13	22.78	4.33
Provides: RNDr. Ľubomír Antoni, PhD.					

Date of last modification: 10.02.2021

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ UNV1/15		Course name: Introduction to neurosciences			
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., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Examination					
Learning outcomes: Introduction to anatomy and physiology of human brain, to cognitive processes corresponding to different mental functions, and to computational tools used in neuroscience.					
Brief outline of the course: Description of neural centers of basic cortical functions (visual, auditory, sensory and motor cortex, learning and memory). Basic physiological, psychological, psychophysical and computational methods used in neuroscience with focus on the application of computational tools for electrophysiological brain activity recording and imaging (e.g., magnetic resonance). Computational applications of neuroscience research.					
Recommended literature: 1. Gazzaniga M. (ed.): The New Cognitive Neurosciences. 2nd ed. MIT Press. 1999 2. Dayan P and LF Abbott: Theoretical Neuroscience - Computational and Mathematical Modeling of Neural Systems. MIT Press, 2001 3. Stillings et al.: Cognitive Science: An Introduction, 2nd ed., MIT Press, 1995					
Course language: Slovak or English					
Notes: Content prerequisites: Algebra, programming (Matlab).					
Course assessment Total number of assessed students: 29					
A	B	C	D	E	FX
17.24	24.14	20.69	24.14	10.34	3.45
Provides: doc. Ing. Norbert Kopčo, PhD., Ing. Peter Lokša					
Date of last modification: 10.02.2021					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ UIN1/15		Course name: Introduction to study 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: 1.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 284					
A	B	C	D	E	FX
43.31	17.25	13.38	8.45	3.17	14.44
Provides: prof. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD., Mgr. Alexander Szabari, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ AEO1/15		Course name: Legal aspects of electronic commerce			
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: 4., 6.					
Course level: I., II.					
Prerequisites:					
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: doc. JUDr. Regina Hučková, PhD., doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PAI1/13	Course name: Legal aspects of 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: 2., 4.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Written final exam (score at least 50%)	
Learning outcomes: To provide theoretical background for studying computer science in general, by giving the necessary knowledge in the legal aspects of information and communications technologies (ICT law).	
Brief outline of the course: (1) Introduction to ICT law (2) Legal acts (3) Electronic signatures (4) Electronic commerce (5) Consumer rights (6) Intellectual property and software law (7) Privacy and personal data protection (8) ISPs and their responsibility; (9) Legal aspects of cyber security and digital forensics (10) Cyber crime (11) Legal aspects of domain names	
Recommended literature: (1) Murray A. Information technology law: the law and society. Oxford University Press; 2013 Aug 22. (2) Lloyd IJ. Information technology law. Oxford University Press; 2017. (3) Acts of EU law - regulations and directives	
Course language:	
Notes:	

Course assessment					
Total number of assessed students: 50					
A	B	C	D	E	FX
16.0	22.0	20.0	12.0	22.0	8.0
Provides: RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 14.01.2020					
Approved: prof. RNDr. Gabriel Semanišin, 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: 4.					
Course level: I., II.					
Prerequisites:					
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:					
Notes:					
Course assessment Total number of assessed students: 266					
A	B	C	D	E	FX
22.93	11.28	13.16	24.44	26.32	1.88
Provides: RNDr. Ondrej Krídlo, PhD., prof. RNDr. Stanislav Krajčí, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ MTL/15	Course name: MATLAB and neurocognition
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., 5.	
Course level: I.	
Prerequisites:	
Conditions for course completion: quizzes, final exam	
Learning outcomes: Intro to programming in MATLAB with focus on its usage in Neural and Cognitive Science.	
Brief outline of the course: Intro to MATLAB: navigation and interaction, variables, vectors, matrices, operators, scripts, functions, toolboxes. Scripts for human-computer interaction in behavioral experiments. Generation of visual and auditory stimuli. Analysis and visualization of behavioral, neurophysiological and neuroimaging (fMRI, EEG, MEG) data. Cognitive and neural modeling in MATLAB.	
Recommended literature: 1. Wallisch et al. MATLAB for Neuroscientists: An Introduction to Scientific Computing in MATLAB. Academic Press 2008. 2. Duda, Hart, Stork: Pattern Classification, 2nd Edition, Wiley 2000 Stork, Yom-Tov: Computer Manual in MATLAB to accompany Pattern Classification, 2nd Edition, Wiley, 2004 3. Lewandowsky: Computational Modeling in Cognition. Sage, 2011 4. Levine: Introduction to Neural and Cognitive Modeling, Psychology Press, 2000 Dayan and Abbott: Theoretical Neuroscience: Computational and Mathematical Modeling of Neural Systems. MIT Press 2005.	
Course language: Slovak or English	
Notes: Content prerequisites: basic programming skills or instructor's consent	

Course assessment					
Total number of assessed students: 8					
A	B	C	D	E	FX
25.0	25.0	12.5	37.5	0.0	0.0
Provides: doc. Ing. Norbert Kopčo, PhD., Ing. Peter Lokša					
Date of last modification: 11.02.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ MIS/15		Course name: Management of information systems			
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: 4., 6.					
Course level: I.					
Prerequisites:					
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
26.67	46.67	13.33	13.33	0.0	0.0
Provides: prof. RNDr. Gabriel Semanišin, PhD.					
Date of last modification: 22.05.2018					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ MZIa/10	Course name: Mathematical foundations of informatics I
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: 6	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Two tests and completion of individual homework. Assessment is given on the basis of semestral evaluation and examination test.	
Learning outcomes: To obtain basic mathematical knowledge in arithmetic, linear algebra and elementary calculus. To become familiar with the applications of some fundamental mathematical concepts. To learn to work with mathematical software and together with the acquired knowledge to use it in solving various types of problems.	
Brief outline of the course: Integers and divisibility. Prime numbers and congruences. Applications of congruences and congruence classes. Matrices and determinants. Applications of matrices and determinants. Functions and their properties. Elementary functions. Limit of a function. Continuity and derivative of a function. Applications of derivatives.	
Recommended literature: Hallet D. H. (2014). Applied Calculus. John Wiley & Sons. Koshy T. (2007). Elementary Number Theory with Applications. Elsevier. Lay D. C. (2012). Linear Algebra And Its Applications. Boston: Addison-Wesley. Studenovská D., Madaras T. (2006). Matematika pre nematematické odbory. UPJŠ. Studenovská D., Madaras T., Mockovciak S. (2006). Zbierka úloh z matematiky pre nematematické odbory. UPJŠ. Zimmermann P. et al. (2018). Computational Mathematics with SageMath. Springer.	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 196					
A	B	C	D	E	FX
0.51	9.69	9.18	19.39	47.96	13.27
Provides: prof. RNDr. Tomáš Madaras, PhD., RNDr. Juraj Hudák					
Date of last modification: 19.09.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ MZIb/10		Course name: Mathematical foundations of informatics 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: 6					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites: ÚMV/MZIa/10					
Conditions for course completion: Based on results of two tests and individual homeworks. Based on semestral evaluation and examination test.					
Learning outcomes: To extend the obtained knowledge in mathematics by topics in integral calculus, differential equations and infinite series.					
Brief outline of the course: Indefinite and definite integral and their applications. Differential equations. Series, convergence criteria. Series of functions, Taylor expansion. Periodic functions, trigonometric series, Fourier expansion.					
Recommended literature: Huťka, Benko, Ďurikovič: Matematika, Alfa, Bratislava 1991 D. Studenovská, T. Madaras, S. Mockovčiak: Zbierka úloh z matematiky pre nematematické odbory, UPJŠ 2006 D. Studenovská, T. Madaras: Matematika pre nematematické odbory, UPJŠ 2006 J. Ivan: Matematika 2, Alfa, Bratislava 1989 T. Katriňák a kol.: Algebra a teoretická aritmetika, Alfa, Bratislava 1986					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 111					
A	B	C	D	E	FX
0.9	9.01	8.11	22.52	52.25	7.21
Provides: prof. RNDr. Tomáš Madaras, PhD., RNDr. Juraj Hudák					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ MPJ1/15		Course name: Modern programming languages			
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: 6.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Mastering the basics of standard and experimental programming models and techniques.					
Brief outline of the course: Object oriented programming, Generic programming – parametric polymorphism. Vector programming – operator overloading, indexer. Event programming (event handling) – delegates. Attribute programming. Parallel and multithread programming – processes, threadpool. Functional and declarative programming – lambda expressions, LINQ. Graphics primitives.					
Recommended literature: 1. Andrew Troelsen, Pro C# 5.0 and the .NET 4.5 Platform, 2012, APRESS 2. Joseph Albahari, Ben Albahari, C# 5.0 in a Nutshell: The Definitive Reference, 2012, O'REILLY 3. Daniel Solis, Illustrated C# 2012, 2012, APRESS					
Course language:					
Notes: If necessary, teaching, mid-term and final evaluation will be by distance form.					
Course assessment Total number of assessed students: 142					
A	B	C	D	E	FX
16.2	19.01	24.65	21.13	17.61	1.41
Provides: doc. RNDr. Csaba Török, CSc.					
Date of last modification: 30.03.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ MWT1/19		Course name: Modern web technologies			
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: 6.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: Active attendance at seminars, defense of final group project. The final project is partially created on seminars.					
Learning outcomes: Ability to design and create dynamic scalable SPA - Single Page Application using Angular and Spring Boot.					
Brief outline of the course: - Selected part of Javascript and Typescript, High order functions, composition of pure functions, Angular - components, services, Observable, router, localStorage, form validation, communication in component hierarchy, modules, hierarchical routing, routing guards, RXJS, material components library, NGXS storage and its extensions, reactive forms, custom validators, asynchronous validators, pagination, filtering and sorting of local and remote data in tables, Websockets.					
Recommended literature: 1. web page of framework Angular: https://angular.io/ 2. web page of Angular Material: https://material.angular.io/ 3. web page of storage NGXS: https://www.ngxs.io/ 4. web page of library RXJS: https://rxjs-dev.firebaseapp.com/guide/overview 5. Craig Walls: Spring in action. Fifth edition. ISBN: 978-1-61729-494-5. Hanning 2019					
Course language: slovak or english					
Notes:					
Course assessment Total number of assessed students: 12					
A	B	C	D	E	FX
75.0	0.0	8.33	8.33	8.33	0.0
Provides: RNDr. Peter Gurský, PhD.					
Date of last modification: 16.01.2020					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/SKB1/15		Course name: Network and communication security			
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: 4., 6.					
Course level: I.					
Prerequisites: ÚINF/PSIN/15,(ÚINF/UIB1/17 and leboÚINF/UIB1/21)					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 4					
A	B	C	D	E	FX
0.0	0.0	0.0	25.0	50.0	25.0
Provides: prof. RNDr. Gabriel Semanišin, PhD., doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ NOT1a/03	Course name: Nontraditional Optimization Techniques I
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., 5.	
Course level: I., II.	
Prerequisites:	
Conditions for course completion: Monitoring progress in solving applied projects. examination (50%), quality of the project (50%) examination	
Learning outcomes: To familiarize students with biologically and physically inspired optimization, simulation and prediction techniques. To expand students' creativity and programming skills by applying heuristic techniques in solving applied problems.	
Brief outline of the course: Fundamentals of optimization theory. Basic optimization problems. Basic types of objective functions. Classification of optimization techniques. Gradient-based optimization techniques. Evolutionary algorithms. Genetic algorithms. Genetic algorithms as Markov processes. Statistical Mechanics Approximations of Genetic Algorithms. Monte Carlo simulation and simulated annealing. Swarm optimization. Cellular Automata and their applications in simulations of complex systems. Fractals. Agent-based models. Evolutionary games. Evolution of cooperation. Fundamentals of Neural Networks. Application of singular value decomposition to solve least squares problems.	
Recommended literature: Hartmann, A. K., Rieger, H., Optimization Algorithms in Physics, Wiley, 2002 Reeves, C. R., Rowe, J. E., Genetic Algorithms: Principles and perspectives, Kluwer, 2003 Mitchell, M., Complexity. A Guided Tour, Oxford University Press, 2009 Solé, R. V., Phase Transitions, Princeton University Press, 2011 Ilachinski, A., Cellular Automata. A Discrete universe, World Scientific, 2002 Haykin, S., Neural Networks. A Comprehensive Foundation, Prentice-Hall, 1999	
Course language:	
Notes:	

Course assessment					
Total number of assessed students: 81					
A	B	C	D	E	FX
69.14	17.28	7.41	2.47	3.7	0.0
Provides: doc. RNDr. Jozef Uličný, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ NOT1b/03		Course name: Nontraditional Optimization Techniques 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: 4., 6.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: Presentation of the project in written form. Oral exam and discussion of the presented project. Should corona-virus quarantine persist, written report and answer to posed questions suffice.					
Learning outcomes: By using examples from the biology to learn applications of optimization techniques on study and interpretation of complex systems. Introduction to new paradigms in the area of systems biology, including parasite/host coevolution.					
Brief outline of the course: Complex systems, emergent behavior. Evolutionary theory and memetics. Application of optimization techniques on complex systems. Application of methods /genetic algorithms, simulated annealing, taboo search/ on selected problems of biomolecular simulations. Molecular dynamics, protein folding. Population dynamics, metabolic networks and complexity in bioinformatics.					
Recommended literature: The actual scientific papers.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 44					
A	B	C	D	E	FX
88.64	4.55	4.55	2.27	0.0	0.0
Provides: doc. RNDr. Jozef Uličný, CSc.					
Date of last modification: 27.03.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ NUM/10		Course name: Numerical Methods			
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: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Continuous evaluation is based on students' activity in the classroom and work on assignments. Evaluation					
Learning outcomes: To acquaint students with basic numerical methods of calculus and algebra, which are necessary for the subsequent course of computational physics.					
Brief outline of the course: Computational solutions of physical problems and computational errors. Approximation and interpolation of functions. Fast Fourier transform. Linear systems of equations - direct and iterative methods. Nonlinear systems of equations. Conditions of convergence and assesment of error. Numerical derrivatives and quadrature. Matrix operations, determinants and inverse matrices. Eigenvalues and eigenvectors - partial and complete problem.					
Recommended literature: 1. C. Pozrikidis: Numerical Computation in Science and Engineering, Oxford University Press, 1998. 2. R.W. Hamming: Numerical Methods for Scientists and Engineers, Dover, 1973. 3. A.L. Garcia: Numerical Methods for Physics, Prentice-Hall, 1994.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 130					
A	B	C	D	E	FX
15.38	16.92	25.38	22.31	15.38	4.62
Provides: prof. RNDr. Milan Žukovič, PhD.					
Date of last modification: 28.03.2019					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ OSY1/15	Course name: Operating systems
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: 3.	
Course level: I.	
Prerequisites: ÚINF/PRP2/15,(ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15 and leboÚINF/PRG1/15)	
Conditions for course completion: Test and oral exam	
Learning outcomes: To gain knowledge about the basic architecture of the operating system. Understand algorithms for multi-process CPU allocation, interprocess communication, and memory allocation. To be able to apply basic synchronization procedures and to solve problems of allocation of common resources for I / O operations. Understand the organization of files and their protection by access rights. To be able to practically use the services of the Unix and Windows operating system.	
Brief outline of the course: Operating system structure and basic functions. Different kinds of operating systems and their history. Multiprogramming, context switching, interrupts, time sharing, interoperability. Processes, process management, threads, scheduling, interprocess communication (race condition, mutual exclusion, deadlock, starvation). Memory management, relocation, segmentation, paging, virtual memory. I/O management, device drivers, interrupt handlers. External memory (disk) - direct and sequential access. File systems, file operations, directories, access control, access rights.	
Recommended literature: 1. A. Silberschatz, G. Gagne, P. Baer: Operating System Concepts, Wiley, 2002 2. A. S. Tanenbaum: Modern Operating Systems, Prentice-Hall, 2001	
Course language:	
Notes:	

Course assessment					
Total number of assessed students: 304					
A	B	C	D	E	FX
22.37	21.71	19.08	25.0	10.53	1.32
Provides: RNDr. PhDr. Peter Pisarčík					
Date of last modification: 14.01.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ PDS1/15		Course name: Parallel and distributed systems			
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: 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: to introduce the fundamentals of parallel and distributed programming					
Brief outline of the course: current parallel and distributed architectures, basic issues in parallel and distributed applications development, data structures and programming methodologies					
Recommended literature: 1. Kenneth A. Berman and Jerome L. Paul: Algorithms: Sequential, Parallel, and Distributed, Thomson, 2005, ISBN 0-534-42057-5 2. Gregory R. Andrews: Foundations of Multithreaded, Parallel, and Distributed Programming, Addison-Wesley, 2000, ISBN 0-201-35752-6 3. Joseph JáJá: An Introduction to Parallel Algorithms, Addison-Wesley, 1992, ISBN 0-201-54856-9 4. Gerard Tel: Introduction to Distributed Algorithms, Cambridge University Press, 1994, ISBN 0-521-47069-2					
Course language:					
Notes:					
Course assessment Total number of assessed students: 133					
A	B	C	D	E	FX
23.31	16.54	15.04	18.05	15.79	11.28
Provides: doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ LEK1/99		Course name: Physical Principles of Medicine Technique			
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: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 35					
A	B	C	D	E	FX
85.71	11.43	2.86	0.0	0.0	0.0
Provides: doc. RNDr. Karol Flachbart, DrSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ PPLO/15		Course name: Principles of Computers, Logic Circuits			
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: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: written exam, presence at the laboratory practice					
Learning outcomes: Student will obtain knowledge about principles of functioning, analysis and synthesis of logical electronic circuits, as a basic unit of computing technology. Student will use his theoretical knowledge to design and to construct of electronic circuits and he/she will learn how to interpret measured results.					
Brief outline of the course: 1. Combinatorial logical circuits (definitions, laws of logical algebra, electronic models of operations of Boolean algebra, NAND, digital multiplexor and demultiplexor, detector of errors for BDC code, arithmetic addition of two one bit binary operands). 2. Digital memory circuits (bistable circuit as basic memory unit, synchronous and asynchronous switching circuits). 3. Sequential logical circuits (sequential behavior, structure and stability of sequential logical circuits, basic sequential functions and their realization, arithmetic unit of digital computer)					
Recommended literature: Petrovič P.: Elektronika I – Vybrané obvody číslicovej techniky. Skriptum PF, Edičné stredisko UPJŠ, Košice 2003. 2. vydanie: Vydavateľstvo UPJŠ, Košice, 2006.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 51					
A	B	C	D	E	FX
35.29	47.06	15.69	1.96	0.0	0.0
Provides: Mgr. Vladimír Komanický, Ph.D.					
Date of last modification: 21.09.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PRP2/15	Course name: Principles of computers
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: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes: - Know brief history of computer, classification and construction principles of computers of von Neumann type. - Understand relation between real numbers, integers and their binary representation as well as be able to perform basic arithmetic and logic operations over binary represented numbers. - Learn basics about logic gates, combination and sequence circuits and their structure. Understand principles of how basic circuits realize arithmetic-logic unit and other parts of computers e.g. memory. - Know principles of communication of processor and other devices via interruptions and direct memory access. - Get idea of device drivers, device controllers and their functionality.	
Brief outline of the course: Brief outline of the course: - computers of von Neumann type, - history of computers, - binary encoding of real numbers and integers, - realization of computers parts by sequence and combination circuits, - principles of various memory cells and memory matrices, - types of memories, - architecture of processor on levels of digital logic, machine cycle, instruction cycle, - input and output devices, - principles of interruptions, - direct memory access, - device drivers, - device controllers, - peripheral devices.	
Recommended literature: 1. W. Stallings: Computer Organization and Architecture, Prentice Hall, 2002	

Course language:					
Notes:					
Course assessment					
Total number of assessed students: 222					
A	B	C	D	E	FX
26.58	14.41	15.77	13.06	24.32	5.86
Provides: RNDr. Juraj Šebej, PhD.					
Date of last modification: 13.01.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PBS/15	Course name: Pro-seminar to bachelor thesis
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 1 Per study period: 14 Course method: present	
Number of ECTS credits: 1	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment	
Total number of assessed students: 289	
abs	n
93.77	6.23
Provides: RNDr. Ľubomír Antoni, PhD.	
Date of last modification: 26.01.2021	
Approved: prof. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PMO1/15	Course name: Proces modelling
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: 4., 6.	
Course level: I.	
Prerequisites: (ÚINF/PAZ1b/15 and leboÚINF/ePAZ1b/15), ÚINF/DBS1a/15, ÚINF/SWI1a/15	
Conditions for course completion: The assessment includes the continuous evaluation of partial tasks related to complex project solving during semester. The final evaluation is awarded on the basis of the continuous evaluation and the result of the exam. The exam requires demonstration of the ability to orientate oneself in the lectured issues, mastering the theoretical foundations of process modeling, basic skills for the creation and interpretation of process models. The exam consists of written and oral part.	
Learning outcomes: To get acquainted with the theoretical foundations of process modeling. To master the basic principles of creating process models. To get acquainted with standard languages for process modeling and gain practical experience in creating models using selected modeling tools.	
Brief outline of the course: Introduction to process modeling. Approaches to the development of large software systems. Theoretical foundations of process modeling. Petri nets. Process orchestration. Process choreography. Selected process properties. Process model architectures. Methodologies and standards.	
Recommended literature: 1. Ehrig, H.; Juhas, G.; Padberg, J.; Rozenberg, G. (Eds.), Advances in Petri Nets, Lecture Notes in Computer Science , Vol. 2128 (2001) 2. Eshuis, R. ; Wieringa R.: Comparing Petri Net and Activity Diagram Variants for Workflow Modelling – A Quest for Reactive Petri Nets, [dostupné online http://is.tm.tue.nl/staff/heshuis/pnt.pdf] 3. Madison D., Process Mapping, Process Improvement and Process Management, Paton Press 2005 4. Weske, M. Business Process Management, Springer 2007 5. White S.A., Miers D., Fischer L., BPMN Modeling and Reference Guide, Future Strategies Inc., Lighthouse Pt 2008 6. White:, S.A. Process Modeling Notations and Workflow Patterns, [available online http://www.omg.org/bp-corner/bp-files/Process_Modeling_Notations.pdf]	

Course language: Slovak or English					
Notes: Content prerequisites: programming, bases of software engineering and database management systems, bases of project management					
Course assessment Total number of assessed students: 32					
A	B	C	D	E	FX
15.63	28.13	25.0	21.88	0.0	9.38
Provides: prof. RNDr. Gabriel Semanišin, PhD.					
Date of last modification: 23.02.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ OP/14	Course name: Professional experience
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 2t Course method: present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course:	
Course level: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment	
Total number of assessed students: 10	
abs	n
100.0	0.0
Provides: Mgr. Alexander Szabari, PhD., Ing. Miron Kuzma, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ PRG1/15		Course name: Programming in Python I			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 3 Per study period: 14 / 42 Course method: present					
Number of ECTS credits: 6					
Recommended semester/trimester of the course: 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 55					
A	B	C	D	E	FX
18.18	10.91	18.18	14.55	14.55	23.64
Provides: PaedDr. Ján Guniš, PhD., doc. RNDr. Ľubomír Šnajder, PhD.					
Date of last modification: 02.03.2020					
Approved: prof. RNDr. Gabriel Semanišin, 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: 5.	
Course level: I., II.	
Prerequisites:	
Conditions for course completion: Practics attendance and activity. Home assignment 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:	

Notes:					
Course assessment					
Total number of assessed students: 218					
A	B	C	D	E	FX
34.4	19.27	17.43	14.22	10.55	4.13
Provides: RNDr. PhDr. Peter Pesarčík, RNDr. Patrik Pekarčík					
Date of last modification: 07.09.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PRS/15	Course name: Programming of robotic kits
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: 3.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Assessment of individual work on computers for a number of sub-assignments - robotic mini-project. Creating and presenting a programmed robotic model including documentation.	
Learning outcomes: 1. To acquire an overview of robotic sets and robotic programming environments. 2. To acquire skills in constructing and programming robots in selected robotic programming environments.	
Brief outline of the course: Robotic set (Lego Mindstorms) - components, engines, sensors, basics of constructing of the mechanical parts of the model. Programming robotic models in languages NXT-G and NXC - branching statements, loops, blocks, events, parallel processes that work with sensors, datalogging, communication between several NXT bricks. Creating mini-project (eg, traffic lights, parking, dance creations, guitar, smart thermometer, measuring distance). Robotic competition, ideas for demanding projects. Creation and presentation of the final project - a programmed robot model (eg, navigate a maze, sports, paramedic) including documentation.	
Recommended literature: 1. BUMGARDNER, J. (2007) The Origins of Mindstorms. Wired, 2007. http://www.wired.com/geekdad/2007/03/the_origins_of/ 2. Carnegie Mellon. Robotics Academy. http://www.education.rec.ri.cmu.edu/ 3. KABÁTOVÁ, M. a kol. (2010) Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Didaktika robotických stavebníc. Bratislava : ŠPÚ, 2010. ISBN 978-80-8118-070-5 4. JAKEŠ, T. (2014) LEGO MINDSTORMS NXT - Robotické vzdelávaní, ZČU v Plzni, 2014. https://lego.zcu.cz/web/	
Course language:	
Notes:	

Course assessment					
Total number of assessed students: 49					
A	B	C	D	E	FX
53.06	22.45	12.24	2.04	0.0	10.2
Provides: RNDr. Zuzana Bednárová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PSW1/06	Course name: Programming of web-pages
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.	
Prerequisites: (ÚINF/DBS1a/15 and leboÚINF/DBS/15),ÚINF/PAZ1a/15	
Conditions for course completion:	
Learning outcomes: Acquire overview about modern technologies to make dynamic web pages. Be able to make web pages with cascading styles according to W3C standards. Use technologies on server side (PHP) and on client side (JavaScript). Understand relational databases (MySQL). Understand web applications security risks and know how to eliminate them.	
Brief outline of the course: Principle of making web pages. HTML language, W3C standards. Optimization of work, cascading styles. Tools for creating the web. Programming in JavaScript. Simple scripts for dynamic web pages. Programming on server side, script language PHP. Application based on PHP. Work with MySQL database. Conjunction of used technologies. Selected problems resolvable by technologies on server side and on client side.	
Recommended literature: GILMORE, W. Jason. Beginning PHP and MySQL: from novice to professional. 4th ed. New York: Apress, 2010. ISBN 978-143-0231-141. KOSEK, Jiří. PHP - tvorba interaktivních internetových aplikací: podrobný průvodce. Vyd. 1. Praha: Grada, 1999, 490 s. Průvodce (Grada). ISBN 80-716-9373-1. SUEHRING, Steve a Janet VALADE. <i>PHP, MySQL, JavaScript</i>. Vyd. 1. Brno: Computer Press, 2006, xxiv, 692 pages. --For dummies. ISBN 978-1-118-21370-4. HUSEBY, Sverre H. Zranitelný kód. Brno: Computer Press, 2006, 207 s. ISBN 80-251-1180-6. THE OWASP FOUNDATION. OWASP [online]. 2014 [cit. 2014-02-26]. Dostupné z: https://www.owasp.org/index.php/Main_Page	
Course language: slovak	
Notes:	

Course assessment			
Total number of assessed students: 12			
abs	n	neabs	z
66.67	33.33	0.0	0.0
Provides: PaedDr. Ján Guniš, PhD.			
Date of last modification: 27.03.2020			
Approved: prof. RNDr. Gabriel Semanišin, PhD.			

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PAZ1a/15	Course name: Programming, algorithms, and complexity
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 3 / 4 Per study period: 42 / 56 Course method: present	
Number of ECTS credits: 8	
Recommended semester/trimester of the course: 1.	
Course level: I., II.	
Prerequisites:	
Conditions for course completion: Get a prescribed minimum number of points for activities of continuous assessment and for solving tasks during final practical test.	
Learning outcomes:	
Brief outline of the course: First part of the course (with turtle graphics): New Eclipse project, interactive communication with objects, simple turtle graphics, making user methods, local variables, variable types, arithmetic and logical expressions, random numbers, conditions, loops for and while, debugging, references, chars, Strings, arrays, instance variables, mouse events, simple array algorithms. Second part of the course (without turtle graphics): Exceptions, using try-catch-finally block, files and directories, conversion from string variables, encapsulation, constructors with parameters, constructors hierarchy, getters and setters, interfaces, inheritance and polymorphism, abstract classes and methods, packages, visibility modifiers, sorting using Arrays.sort() and interfaces Comparable and Comparator, Java Collections Framework: autoboxing, interface List, ArrayList, LinkedList, interface Set and class HashSet, methods equals() and hashCode(), for-each loop, interface Map and class HashMap, custom Exceptions, rethrowing exceptions, exceptions' inheritance, Runtime exceptions, Errors, static variables and methods.	
Recommended literature: 1. ECKEL, B.: Thinking in Java, Pearson, 2006, ISBN: 978-01-318-7248-6 2. PECINOVSKÝ, R.: OOP - Naučte se myslet a programovat objektově, Computer Press, a.s., Brno, 2010, ISBN: 978-80-251-2126-9 3. SIERRA, K., BATES, B. Head First Java, O'Reilly Media; 2nd edition, 2005, ISBN: 978-05-960-0920-5	
Course language: Slovak language, english language is required only to read Java API documentation.	
Notes:	

Course assessment					
Total number of assessed students: 717					
A	B	C	D	E	FX
16.18	7.39	11.44	15.48	15.06	34.45
Provides: RNDr. Juraj Šebej, PhD., RNDr. Zuzana Bednárová, PhD., RNDr. Miroslav Opiela, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PAZ1b/15	Course name: Programming, algorithms, and complexity
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 4 Per study period: 28 / 56 Course method: present	
Number of ECTS credits: 7	
Recommended semester/trimester of the course: 2.	
Course level: I., II.	
Prerequisites: ÚINF/PAZ1a/15	
Conditions for course completion: Get a given minimum number of points for activities of continuous assessment and for solving tasks during final practical test. The final practical test focuses on application of known algorithms and techniques of efficient algorithm design.	
Learning outcomes:	
Brief outline of the course: Recursion and its applications, fractals. Binary search and simple sorting algorithm with quadratic time complexity. Time and space complexity of algorithms, analysis of time complexity, O-notation. Basic data structures and their applications: linked list, stack, and queue. Hierarchical data and their representation, trees, tree traversals, binary search trees. Arithmetic expressions, evaluation of an arithmetic expression. Efficient sorting algorithm: QuickSort, MergeSort, and HeapSort. Backtrack. Techniques “divide and conquer” and dynamic programming as methods for design of efficient algorithms. Basic graph algorithms for unweighted graphs (Breadth-first search, Depth-first search, graph connectivity, graph components, graph bridges, topological sort) and for weighted graphs (shortest paths: Bellman-Ford algorithm, Dijkstra algorithm, Floyd-Warshall algorithm; minimum spanning tree: Prim algorithm, Kruskal algorithm). String algorithms. Greedy algorithms.	
Recommended literature: WRÓBLEWSKI, P.: Algoritmy, datové struktury a programovací techniky. Computer Press, Brno, 2004 CORMEN, T.H., LEISERSON, Ch.E., RIVEST, R.L, STEIN, C. Introduction to Algorithms. The MIT Press, 2009. KLEINBERG, J., TARDOS, E.: Algorithm Design, Cornell University, Addison Wesley, New York, 2006.	
Course language: Slovak language, literature is available in english and czech language.	
Notes:	

Course assessment					
Total number of assessed students: 1191					
A	B	C	D	E	FX
13.1	7.14	9.82	19.4	21.91	28.63
Provides: RNDr. Zuzana Bednárová, PhD., RNDr. Juraj Šebej, PhD., RNDr. Miroslav Opiela, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ PAZ1c/17	Course name: Programming, algorithms, and complexity
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 3 Per study period: 28 / 42 Course method: present	
Number of ECTS credits: 5	
Recommended semester/trimester of the course: 3.	
Course level: I., II.	
Prerequisites: ÚINF/PAZ1a/15 and leboÚINF/ePAZ1a/15	
Conditions for course completion: Active attendance at seminars, creation of two team projects.	
Learning outcomes: Gain skills to design and implement complex application with three-layer architecture and well-known design patterns. Ability to create REST server and simple Angular application with ability to communicate with the REST server.	
Brief outline of the course: <ol style="list-style-type: none"> 1. Classes, methods and properties identification. Entities. Unit testing in JUnit. 2. Introduction to JavaFx, FXML, Scene Builder, Controller. 3. Model-view-controller pattern, classes Observable and Property, model of models, persistent layer, entities and identifiers, CRUD repository in main memory, connection between GUI and persistent layer. 4. Interfaces for DAO objects, class relationships with static association. Pros and cons in hardwired associations. Implementing Factory design pattern as an abstraction of hardwired association. Enum. Implementation of database persistent layer, configuration of JDBCTemplate and RowMapper. 5. Inserting data by JDBCTemplate, Associations between classes. Cardinalities: 1:1, 1:M, 1:N. Design and realization in the code. Design of complex data model, ResultSetExtractor. 6. Business layer, three-layer architecture, modal windows, editing entities in JavaFx and MySQL. 7. Logging with default tools and with 'slf4j' library. Logging best practices. Safe password storage. 8. Annotations, lambda expressions, generic classes 9. Spring Boot and REST services. Json format. 10. Angular - Installation, TypeScript, DOM model, components and their properties, events listeners in components. 11. Angular - components interaction, forms, input validation. 12. Angular - services, Observable, injection, communication with REST server via HTTP. 	
Recommended literature: <ol style="list-style-type: none"> 1. SIERRA, K., BATES, B.: Head First Java (2nd Edition), 2005 2. ECKEL, B.: Thinking in Java (4th Edition), 2006 3. Angular Docs, typescript. Dostupné na internete: https://angular.io/docs/ts/latest/ 	

Course language: Slovak or English.					
Notes:					
Course assessment Total number of assessed students: 343					
A	B	C	D	E	FX
32.65	17.78	16.62	15.45	13.12	4.37
Provides: RNDr. Peter Gurský, PhD.					
Date of last modification: 05.02.2019					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ PRO1a/15		Course name: Project I.			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present					
Number of ECTS credits: 4					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Activity in exercises, elaboration of home assignments. Presentation of the results achieved in solving a specific problem. Uploading a software work.					
Learning outcomes: Acquire the way of working on a software work, communication in a software team, solving problems of computer systems administration in all phases of their life cycle.					
Brief outline of the course: Work in a 2-4 member team on the development, testing of a software product under the guidance of a mentor from software companies. Getting acquainted with continuous integration and working with git in command lines.					
Recommended literature: 1. https://www.udemy.com/course/ Git & GitHub - The Complete Git & GitHub 2. https://www.jenkins.io/doc/ 3. Study literature tied to the selected project (according to the client's recommendation)					
Course language: Slovak or English					
Notes: Content prerequisites: advanced programming skills					
Course assessment Total number of assessed students: 95					
A	B	C	D	E	FX
70.53	5.26	8.42	11.58	3.16	1.05
Provides: Mgr. Alexander Szabari, PhD.					
Date of last modification: 25.03.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ PRO1b/15		Course name: Project II.			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present					
Number of ECTS credits: 4					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Presentation of the results achieved in solving a specific problem. Uploading a software work. Preparation of materials for the promotion of the final work.					
Learning outcomes: Acquire the way of working on the software work with agile methodology, communication in the software team, solving problems of computer systems administration in all phases of their life cycle.					
Brief outline of the course: Work in a 4-5 member team on the development, testing of a software product under the guidance of a mentor from software companies. Improving with continuous integration and working with git in command lines. Software development using Agile methodology.					
Recommended literature: 1. https://www.udemy.com/course/ Git & GitHub - The Complete Git & GitHub 2. https://www.jenkins.io/doc/ 3. Study literature tied to the selected project (according to the client's recommendation) 4. "What is Agile Software Development?". Agile Alliance. 8 June 2013. Retrieved 4 April 2015.					
Course language: Slovak or english					
Notes: Content prerequisites: advanced programming skills					
Course assessment Total number of assessed students: 70					
A	B	C	D	E	FX
64.29	11.43	8.57	7.14	2.86	5.71
Provides: Mgr. Alexander Szabari, PhD., RNDr. Róbert Novotný, PhD.					
Date of last modification: 25.03.2021					

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ PRM1/15		Course name: Project management			
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: I.					
Prerequisites:					
Conditions for course completion: The ongoing evaluation consists of the evaluation of the sub-tasks related to the project design. The final evaluation is based on a written and oral exam. The result of the ongoing evaluation will also be included in the overall evaluation.					
Learning outcomes: Gain basic knowledge and skills related to project preparation, project implementation and project evaluation. Acquire basic knowledge of project team management and organization.					
Brief outline of the course: Introduction to project management. Project planning. Preparation of project documentation. Project specification. Decision making. Communication. Work organization. Project management. Short-term and long-term project management strategies. Specific approaches for projects in the field of informatics.					
Recommended literature: 1. BERKUN, S. The Art Of Project Management. O Reilly, 2005. 2. Erik Larson and Clifford Gray : Project Management: 3. PRINCE2. Available on internet: < http://www.prince2.com >.					
Course language: Slovak or english					
Notes:					
Course assessment Total number of assessed students: 86					
A	B	C	D	E	FX
30.23	26.74	23.26	8.14	5.81	5.81
Provides: Mgr. Alexander Szabari, PhD., prof. RNDr. Gabriel Semanišin, PhD.					
Date of last modification: 03.03.2021					
Approved: prof. RNDr. Gabriel Semanišin, 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: Per study period: 36s Course method: combined, present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisites:	
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:	
Notes:	
Course assessment	
Total number of assessed students: 41	
abs	n
12.2	87.8

Provides: Mgr. Agata Horbacz, PhD.
Date of last modification: 15.03.2019
Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ BAPS/15		Course name: Security and administration of computer systems			
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.					
Prerequisites: ÚINF/KRS/15,(ÚINF/ADL1/15 and leboÚINF/ADW1/15),(ÚINF/ARP1/15 and leboÚINF/FAN/15),ÚINF/SKB1/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 2					
A	B	C	D	E	FX
0.0	50.0	0.0	0.0	50.0	0.0
Provides:					
Date of last modification: 09.04.2018					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ BPD1/15		Course name: Security of computer systems and data			
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., 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 36					
A	B	C	D	E	FX
22.22	22.22	16.67	16.67	22.22	0.0
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ VKBa/15		Course name: Selected topics in security of computer networks			
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: 5.					
Course level: I.					
Prerequisites:					
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
80.0	13.33	6.67	0.0	0.0	0.0
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ VKBb/15		Course name: Selected topics in security of computer networks			
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: 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 10					
A	B	C	D	E	FX
90.0	0.0	0.0	0.0	0.0	10.0
Provides: doc. RNDr. Jozef Jirásek, PhD., RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ SPS1/15		Course name: Seminar in network programming			
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: 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: To render current technologies of programing in network distributed environment.					
Brief outline of the course: Basics of programming the client-server applications, iterative and concurrent servers, Remote Procedure Calls. Server-side programming, CGI, PHP, basics of Perl and Python. Script languages, ASP, JSP, Component Object Model, Corba, database connection's interfaces. Document Object Model, XML, XSL, dynamic extensions of HTML. Advanced level of programming is expected.					
Recommended literature: Internet sources and specifications.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 92					
A	B	C	D	E	FX
65.22	20.65	11.96	1.09	1.09	0.0
Provides: RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ SPG1/15		Course name: Seminar on computer graphics			
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: 3					
Recommended semester/trimester of the course: 4., 6.					
Course level: I.					
Prerequisites: ÚINF/UGR1/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course: Seminar is connecte to the lecture UGR Introduction to computer graphics. In seminar form students presents actual theoretical and implementation problems. Main goal in interest is oriented to quick algorithms of computer graphics, geometric modelling and realistic drawing of scenes. Knowledge from the lecture UGR and good programmers experience are supposed.					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 41					
A	B	C	D	E	FX
75.61	12.2	7.32	2.44	0.0	2.44
Provides: RNDr. Rastislav Krivoš-Belluš, PhD., doc. RNDr. Jozef Jirásek, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/OSS/15	Course name: Seminar to operation systems
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.	
Prerequisites: ÚINF/PAZ1a/15,(ÚINF/ZLI/21 and leboÚINF/POS2/15 and leboÚINF/ePOS2a/15)	
Conditions for course completion: Develop two final projects: PowerShell script (Windows) or Shellscript (Linux)	
Learning outcomes: To work with shells of Windows and GNU/Linux. Scripting in both platforms.	
Brief outline of the course: Block "Windows Shell Scripting" ----- PowerShell scripting environment and basic concepts. Cmdlet as a fundamental unit and its usage. Cmdlet parameters and documentation. Standard input and output. Pipes. Combining cmdlets via pipelines. Data model, classes and objects. Object properties. Relation between PowerShell object model and .NET platform. Developing complex scripts in the PowerShell ISE environment. Fundamentals of procedural programming in PowerShell. Function and filters. Providers: WMI, registers. Developing custom cmdlets in C#. Block „Linux Shell Scripting“ ----- Linux Shell Scripting: Bash and fundamental concepts. Standard input and output. Pipes and I/O redirection. Common filters for standard I/O. Basic programming constructs: conditions and loops. Exit codes as a basic for procedural elements Shell Expansions: arithmetic environment, subshells, variables. Accessing information structures and Linux filesystem. Creating complex and secure scripts -- best practices.	
Recommended literature: [1] Bruce Payette, Windows PowerShell in Action, Second Edition, ISBN 9781935182139, Manning 2011 [2] Richard Siddaway, PowerShell in Practice, ISBN: 9781935182009, Manning 2010	

[3] Shell Command Language. In: The Open Group Base Specification Issue 6. [online]
Available online <http://pubs.opengroup.org/onlinepubs/009695399/utilities/xcu_chap02.html>
[4] Steve Parker, Shell Scripting: Expert Recipes for Linux, Bash and more, ISBN:
978-1-1181-6633-8, Wrox 2011

Course language:
English

Notes:

Course assessment

Total number of assessed students: 66

A	B	C	D	E	FX
66.67	21.21	3.03	3.03	0.0	6.06

Provides: RNDr. Róbert Novotný, PhD.

Date of last modification: 03.05.2015

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ PRIS/15		Course name: Software and information system			
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.					
Prerequisites: ÚINF/ASU1/15,(ÚINF/TVP1/15 and leboÚINF/TVP1/21),ÚINF/PMO1/15,ÚINF/SWI1b/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 28					
A	B	C	D	E	FX
25.0	17.86	35.71	10.71	10.71	0.0
Provides:					
Date of last modification: 21.08.2018					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ SWI1a/15		Course name: Software engineering			
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.					
Prerequisites: ÚINF/DBS1a/15 and leboÚINF/DBdi/15					
Conditions for course completion:					
Learning outcomes: To provide information concerning the principal activities related to the development of software products.					
Brief outline of the course: System, subsystem, software system. Software processes. Introduction to project management. Requirements gathering. Software modelilng. Software architectures. Software development methodologies. Verification and validation. Resource management.					
Recommended literature: 1. BERKUN, S. The Art Of Project Management. O Reilly, 2005. 2. BJORNER, D. Software engineering 1,2,3. Springer-Verlag Berlin, 2006. 3. SOMMERVILLE, I. Software Engineering. Addison-Wesley, 2007.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 294					
A	B	C	D	E	FX
18.03	20.75	20.41	18.37	21.09	1.36
Provides: prof. RNDr. Gabriel Semanišin, PhD., Mgr. Alexander Szabari, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ SWI1b/15		Course name: Software engineering			
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: 5.					
Course level: I.					
Prerequisites: ÚINF/SWI1a/15					
Conditions for course completion:					
Learning outcomes: To learn principles and to developed fundamental skills concerning software modelling, development and implementation.					
Brief outline of the course: Software modelling in UML - the syntax and the semantics of UML diagrams. Foundation of Model Driven Architecture. Selected aspects of project management. Selected legal aspects of SW engineering. Pattern design.					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 255					
A	B	C	D	E	FX
45.88	20.0	11.76	7.84	13.33	1.18
Provides: Mgr. Alexander Szabari, PhD., prof. RNDr. Gabriel Semanišin, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ BZP1a/15	Course name: Special seminar to bachelor thesis
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: 5.	
Course level: I.	
Prerequisites: ÚINF/PBS/15	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature: 1. KATUŠČÁK, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 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. Special and research literature connected to Bachelor theses according to recommendations of supervisor.	
Course language:	
Notes:	
Course assessment Total number of assessed students: 130	
abs	n
96.15	3.85
Provides: RNDr. Ľubomír Antoni, PhD.	
Date of last modification: 26.01.2021	
Approved: prof. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ BZP1b/15	Course name: Special seminar to bachelor thesis
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: 6.	
Course level: I.	
Prerequisites: ÚINF/BZP1a/15	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature: 1. KATUŠČÁK, D.: Ako písať vysokoškolské a kvalifikačné práce, 2. vydanie Bratislava, 1998 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. Special and research literature connected to Bachelor theses according to recommendations of supervisor.	
Course language:	
Notes:	
Course assessment Total number of assessed students: 108	
abs	n
99.07	0.93
Provides: RNDr. Ľubomír Antoni, PhD.	
Date of last modification: 26.01.2021	
Approved: prof. RNDr. Gabriel Semanišin, 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: combined, present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 1.	
Course level: I., I.II., II.	
Prerequisites:	
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 unfitnes. 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:	
Notes:	

Course assessment							
Total number of assessed students: 14050							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.48	0.07	0.0	0.0	0.0	0.04	7.51	3.9
Provides: Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
Date of last modification: 18.03.2019							
Approved: prof. RNDr. Gabriel Semanišin, 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: combined, present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: I., I.II., II.	
Prerequisites:	
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 unfitnes. 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:	
Notes:	

Course assessment							
Total number of assessed students: 11330							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.75	0.56	0.02	0.0	0.0	0.05	9.87	3.75
Provides: Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
Date of last modification: 18.03.2019							
Approved: prof. RNDr. Gabriel Semanišin, 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: combined, present							
Number of ECTS credits: 2							
Recommended semester/trimester of the course: 3.							
Course level: I., I.II., II.							
Prerequisites:							
Conditions for course completion:							
Learning outcomes:							
Brief outline of the course:							
Recommended literature:							
Course language:							
Notes:							
Course assessment Total number of assessed students: 8383							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
90.11	0.05	0.01	0.0	0.0	0.02	4.04	5.76
Provides: Mgr. Marcel Čurgali, Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
Date of last modification: 03.05.2015							
Approved: prof. RNDr. Gabriel Semanišin, 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: combined, present							
Number of ECTS credits: 2							
Recommended semester/trimester of the course: 4.							
Course level: I., I.II., II.							
Prerequisites:							
Conditions for course completion:							
Learning outcomes:							
Brief outline of the course:							
Recommended literature:							
Course language:							
Notes:							
Course assessment Total number of assessed students: 5101							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.2	0.29	0.04	0.0	0.0	0.0	6.76	7.7
Provides: Mgr. Marcel Čurgali, Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
Date of last modification: 03.05.2015							
Approved: prof. RNDr. Gabriel Semanišin, PhD.							

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ MSU/07		Course name: Statistical Methods of Data Analysis			
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: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Exam					
Learning outcomes: Introduction to probability theory and mathematical statistics.					
Brief outline of the course: General introduction to theory of probability, random processes and mathematical statistics.					
Recommended literature: 1) L. Lyons, Statistics for Nuclear and Particle Physics, CUP, 1989. 2) L. Lyons, A Practical Guide to Data Analysis for Physical Science Students, CUP, 1991. 3) J.R. Taylor, An Introduction to Error Analysis: The Study of Uncertainties in Physical Measurements, University Science Books, 1997.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 85					
A	B	C	D	E	FX
20.0	12.94	7.06	7.06	52.94	0.0
Provides: doc. RNDr. Jozef Urbán, CSc., doc. RNDr. Adela Kravčáková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ SXM1/15		Course name: Structure formats and representation of data			
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.					
Prerequisites:					
Conditions for course completion: Evaluation of partial assignments within larger project. Evaluation of multiple assignments corresponding to learning blocks.					
Learning outcomes: Become acknowledged with theoretical concepts and methodologies with structured and semistructured data. Acquire programming skills with implementations of these concepts.					
Brief outline of the course: Representation of semi-structured data in XML, valid and well-formed XML document. XML parsers: DOM, SAX, StAX. Java API of XML parsers. Schemas for XML documents: DTD, XML Schema. Addressing in XML: XPath. Transformations of XML documents: XSLT. Other formats for semistructured data: JSON, YAML. API for data binding in Java: Jackson (JSON), SnakeYAML (YAML), JAXB (XML).					
Recommended literature: 1. Eliotte "Rusty" Harold. XML Bible, Gold Edition. Wiley, 2001. ISBN 978-0764548192. 2. Grigoris Antoniou, Frank Van Harmelen. A Semantic Web Primer, Second Edition. MIT Press, 2008. ISBN 978-0262012423. 3. Michael Kay. XSLT 2.0 Programmer's Reference, 3rd Edition. Wrox, 2004. ISBN: 978-076456909.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 73					
A	B	C	D	E	FX
32.88	21.92	20.55	13.7	10.96	0.0
Provides: Mgr. Alexander Szabari, PhD.					
Date of last modification: 01.06.2015					

Approved: prof. RNDr. Gabriel Semanišin, 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: 6.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 171					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides:					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, 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: Per study period: 36s Course method: combined, present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisites:	
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:	
Notes:	

Course assessment	
Total number of assessed students: 153	
abs	n
45.75	54.25
Provides: Mgr. Dávid Kaško, PhD.	
Date of last modification: 18.03.2019	
Approved: prof. RNDr. Gabriel Semanišin, PhD.	

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: combined, present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisites:	
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:	
Notes:	

Course assessment	
Total number of assessed students: 393	
abs	n
44.53	55.47
Provides: MUDr. Peter Dombrovský, Mgr. Marek Valanský	
Date of last modification: 15.03.2019	
Approved: prof. RNDr. Gabriel Semanišin, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ SLO1a/15		Course name: Symbolic logic			
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: 4.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: To understand basic notions of sentence and predicate logic - sentence, sentence scheme, provability, satisfiability, term, formula.					
Brief outline of the course: Predicate logic – logic language, syntax and semantics, term, formula. Axioms, proof, provability. Interpretation, truth, model. Correctness of the predicate logic.					
Recommended literature: GOLDSTERN M., JUDAH H.: The Incompleteness Phenomenon, A New Course in Mathematical Logic, A K Peters, Wellesley, Massachusetts, 1995 http://cs.ics.upjs.sk/~krajci/skola/vyucba/ucebneTexty/logika/logika.pdf					
Course language:					
Notes:					
Course assessment Total number of assessed students: 394					
A	B	C	D	E	FX
24.87	9.9	12.44	11.68	27.92	13.2
Provides: prof. RNDr. Stanislav Krajčí, PhD., RNDr. Ondrej Krídlo, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ TVP1/15	Course name: Testing and verification of programs
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: 6.	
Course level: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course: Verification of programs. Introduction to a proving of program correctness. McCarthy function 91, a proof of a developed program correctness, basic definitions of partial and total program correctness. Mathematical background for a proving of program correctness. Predicate calculus, a repetition of a basic knowledge. Syntax, semantics, valid well-formed formulas, natural deduction, the resolution method. Floyd method for a proving of program correctness. Flowchart programs, a proof of a partial correctness, a proof of a program termination. Hoare method for a proving of program correctness. Programming language J0, axioms and the verification rules of Hoare axiomatic system, a partial and total correctness of programs, a program termination. Examples of proofs the partial and total correctness of programs. ***** Testing of programs. SELENIUM IDE plugin to Firefox. Installation of the plugin. The sequence of steps by the first test. Automated start of prepared test. Possibilities of test corrections. The class DefaultSelenium and its methods by test writing. Survey of the best methods in the class DefaultSelenium. Implementation of methods for tests writing. Selenium server. Installation Selenium Sever. Communication with selenium server. Loading tests. Causes of using loading tests. Jmeter as a one of possible loading tests. Test Case. Input data for a program testing prepared according to a flowchart program. SOnar. Survey of written code, mapping of duplicated procedures, misused procedures. Survey Junit Tests.	
Recommended literature: 1. Frade, M. J., and Pinto, J. S.: Verification Conditions for Source-level Imperative Programs. Techn. Report DI-CCTC-08-01, 2008, Computer Science and Technology Center, Braga – Portugal 2. Manna, Z. and Pnueli, A.: Temporal Verification of Reactive Systems: Progress. Draft, 1996	

3. Almeida, J. B., Frade, M. J., Pinto, J. S. and Melo de Sousa, S.: Rigorous Software Development: An Introduction to Program Verification, Springer Verlag, 2011.
4. Manna, Z.: Mathematical Theory of Computation, McGraw-Hill, 1974, Slovak translation: SNTL, Praha, 1981.

Course language:

Notes:

Course assessment

Total number of assessed students: 43

A	B	C	D	E	FX
18.6	25.58	25.58	11.63	18.6	0.0

Provides: doc. RNDr. Gabriela Andrejková, CSc., Mgr. Alexander Szabari, PhD.

Date of last modification: 18.10.2016

Approved: prof. RNDr. Gabriel Semanišin, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ ZPIa/18		Course name: Thesis in 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: 2					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 49					
A	B	C	D	E	FX
79.59	8.16	8.16	2.04	0.0	2.04
Provides: RNDr. Peter Gurský, PhD., RNDr. Miroslav Opiela, PhD., RNDr. Ľubomír Antoni, PhD., RNDr. Juraj Šebej, PhD., RNDr. Tomáš Bajtoš, RNDr. Zuzana Bednárová, PhD., prof. RNDr. Stanislav Krajčí, PhD., RNDr. Ondrej Krídlo, PhD., RNDr. František Galčík, PhD., RNDr. Rastislav Krivoš-Belluš, PhD., MSc. Terézia Mézešová, Mgr. Alexander Szabari, PhD., doc. RNDr. Csaba Török, CSc., RNDr. JUDr. Pavol Sokol, PhD., doc. Ing. Norbert Kopčo, PhD., RNDr. Patrik Pekarčík, RNDr. Viliam Kačala, PhD., doc. RNDr. Gabriela Andrejková, CSc.					
Date of last modification: 17.06.2018					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ ZPIb/18		Course name: Thesis in 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: 2					
Recommended semester/trimester of the course: 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 33					
A	B	C	D	E	FX
72.73	12.12	9.09	0.0	3.03	3.03
Provides: RNDr. Ľubomír Antoni, PhD., RNDr. Tomáš Bajtoš, RNDr. Zuzana Bednárová, PhD., PaedDr. Ján Guniš, PhD., RNDr. Miroslav Opiela, PhD., MSc. Terézia Mézešová, RNDr. Ondrej Krídlo, PhD., RNDr. Rastislav Krivoš-Belluš, PhD., RNDr. Peter Gurský, PhD., RNDr. JUDr. Pavol Sokol, PhD., prof. RNDr. Stanislav Krajčí, PhD., doc. Ing. Norbert Kopčo, PhD., RNDr. Viliam Kačala, PhD., doc. RNDr. Csaba Török, CSc., RNDr. Patrik Pekarčík					
Date of last modification: 17.06.2018					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ TYS1/15	Course name: Typographical systems
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., 6.	
Course level: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes: To provide the basic information on principles for typesetting of documents containing mathematical formulas in Plain TeX, AMS-TeX, and LaTeX.	
Brief outline of the course: Typesetting of a plain text, special text symbols, using of text fonts. TeX macros. Enumerations in text and footnote command. Parameter setting determining the appearance of the pages. Typesetting of mathematical formulas in text and displays, aligning formulas. Definitions of TeX macros. Making tables and pictures. Definitions, theorems, and proofs in a mathematical document. Contents, bibliography, sections in a document.	
Recommended literature: 1. D. E. Knuth, The TeXbook, Computers and Typesetting, Addison-Wesley, Reading, Massachusetts, 1986. 2. M. Doob, Jemný úvod do TeXu, CSTUG, 1990; český preklad z "A Gentle Introduction to TeX" (text voľne prístupný v CTAN archíve). 3. O. Ulrych, AMS-TeX za 59 minút, (verzia 1.0), Praha, 1989. 4. J. Chlebíková, AMS-TeX (verzia 2.0), Bratislava, 1992. 5. M. Spivak, The Joy of TeX, Amer. Math. Soc., 1986. 6. L. Lamport, LaTeX: A Document Preparation System, Addison-Wesley, Massachusetts, 1986. 7. L. Lamport, MakeIndex: An index processor for LaTeX, 17 February 1987. 8. J. Rybička, LaTeX pro začátečníky, Konvoj, Brno, 1995. 9. H. Partl, E. Schlegl, I. Hyna, P. Sýkora, LaTeX – Stručný popis. 10. T. Oetiker, H. Partl, I. Hyna, E. Schlegl, M. Kocer, P. Sýkora, Ne příliš stručný úvod do systému LaTeX2e (neboli LaTeX2e v 73 minutách). 11. M. Goossens, F. Mittelbach, and A. Samarin, The LaTeX Companion, Addison-Wesley, Reading, Massachusetts, 1994. Kapitola 8 je voľne prístupná v TeX archívoch (ch8.pdf). 4 12. G. Grätzer, Math into LaTeX, 3rd edition, Birkhäuser, Boston, 2000.	
Course language: Slovak or english	

Notes:					
Course assessment Total number of assessed students: 246					
A	B	C	D	E	FX
47.97	18.29	19.51	6.5	6.91	0.81
Provides: prof. RNDr. Stanislav Krajči, PhD.					
Date of last modification: 10.02.2021					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ POS2/15	Course name: User environments of operating systems
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.	
Prerequisites:	
Conditions for course completion: - written final theoretical exam (score at least 50%), - written final practical exam (score at least 50%)	
Learning outcomes: To provide theoretical and practical background for studying computer science, by giving the necessary knowledge in the usage of Unix/Linux operating systems.	
Brief outline of the course: (1) Introduction to Unix/Linux systems (2) Linux ommand line (3) Text processing tools (4) Managing files (5) Managing users, groups and rights (6) Managing processes (7) Managing software and packages (8) Administering the system - system booting, jobs, logging (9) Basic networking (10) Managing network interfaces (11) Managing disk partitions	
Recommended literature: (1) LPIC-1 Linux Professional Institute Certification Study Guide Exam 101-400 and Exam 102-400 4th Edition (2) The Linux Documentation Project (https://www.tldp.org/) (3) The Linux Command Line, 2nd Edition: A Complete Introduction 2nd Edition	
Course language:	
Notes:	

Course assessment					
Total number of assessed students: 113					
A	B	C	D	E	FX
46.02	8.85	22.12	7.96	12.39	2.65
Provides: RNDr. JUDr. Pavol Sokol, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 14.01.2020					
Approved: prof. RNDr. Gabriel Semanišin, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science			
Course ID: ÚINF/ WBdi/15		Course name: Web and a development of user environment	
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., 4.			
Course level: I.			
Prerequisites:			
Conditions for course completion: Solving partial assignments and active participation in discussions in a virtual classroom. The course is realized in distance form.			
Learning outcomes: Create accessible and usable Web Sites, used the standards (X) HTML and CSS. Apply the rules for the page layout. Maintain website and use the basic procedures for their promotion.			
Brief outline of the course: Web Development using (X) HTML and CSS. Tools for web development. Standards of accessibility and usability of the web sites. Cycle of development web site and its promotion.			
Recommended literature: Basic sources for distance courses will be published in LMS Moodle. TITTEL, Ed a Jeff NOBLE. HTML, XHTML & CSS. 7th ed. Hoboken, NJ: Wiley, c2011, xx, 392 p. --For dummies. ISBN 04-709-1659-1. KRUG, Steve. <i>Nenuťte užívateľa premýšľať!: praktický průvodce testováním a opravou chyb použitelnost webu</i>. Vyd. 1. Brno: Computer Press, 2010, 165 s. ISBN 978-80-251-2923-4. Slovensko. Výnos Ministerstva financií Slovenskej republiky z 9. júna 2010 o štandardoch pre informačné systémy verejnej správy. In: <i>312/2010</i>. 2010. Dostupné z: http://informatizacia.sk/ext_dok-vynos_a_prilohy_2010-312/7431c			
Course language: slovak			
Notes:			
Course assessment Total number of assessed students: 33			
abs	n	neabs	z
60.61	39.39	0.0	0.0
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.			

Date of last modification: 27.03.2020

Approved: prof. RNDr. Gabriel Semanišin, PhD.