

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ ACL/03		Course name: Human Anatomy			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of credits: 5					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Written examination					
Learning outcomes: Anatomic systems of man.					
Brief outline of the course: Anatomic terminology, skeleton and muscles, gastrointestinal system, respiratory system, circulatory and lymphatic system, urogenital system, sensory organs, nervous system, ontogenesis of man.					
Recommended literature: Kahle, W., Leonhardt, H., Platzer, W. : Color Atlas and Textbook of Human Anatomy in 3 Volumes : Volume 1 : Locomotor System, Volume 2: Internal Organs and Volume 3: Nervous System and Sensory Organs Thieme Medical Publishers, Inc. New York, 1993 Anne M. R. Agur : Grant's atlas of anatomy. Williams et Wilkins, USA, 1991					
Course language:					
Course assessment Total number of assessed students: 1566					
A	B	C	D	E	FX
4.47	16.99	27.59	25.48	22.67	2.81
Provides: RNDr. Juraj Ševc, PhD., RNDr. Anna Alexovič Matiašová, PhD.					
Date of last modification: 24.02.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, 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 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:					
Course assessment Total number of assessed students: 789					
A	B	C	D	E	FX
24.46	18.12	23.83	18.38	10.01	5.2
Provides: Mgr. Alexander Szabari, PhD., prof. RNDr. Viliam Geffert, DrSc.					
Date of last modification: 06.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/AFJ1b/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 credits: 5					
Recommended semester/trimester of the course: 5.					
Course level: I., II.					
Prerequisites: ÚINF/AFJ1a/15					
Conditions for course completion: Test and oral examination.					
Learning outcomes: To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.					
Brief outline of the course: Chomsky and Greibach normal forms of context free gramars. Pushdown automata. Pumping lemma. Closure properties of context free and deterministic context free languages. Context sensitive grammars and linearly-bounded Turing machines. Phrase-structure grammars and Turing machines. Post correspondence problem. Undecidable problems in the theory of formal 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:					
Course assessment Total number of assessed students: 525					
A	B	C	D	E	FX
37.9	14.86	19.81	18.29	6.48	2.67
Provides: prof. RNDr. Viliam Geffert, DrSc., Mgr. Alexander Szabari, PhD., RNDr. Zuzana Bednárová, PhD.					
Date of last modification: 06.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ ALG3b/10		Course name: Algebra II for informaticians and physicists			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 4 / 2 Per study period: 56 / 28 Course method: present					
Number of credits: 7					
Recommended semester/trimester of the course: 4.					
Course level: I., II.					
Prerequisites: ÚMV/ALGa/10					
Conditions for course completion: Exam					
Learning outcomes: To provide deeper knowledge on vector spaces, linear transformations and Euclidean spaces.					
Brief outline of the course: Vector spaces, subspaces. A basis, a dimension and a characterization of n-dimensional vector spaces. The rank of a matrix. Linear transformations and their matrices. Operations with linear transformations, matrices of sums and compositions of linear transformations. Regular linear transformations, regular matrices. Similar matrices. Characteristic vectors and characteristic values of linear transformations. Affine spaces, subspaces and their positions. Euclidean spaces, the distance of subspaces. Conics and quadrics.					
Recommended literature: A. F. Beardon: Algebra and Geometry, Cambridge University Press, 2005 G. Birkhoff, S. Mac Lane: A Survey of Modern Algebra, New York 1965					
Course language: Slovak					
Course assessment Total number of assessed students: 324					
A	B	C	D	E	FX
11.73	8.95	9.88	15.43	40.43	13.58
Provides: doc. RNDr. Roman Soták, PhD., RNDr. Mária Maceková, PhD.					
Date of last modification: 22.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPE/ ALP/06		Course name: Alternative Education			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 143					
A	B	C	D	E	FX
66.43	29.37	0.7	1.4	0.7	1.4
Provides: PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petriková, PhD.					
Date of last modification: 07.02.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ APS1/15		Course name: Applied probability and statistics			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of credits: 5					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Acquired basic concepts and techniques of probability theory, statistics and corresponding software.					
Brief outline of the course: Events, probability. Laws of probability distributions, characteristics of location, variability and dependency. Samples, estimates and tests of hypotheses. Modeling of dependencies, noise and smoothing. Bayes theory of decision. Pseudorandom values and Monte Carlo method.					
Recommended literature: - Cs. Török: Úvod do teórie pravdepodobnosti a matematickej štatistiky, Košice, 1992 - M.R.Spiegel, J.J.Schiller, R.A.Srinivasan, Probability and Statistics, McGraw Hill, 2009 - J. Maindonald, W.J. Braun, Data Analysis and Graphics Using R – an Example-Based Approach, CAMBRIDGE UNIVERSITY PRESS, 2010					
Course language:					
Course assessment Total number of assessed students: 42					
A	B	C	D	E	FX
14.29	16.67	16.67	11.9	38.1	2.38
Provides: doc. RNDr. Csaba Török, CSc.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 4					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites: (ÚINF/PAZ1a/15 and ÚINF/PAZ1b/15) or ÚINF/ePAZ1b/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 93					
A	B	C	D	E	FX
8.6	5.38	15.05	22.58	45.16	3.23
Provides: RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 12.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ BDD/05		Course name: Biology of Children and Adolescents			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 0 Per study period: 28 / 0 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 4., 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Written test					
Learning outcomes: The aim of the subject is to gain the particular level of knowledge about human body and its development. It is necessary for the understanding of specific biological characteristics of children and adolescents linked to development.					
Brief outline of the course: Human ontogenesis. Postnatal development. Age specific features of skeletal and muscular, circulatory, respiratory, gastrointestinal and urinary systems. Reproductive system. Endocrine system. Nervous system. Age specifics of selected diseases and drug dependence arise. Human population and environment.					
Recommended literature: Drobný I., Drobná M.: Biológia dieťaťa pre špeciálnych pedagógov I. a II. Bratislava, PdF UK, 2000 Lipková V.: Somatický a fyziologický vývoj dieťaťa. Osveta Bratislava, 1980 Malá H., Klementa J.: Biológia detí a dorastu. Bratislava, SPN, 1989					
Course language:					
Course assessment Total number of assessed students: 1337					
A	B	C	D	E	FX
31.56	23.04	17.5	18.03	9.42	0.45
Provides: doc. RNDr. Monika Kassayová, CSc.					
Date of last modification: 16.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/ BKP/14	Course name: Bachelor Project
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present	
Number of credits: 2	
Recommended semester/trimester of the course: 5.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Submission of the bachelor project, the defense of the project and acceptance of its content by the supervisor.	
Learning outcomes:	
Brief outline of the course:	
Recommended literature: 1. Scientific papers related to the topic of the bachelor project. 2. Directive No. 1/2011 of the rector UPJS in Košice.	
Course language:	
Course assessment Total number of assessed students: 56	
abs	n
100.0	0.0
Provides:	
Date of last modification: 24.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/BKP/14	Course name: Bachelor Project
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present	
Number of 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:	
Course assessment Total number of assessed students: 2	
abs	n
100.0	0.0
Provides:	
Date of last modification: 09.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ BO1/15		Course name: Botany 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 credits: 4					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Introduction to biology of lower plants.					
Brief outline of the course: Morphology, cytology, ecology, evolution and taxonomy of all main groups of lower plants. Cyanobacteria and algae (Cyanophyta, Prochlorophyta, Glaucophyta, Rhodophyta, Heterocontophyta, Haptophyta, Cryptophyta, Dinophyta, Euglenophyta, Chlorarachniophyta, Chlorophyta). Slime moulds (Plasmodiophoromycota, Dictyosteliomycota, Acrasiomycota, Labyrinthulomycota). Fungi (Oomycota, Hyphochytriomycota, Chytridiomycota, Zygomycota, Ascomycota, Basidiomycota). Lichens. Bryophytes. Literature: Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd.					
Recommended literature: Bačkor, M.: Základy systému nižších rastlín I. (sinice, riasy a slizovky). UPJŠ, Košice 2002; Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd. Van den Hoek, C. a kol. 1995: Algae, an introduction to phycology, Záhorovská E. a kol.: Systém a evolúcia nižších rastlín. UK Bratislava 1998					
Course language:					
Course assessment Total number of assessed students: 177					
A	B	C	D	E	FX
28.81	15.82	24.29	16.95	10.73	3.39
Provides: prof. RNDr. Martin Bačkor, DrSc., RNDr. Michal Goga, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD. Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ BO1/03		Course name: Botany 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 credits: 5					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Introduction to biology of lower plants.					
Brief outline of the course: Morphology, cytology, ecology, evolution and taxonomy of all main groups of lower plants. Cyanobacteria and algae (Cyanophyta, Prochlorophyta, Glaucophyta, Rhodophyta, Heterocontophyta, Haptophyta, Cryptophyta, Dinophyta, Euglenophyta, Chlorarachniophyta, Chlorophyta). Slime moulds (Plasmodiophoromycota, Dictyosteliomycota, Acrasiomycota, Labyrinthulomycota). Fungi (Oomycota, Hyphochytriomycota, Chytridiomycota, Zygomycota, Ascomycota, Basidiomycota). Lichens. Bryophytes. Literature: Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd.					
Recommended literature: Bačkor, M.: Základy systému nižších rastlín I. (sinice, riasy a slizovky). UPJŠ, Košice 2002; Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd. Van den Hoek, C. a kol. 1995: Algae, an introduction to phycology, Záhorovská E. a kol.: Systém a evolúcia nižších rastlín. UK Bratislava 1998					
Course language:					
Course assessment Total number of assessed students: 1599					
A	B	C	D	E	FX
13.32	18.82	25.27	20.39	19.45	2.75
Provides: prof. RNDr. Martin Bačkor, DrSc., RNDr. Michal Goga, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD. Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/BOT1/15		Course name: Botany 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 credits: 4					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites: ÚBEV/TCB1/03					
Conditions for course completion: Practical and theoretical exam.					
Learning outcomes: To obtain of survey in knowledge and methods in systematics of tracheophytes.					
Brief outline of the course: History and present time of plant systematics. Approaches to plant classification. Principles of cladistics and molecular taxonomy. Tracheophytes, clades of lycophytes, ferns and allies. Seed plants. Gymnosperms and their evolution: cycads, ginkgos, conifers, gnetophytes. Angiosperms. Evolution and general description. Basal clades and Magnoliid clade. Monocots. "Basal tricolpates" and Caryophyllid clade. Rosid and asterid clades of tricolpates. Practices are devoted to study of the most important families of tracheophytes. Fossil evidence of ferns and allies from Palaeozoic age. Tropical a subtropical flora. Ferns. Practical study of conifers. Selected families of angiosperms. (<i>Magnoliaceae, Araceae, Liliaceae, Amaryllidaceae, Cyperaceae, Poaceae, Ranunculaceae, Papaveraceae, Caryophyllaceae, Euphorbiaceae, Violaceae, Fabaceae, Rosaceae, Betulaceae, Brassicaceae, Boraginaceae, Plantaginaceae, Lamiaceae, Apiaceae, Asteraceae</i>). Study of other seed plants, plant identification according to key.					
Recommended literature: Mártonfi P.: Systematika cievnatých rastlín, 2. vydanie. - ES UPJŠ, Košice, 2006. Mártonfi P.: Systematika cievnatých rastlín. - ES UPJŠ, Košice, 2003. Judd W. S., Campbell Ch. S., Kellogg E. A. & Stevens P. F., Donoghue M. J.: Plant Systematics. A phylogenetic Approach, 2nd ed. - Sinauer Associates, Sunderland, 2002. Dostál J., Červenka M.: Veľký kľúč na určovanie rastlín I. a II. - SPN, Bratislava, 1991 a 1992.					
Course language:					
Course assessment Total number of assessed students: 234					
A	B	C	D	E	FX
14.53	13.25	27.35	21.37	13.68	9.83
Provides: prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčík, PhD.					

Date of last modification: 24.02.2017
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/BOT1/03		Course name: Botany 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 credits: 5					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites: ÚBEV/TCB1/03					
Conditions for course completion: Practical and theoretical exam.					
Learning outcomes: To obtain of survey in knowledge and methods in systematics of tracheophytes.					
Brief outline of the course: History and present time of plant systematics. Approaches to plant classification. Principles of cladistics and molecular taxonomy. Tracheophytes, clades of lycophytes, ferns and allies. Seed plants. Gymnosperms and their evolution: cycads, ginkgos, conifers, gnetophytes. Angiosperms. Evolution and general description. Basal clades and Magnoliid clade. Monocots. "Basal tricolpates" and Caryophyllid clade. Rosid and asterid clades of tricolpates. Practices are devoted to study of the most important families of tracheophytes. Fossil evidence of ferns and allies from Palaeozoic age. Tropical a subtropical flora. Ferns. Practical study of conifers. Selected families of angiosperms. (<i>Magnoliaceae, Araceae, Liliaceae, Amaryllidaceae, Cyperaceae, Poaceae, Ranunculaceae, Papaveraceae, Caryophyllaceae, Euphorbiaceae, Violaceae, Fabaceae, Rosaceae, Betulaceae, Brassicaceae, Boraginaceae, Plantaginaceae, Lamiaceae, Apiaceae, Asteraceae</i>). Study of other seed plants, plant identification according to key.					
Recommended literature: Mártonfi P.: Systematika cievnatých rastlín, 2. vydanie. - ES UPJŠ, Košice, 2006. Mártonfi P.: Systematika cievnatých rastlín. - ES UPJŠ, Košice, 2003. Judd W. S., Campbell Ch. S., Kellogg E. A. & Stevens P. F., Donoghue M. J.: Plant Systematics. A phylogenetic Approach, 2nd ed. - Sinauer Associates, Sunderland, 2002. Dostál J., Červenka M.: Veľký kľúč na určovanie rastlín I. a II. - SPN, Bratislava, 1991 a 1992.					
Course language:					
Course assessment Total number of assessed students: 1388					
A	B	C	D	E	FX
10.3	12.03	17.29	19.96	24.78	15.63
Provides: prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčík, PhD.					

Date of last modification: 24.02.2017
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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:					
Course assessment Total number of assessed students: 61					
A	B	C	D	E	FX
40.98	22.95	16.39	11.48	6.56	1.64
Provides:					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/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 credits: 4					
Recommended semester/trimester of the course:					
Course level: I.					
Prerequisites: ((ÚBEV/CYT1/02 or ÚBEV/CYT1/15) and ÚBEV/GE1/10 and (ÚBEV/MOB1/03 or ÚBEV/MOB1/15)) or (ÚBEV/FZ1/10 and (ÚBEV/HIS1/03 or ÚBEV/HIS1/15) and (ÚBEV/ZO1/03 or ÚBEV/ZO1/15) and (ÚBEV/ZOO1/03 or ÚBEV/ZOO1/15)) or ((ÚBEV/BO1/03 or ÚBEV/BO1/15) and (ÚBEV/BOT1/03 or ÚBEV/BOT1/15) and ÚBEV/FR1/10)					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 130					
A	B	C	D	E	FX
47.69	29.23	16.15	6.15	0.77	0.0
Provides:					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/BS1/03		Course name: Biostatistics			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of credits: 6					
Recommended semester/trimester of the course: 3., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Recognition. Recognition.					
Learning outcomes: To provide the students with knowledge on basic principles of statistic methods used in biology and their scope of application					
Brief outline of the course: Sources and theoretical background of biostatistics. Basic principles of the probability theory. Descriptive statistics: variables, measures of mean value and variability of data. Theoretical and empirical distributions. Experimental sampling from normal distributions. Testing of hypotheses. One-way and multiple analysis of variance. Tests for multiple comparisons. Regression analysis. Correlations. Non-parametrical methods. Time series. Analysis of quantitative data.					
Recommended literature: Hassard, T. H.: Understanding biostatistics. Mosby Year Book, 1991 Snedecor, G.W., Cochran, W.G.: Statistical methods. The Iowa state university, Ames, 1972. R.Forthofer, E.S.Lee, M.Hernandez: Biostatistics. Elsevier, Amsterdam..., 2007					
Course language:					
Course assessment Total number of assessed students: 164					
A	B	C	D	E	FX
3.05	9.76	17.07	20.12	34.15	15.85
Provides: prof. RNDr. Beňadik Šmajda, CSc.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ BSB/15		Course name: Biology			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of credits: 1					
Recommended semester/trimester of the course:					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 110					
A	B	C	D	E	FX
22.73	20.91	25.45	16.36	13.64	0.91
Provides:					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/BSI1a/15		Course name: Seminar in informatics			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Presentation of algorithms for problems of a higher complexity. Presentation of results connecting to the bachelor theses, known and own results.					
Learning outcomes: To inform students about new results in informatics with the goal using them in bachelor theses.					
Brief outline of the course: The seminar has a connection to the bachelor theses and to the repetitorium in informatics. Students present results of their work once in semester at least.					
Recommended literature: Sources of problems: www.ksp.sk www.ksp.sk/MOP/ Special research literature according to bachelor theses.					
Course language:					
Course assessment Total number of assessed students: 202					
A	B	C	D	E	FX
19.31	17.33	25.74	17.82	17.82	1.98
Provides: doc. RNDr. Gabriela Andrejková, CSc., RNDr. Zuzana Bednárová, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/BSI1b/15		Course name: Seminar in informatics			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: To inform students about new results in informatics with the goal using them in bachelor theses. To repeat important knowledges in informatics.					
Brief outline of the course: The seminar has a connection to the bachelor theses and to the repetitorium in informatics. Students present results of their work once in semester at least. To get credits, it is necessary to get the developed number of points from repetitorium.					
Recommended literature: Sources of problems: www.ksp.sk www.ksp.sk/MOP/ Special research literature according to bachelor theses.					
Course language:					
Course assessment Total number of assessed students: 123					
A	B	C	D	E	FX
26.02	21.14	26.02	15.45	9.76	1.63
Provides: RNDr. Zuzana Bednárová, PhD., doc. RNDr. Gabriela Andrejková, CSc.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/BSSMI/15		Course name: Essentials of Informatics			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of credits: 1					
Recommended semester/trimester of the course:					
Course level: I.					
Prerequisites: ÚINF/PSIN/15 and ÚINF/PAZ1b/15 and ÚINF/OSY1/15 and ÚINF/AFJ1a/15 and ÚINF/SLO1a/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 4					
A	B	C	D	E	FX
0.0	25.0	0.0	0.0	75.0	0.0
Provides:					
Date of last modification: 07.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ CYT1/15		Course name: Cytology			
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 credits: 6					
Recommended semester/trimester of the course: 1.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Oral examination					
Learning outcomes: To provide the students with knowledge of basic principles of cell microscopic and submicroscopic structure and function.					
Brief outline of the course: Levels of living system organization. Characteristics and comparison of prokaryotic and eukaryotic plant and animal cells. Microscopic, submicroscopic and molecular structure and function of individual cell components. Nucleus and cell division.					
Recommended literature: Alberts, B., Bray, D., Lewis, J. et al.: Molecular Biology of the Cell. Garland Publishing Inc., New York, London, 1994					
Course language:					
Course assessment Total number of assessed students: 3658					
A	B	C	D	E	FX
5.52	15.17	24.52	23.15	26.68	4.95
Provides: RNDr. Rastislav Jendželovský, PhD., RNDr. Zuzana Jendželovská, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 5					
Recommended semester/trimester of the course: 3.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Acquired basic concepts and techniques of relational database theory and corresponding software.					
Brief outline of the course: Data models. Languages for defining and manipulating data (DDL, DML). Tables, attributes and integrity constraints. Queries: select, where, group by, aggregate and system functions. Nested queries and several tables: join, union, primary, foreign key. Relational algebra.					
Recommended literature: - S. Krajčí: Databázové systémy, UPJŠ, 2005 - J. ULLMAN: Principles of database and knowledge – base systems, Comp. Sci. Press., 1988 - R. Ramakrishnan, J. Gehrke, Database Management Systems, McGraw-Hill, 2003 - Itzik Ben-Gun, Microsoft SQL Server 2012 T-SQL Fundamentals, O'Reilly, 2012 - HENDERSON, K.: The Guru's Guide to Transact SQL, Addison Wesley Professional, 2000					
Course language:					
Course assessment Total number of assessed students: 791					
A	B	C	D	E	FX
11.38	8.98	17.57	22.25	32.36	7.46
Provides: doc. RNDr. Csaba Török, CSc., Mgr. Viliam Kačala					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 6					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites: ÚINF/DBS1a/15 or ÚINF/DBdi/15					
Conditions for course completion:					
Learning outcomes: Mastering the basic techniques of effective design, normalization and programmable extension of relational databases.					
Brief outline of the course: Database modelling. Functional dependency and normalization. Recursion and transitive closure. Cursors. Stored procedures. Indices and B-trees. Triggers. Transaction. XML, SDL, XPath, XQuery.					
Recommended literature: - S. Krajčí: Databázové systémy, UPJŠ, 2005 2. J. - Date C.J., Database Design and Relational Theory, O'Reilly, 2012 - Atkinson, P., Vierra, R., BEGINNING MICROSOFT SQL SERVER 2012 PROGRAMMING, John Wiley - Wrox, 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:					
Course assessment Total number of assessed students: 678					
A	B	C	D	E	FX
10.32	8.11	11.5	23.01	36.28	10.77
Provides: doc. RNDr. Csaba Török, CSc., Mgr. Viliam Kačala					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KFaDF/DF2p/03		Course name: History of Philosophy 2 (General Introduction)			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present					
Number of credits: 4					
Recommended semester/trimester of the course: 6.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 734					
A	B	C	D	E	FX
60.63	13.9	12.67	8.72	3.41	0.68
Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof., Doc. PhDr. Peter Nezník, CSc., PhDr. Katarína Mayerová, PhD., doc. Mgr. Róbert Stojka, PhD.					
Date of last modification: 24.02.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DGS/15	Course name: Students` Digital Literacy
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present	
Number of credits: 2	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisites:	
Conditions for course completion: continuous assessment and final project	
Learning outcomes: To acquire an overview of the current possibilities of digital technology to develop skills and competencies with emphasis on the area of communication, social interaction and personal. To acquire basic digital skills for working with advanced technologies (mobile phone, tablet, laptop, social media, online webtechnologies). To understand the value of existing advanced technologies for better and more effective learning, work and active life in higher education, lifelong learning and further career prospects.	
Brief outline of the course: Introduction to the problems of current, commonly available digital technology. Tools for access to online information source (mobile applications for access to information systems, databases, data books). Tools for collecting, generating direct information and data and its subsequent analysis and visualization. Tools for providing and sharing of electronic content (cloud technology - Google Drive, Youtube, Google+, Skydrive, Dropbox). Tools for communication, discussion and collaborative activities. Legal work with digital technologies and resources, plagiarism, critical evaluation of digital resources. Security, privacy, digital ethics and etiquette, digital citizenship.	
Recommended literature: 1. Bruff, D. (2009). Teaching with classroom response systems: Creating active learning environments. San Francisco: Jossey-Bass. 2. Byrne, R. (2012). Google Drive and Docs for Teachers. Free Tech for Teachers. 3. Kawasaki, G. (2012). What the Plus! Google+ for the Rest of Us. Amazon igital Services. 4. Kolb, L. (2011). Cell Phones in the Classroom: A Practical Guide for Educators. International Society for Technology in Education.	
Course language: Slovak	
Course assessment Total number of assessed students: 104	

abs	n
97.12	2.88
Provides: doc. RNDr. Stanislav Lukáč, PhD., doc. RNDr. Jozef Hanč, PhD., doc. RNDr. Ľubomír Šnajder, PhD.	
Date of last modification: 22.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/EDS/15	Course name: Educational software
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 credits: 2	
Recommended semester/trimester of the course: 5.	
Course level: I.	
Prerequisites:	
Conditions for course completion: 1 Preparation of interim assignments: a) Worksheet for student (with custom graphics) b) Multimedia educational presentation (with pictures, animations and sounds) c) Interactive educational quiz (with several types of quiz items) d) Methodological guidance on the use of interactive applications in teaching selected topic of chosen school subject. 2 Creation and presentation of final project on the use of educational software in education.	
Learning outcomes: 1. To acquire an overview of the educational software types and its exploitation in education. 2. To gain or enhance basic skills in working with: a) presentation software, programs for creation and editing images, animations, diagrams, sounds, concept maps, b) programs for creation of quizzes, questionnaires, voting, c) simulation and modeling software, d) selected subject-oriented educational programs, 3. To create and present a final project on the use of educational software in education.	
Brief outline of the course: Educational software types. Onlilne educational sources and tools. Multimedia processing. Tools for creation of teaching aids.	
Recommended literature: 1. Digitálna gramotnosť učiteľa : učebný materiál- modul 1 / Rastislav Adámek ... [et al.]. - Košice : Ústav informácií a prognóz školstva, 2009. - 80 s. - ISBN 9788080861193(brož.). 2. Moderná didaktická technika v práci učiteľa : učebný materiál modul 2 / Rastislav Adámek ... [et al.] ; recenzenti Viliam Fedák, Anton Lavrin. - Košice : Elfa, 2010. - 200 s. - ISBN 9788080861353 (brož.). 3. Web, Multimédia / Martin Homola ... [et al.]. - Bratislava : Štátny pedagogický ústav, 2010. - 68 s. - Č. projektu: ŠPVV ĎVUi 26120130001. - ISBN 9788081180514 (brož.).	
Course language:	
Notes:	

Content of lessons will be flexibly adapted to the field of study of learners. Language learners will be able to work more with pictures and sounds, physicists with simulation programs, mathematicians with mathematical software, etc.					
Course assessment Total number of assessed students: 25					
A	B	C	D	E	FX
56.0	24.0	16.0	0.0	4.0	0.0
Provides: doc. RNDr. Ľubomír Šnajder, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ FG1/03		Course name: Phytogeography			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present					
Number of credits: 5					
Recommended semester/trimester of the course:					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: Written work. Exam.					
Learning outcomes: To obtain theoretical and practical knowledge from phytogeography.					
Brief outline of the course: History of phytogeography. Plants and environment. Chorology, area, area disjunctions, relics, endemites, vicariancy, floral elements. Main course of florogenesis since paleozoic to quaternary ages. Postglacial evolution of Slovak vegetation. Regional phytogeography of Earth. Vegetation geography: from tropical rainforests to tundras. Changes of earth vegetation and their study. Geographical origin of cultivated plants. Practices: Fieldworks. Preparing of maps. Phytogeographical division of Slovakia. Students seminar works on phytogeography.					
Recommended literature: Hendrych R.: Fytografie. - SPN, Praha 1984. Brown J. H., Lomolino M. V.: Biogeography. - Sinauer Associates, Sunderland, 1998.					
Course language:					
Course assessment Total number of assessed students: 324					
A	B	C	D	E	FX
39.81	21.91	21.3	8.33	7.72	0.93
Provides: prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčík, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD. Guaranteedprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ FR1/10		Course name: Plant Physiology			
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 credits: 6					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites: ÚBEV/VB1/01					
Conditions for course completion:					
Learning outcomes: Overview of all important physiological processes in plant organisms.					
Brief outline of the course: Water in plan, mineral nutrition, photosynthesis, pholem transport, respiration, lipid biosynthesis, heterotrophy, metabolism of macronutrients, secondary metabolism, growth and development, plant hormones, photoreceptors, dormancy, germination, flowering, plant movements, stress physiology Lab practicals: Measurements of water potential, Quantitative analyses of nutrients in dust. Separation of assimilation pigments by TLC. Quantitative analyses of chlorophyll a and b. Biotest of cytokinins. Qualitative and quantitative analyses of sugars. HPLC separation of glucose and fructose. Measurements of respiration by selective electrode. Measurement of total nitrogen by Kjeldahl method. Qualitative analyses of proteins. Activity of some enzymes in potato and pea. Colour of anthocyanins at different pH. Measurement of silica level by distillation method. Germination of seeds.					
Recommended literature: Hopkins W.G. Huner N.P.A., Introduction to plant physiology. 3rd ed., Wiley, New York 2004					
Course language:					
Course assessment Total number of assessed students: 1565					
A	B	C	D	E	FX
14.5	12.33	15.14	13.67	23.77	20.58
Provides: Mgr. Silvia Gajdošová, Ph.D., doc. RNDr. Peter Paľove-Balang, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ FZ1/10		Course name: Animal Physiology			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 3 / 3 Per study period: 42 / 42 Course method: present					
Number of credits: 7					
Recommended semester/trimester of the course: 6.					
Course level: I.					
Prerequisites: ÚBEV/HIS1/03 or ÚBEV/HISE1/04 or ÚBEV/HIS1/15 or ÚBEV/HISE1/15					
Conditions for course completion: Written testing from practicals and oral examination					
Learning outcomes: To provide students with basic knowledge about physiological processes in organisms of animals and man.					
Brief outline of the course: The physiology of blood and hemopoietic organs. Physiology of respiration. Heart and circulatory physiology. Physiology of the gastrointestinal tract. The functions of liver. Energetic metabolism and physiology of nutrition. Water and mineral household of the organism. Physiology of the endocrine secretion. Physiology of reproduction. Physiology of excretion. General neurophysiology. Functions of neurons and neuronal networks. Sensory and motoric functions of CNS. Associative functions of CNS. Functions of the vegetative nervous system. Physiology of muscle contraction and active motion. Work physiology. Sensory physiology					
Recommended literature: Ganong, W. F.: Review of medical physiology. Prentice-Hall, Appleton & Langer, 1993 Varder, A. J., Sherman, J. H., Luciano, D. S.: The mechanisms of body functions, McGraw-Hill, 1990 Schmidt, R. F., Thews, G.: Human Physiology, Springer-Verlag, 1989 R.W.Hill, R.Wyse, M.Anderson : Animal Physiology, Sinauer Assoc., 2008					
Course language:					
Course assessment Total number of assessed students: 1174					
A	B	C	D	E	FX
8.35	14.14	21.64	25.04	24.19	6.64
Provides: doc. RNDr. Monika Kassayová, CSc., prof. RNDr. Beňadik Šmajda, CSc., doc. RNDr. Biana Bojková, PhD., RNDr. Vlasta Demečková, PhD., RNDr. Terézia Kisková, PhD., RNDr. Natália Pipová, PhD.					
Date of last modification: 24.02.2017					

Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi,
PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ GE1/10		Course name: Genetics			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 3 / 3 Per study period: 42 / 42 Course method: present					
Number of credits: 7					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites: ÚBEV/MB1/01 or ÚBEV/MOB1/03 or ÚBEV/MOB1/15					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 1196					
A	B	C	D	E	FX
18.56	16.47	15.97	13.96	18.73	16.3
Provides: prof. RNDr. Eva Čellárová, DrSc., RNDr. Katarína Bruňáková, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/HISE1/15		Course name: Histology			
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 credits: 6					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites: ÚBEV/CYT1/02 or ÚBEV/CYT1/15					
Conditions for course completion: Oral examination					
Learning outcomes: To provide the students with knowledge of basic morphology of tissues of animals.					
Brief outline of the course: Epithelium and glands. Connective tissue. Cartilage. Bone. Muscle. Nervous Tissue. Blood and hemopoiesis. Circulatory system. Lymphoid system. Endocrine system. Integument. Respiratory system. Digestive system. Urinary system. Female reproductive system. Male reproductive system. Nervous system. Special senses.					
Recommended literature: Gartner, L.P., Hiatt, J.L.: Color Texbook of Histology. W.B. Saunders Company, Philadelphia, 1997 Juanqueira, L.C., Carneiro, J., Kelley, R.O.: Basic Histology. Prentice Hall International Inc., Apleton & Lange, 1992					
Course language:					
Course assessment Total number of assessed students: 1744					
A	B	C	D	E	FX
17.66	13.36	15.54	12.44	25.69	15.31
Provides: doc. RNDr. Zuzana Daxnerová, CSc., RNDr. Juraj Ševc, PhD., RNDr. Anna Alexovič Matiašová, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ IBdi/15		Course name: Information security principles			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 3					
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:					
Course assessment Total number of assessed students: 26					
A	B	C	D	E	FX
23.08	23.08	23.08	11.54	3.85	15.38
Provides: RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ IKTP/15		Course name: Information and Communication Technologies			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 3., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Problems solved during the semester. A final project using presentation programs, spreadsheet programs, text processors, internet resources and search tools. The ECDL certificate (all 7 modulus) is accepted as the exam with the ranking "A-výborne".					
Learning outcomes: To achieve and extend fundamental information and communication knowledge to the level which is acceptable in the EU region.					
Brief outline of the course: Text processing using a word processor. Processing and evaluation of information using a spreadsheet. Search, retrieval and exchange of information via the Internet. Creating presentations.					
Recommended literature: 1. Franců, M: Jak zvládnout testy ECDL. Praha : Computer Press, 2007. 160 s. ISBN 978-80-251-1485-8. 2. Jančařík, A. et al.: S počítačem do Evropy – ECDL. 2. vydanie. Praha : Computer Press, 2007. 152 s. ISBN 80-251-1844-3. 3. Kolektív autorov: Sylabus ECDL verzia 5.0. [on-line] [citované 9.2.2010]. Dostupné na internete: < http://www.ecdl.sk/buxus/docs//interne_informacie/Sylabus_V5.0/20090630ECDL-SylabusV50_SK-V01_FIN.pdf >.					
Course language:					
Course assessment Total number of assessed students: 999					
A	B	C	D	E	FX
66.07	17.72	6.91	3.5	1.7	4.1
Provides: Mgr. Alexander Szabari, PhD., doc. RNDr. Ľubomír Šnajder, PhD.					
Date of last modification: 09.02.2017					

Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi,
PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPE/ INP/17		Course name: Inclusive Pedagogy			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
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: Mgr. Lucia Diheneščíková, PhD.					
Date of last modification: 13.06.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, 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: present	
Number of 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:	
Course assessment Total number of assessed students: 329	
abs	n
47.11	52.89
Provides: MUDr. Peter Dombrovský, Mgr. Marek Valanský	
Date of last modification: 23.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 6					
Recommended semester/trimester of the course: 3.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 103					
A	B	C	D	E	FX
13.59	8.74	10.68	12.62	34.95	19.42
Provides: doc. RNDr. Stanislav Krajčí, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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: present	
Number of 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:	
Course assessment Total number of assessed students: 126	
abs	n
45.24	54.76
Provides: Mgr. Peter Bakalár, PhD.	
Date of last modification: 23.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ MB1/01		Course name: Molecular Biology			
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present					
Number of credits: 4					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Oral examination.					
Learning outcomes: To provide the students with knowledge of molecular basis of inheritance and control of gene expression and development.					
Brief outline of the course: Structure and properties of information macromolecules. Molecular mechanisms of DNA replication and repair, transcription and translation. Prokaryotic and eukaryotic genome. Control of gene expression in prokaryotes and eukaryotes. Control of cell cycle.					
Recommended literature: Lodish, H., Baltimore, D., Berk, A. et al.: Molecular Cell Biology. Sci. Amer. Books Inc., W.H. Freeman and Company, New York, 1995 Myers, R.A.: Molecular Biology and Biotechnology. VCH Publishers Inc., New York, 1995					
Course language:					
Course assessment Total number of assessed students: 873					
A	B	C	D	E	FX
6.3	10.42	17.07	17.87	34.71	13.63
Provides: doc. RNDr. Peter Pristaš, CSc.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ MKV/15		Course name: Mikrobiológia a základy virológie			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of credits: 5					
Recommended semester/trimester of the course:					
Course level: I.					
Prerequisites:					
Conditions for course completion: Attendance of practicals (at least 90%), 2 written examinations during semester, final oral examination					
Learning outcomes: Students will obtain a basic informations on viruses, prokaryotic and eukaryotic microorganisms, their cytology, physiology, genetics, ecology, classification, and importance . Information on basic methods for studying microorganisms will be provided.					
Brief outline of the course: Viruses, prokaryotic and eukaryotic microorganisms, their cytology, physiology, genetics, ecology, classification. The importance of microorganisms for humans and environment.					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 1300					
A	B	C	D	E	FX
21.69	12.38	18.0	20.15	23.23	4.54
Provides: doc. RNDr. Peter Pristaš, CSc., RNDr. Mariana Kolesárová, PhD., RNDr. Lenka Maliničová, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPE/MMKV/17		Course name: Multiculturalism and Multicultural Education			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 22					
A	B	C	D	E	FX
36.36	45.45	9.09	4.55	4.55	0.0
Provides: Mgr. Lucia Diheneščiková, PhD.					
Date of last modification: 13.06.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 6					
Recommended semester/trimester of the course: 1.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Two tests and completion of individual homework. Based on semestral evaluation and examination test.					
Learning outcomes: To obtain basic knowledge in arithmetic, linear algebra, abstract algebra and calculus, to learn proof methods and to use the obtained knowledge in problem solving.					
Brief outline of the course: Integers, divisibility, congruences, congruence classes. Fields and groups. Systems of linear equations, matrices, matrix operations, determinants. Functions and their properties, continuity, limit, derivative. Analysis of functions.					
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 1, Alfa, Bratislava 1989 T. Katriňák a kol.: Algebra a teoretická aritmetika, Alfa, Bratislava 1986					
Course language: Slovak					
Course assessment Total number of assessed students: 181					
A	B	C	D	E	FX
0.55	8.29	8.84	14.36	44.2	23.76
Provides: doc. RNDr. Tomáš Madaras, PhD., Mgr. Juraj Hudák					
Date of last modification: 22.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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					
Course assessment Total number of assessed students: 85					
A	B	C	D	E	FX
1.18	8.24	10.59	17.65	52.94	9.41
Provides: doc. RNDr. Tomáš Madaras, PhD., Mgr. Juraj Hudák					
Date of last modification: 22.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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:					
Course assessment Total number of assessed students: 47					
A	B	C	D	E	FX
53.19	12.77	10.64	4.26	10.64	8.51
Provides: PaedDr. Ingrid Puchalová, PhD.					
Date of last modification: 20.02.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KGER/OJPV1/07		Course name: Specialised German Language - Natural Sciences 1			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 131					
A	B	C	D	E	FX
20.61	22.9	25.19	22.14	8.4	0.76
Provides:					
Date of last modification: 20.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPE/ OLŠ/15		Course name: School Administration and Legislation			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 3., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 132					
A	B	C	D	E	FX
28.03	33.33	26.52	8.33	3.03	0.76
Provides: Mgr. Lucia Diheneščíková, PhD., PaedDr. Renáta Orosová, PhD.					
Date of last modification: 07.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD. Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KOP/OPaPDV/14	Course name: Civil Law and Intellectual Property Rights
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present	
Number of credits: 4	
Recommended semester/trimester of the course: 3., 5.	
Course level: I., N	
Prerequisites:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 49	
abs	n
91.84	8.16
Provides: JUDr. Renáta Bačárová, PhD., LL.M., prof. JUDr. Peter Vojčík, CSc.	
Date of last modification: 08.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 / Practice Recommended course-load (hours): Per week: 2 / 0 Per study period: 28 / 0 Course method: present					
Number of credits: 3					
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:					
Course assessment Total number of assessed students: 194					
A	B	C	D	E	FX
27.32	12.89	17.53	18.56	17.01	6.7
Provides: doc. Ing. Štefánia Gallová, CSc., RNDr. PhDr. Peter Pisarčík					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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.					
Course assessment Total number of assessed students: 560					
A	B	C	D	E	FX
18.04	7.5	11.43	15.54	13.39	34.11

Provides: RNDr. František Galčík, PhD., RNDr. Zuzana Bednárová, PhD., RNDr. Juraj Šebej, PhD.
Date of last modification: 06.02.2017
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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.	
Course assessment Total number of assessed students: 1105	

A	B	C	D	E	FX
12.31	6.61	9.41	20.27	22.99	28.42
Provides: RNDr. František Galčík, PhD., PaedDr. Ján Guniš, PhD., RNDr. Zuzana Bednárová, PhD.					
Date of last modification: 06.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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:	
Course assessment Total number of assessed students: 259	
abs	n
93.05	6.95
Provides: RNDr. Ľubomír Antoni, PhD.	
Date of last modification: 07.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 2	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Active participation in class and completed homework assignments. Students are allowed to miss 2 classes at the most. Continuous assessment: 2 credit tests (presumably in weeks 6 and 13) and academic presentation in English. In order to be admitted to the final exam, a student has to score at least 65 % as a sum of both credit tests and academic presentation. 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: ANGLICKÝ JAZYK PRE GEOGRAFOV: Veda a výskum. Odbor geografia. Planéta Zem. Naša slnečná sústava. Litosféra, hydrosféra, atmosféra, biosféra. Zem - dynamická planéta. Tektonické platne. Sopečná činnosť. Zemetrasenia. Svetové oceány. Morské prúdy. Tsunami. Veľký koralový útes. Atmosféra - zloženie atmosféry. Kontinenty. Európa - krajiny, národnosti. ANGLICKÝ JAZYK PRE EKOLÓGOV: Veda a výskum. Odbor ekológia. Životné prostredie. Znečistenie a dôsledky.	

Sopečná činnosť, zemetrasenia.
Great Pacific Garbage Patch.
Globálne otepľovanie a dôsledky. Ľadovce.
Počasie a klíma. Búrky, hurikány, tsunami.
Život na Zemi. Ohrozené rastlinné a živočíšne druhy.
ANGLICKÝ JAZYK PRE BIOLÓGOV:
veda a výskum, odbor biológia.
morfológia rastlín, koreň.
stonka, list.
rozmnožovanie rastlín, kvet.
biológia človeka - telesné sústavy.
slovná zásoba z oblasti botanickej a zoologickej nomenklatúry.
ANGLICKÝ JAZYK PRE MATEMATIKOV:
Veda a výskum, odbor matematika.
čísla a tvary v matematike.
Elementárna algebra.
Elementárna geometria.
Výpočty v matematike.
Pytagoras, Pytagorova veta.
Grafy a diagramy.
Štatistika.
ANGLICKÝ JAZYK PRE FYZIKOV
Veda a výskum, odbor fyzika.
Atómy a molekuly.
Hmota a jej premeny.
Elektrina, jej využitie.
Zvuka, jeho prenos.
Svetlo.
Solárny systém.
Matematické operácie.
ANGLICKÝ JAZYK PRE CHEMIKOV:
Veda a výskum, odbor chémia:
História, alchímia.
Nomenklatúra.
Laboratórium a jeho vybavenie.
Periodická tabuľka.
Hmota a jej premeny.
Organická chémia.
Anorganická chémia.
ANGLICKÝ JAZYK PRE INFORMATIKOV:
Veda a výskum, informatika.
Život s počítačom.
Typický PC.
Zdravie a bezpečnosť, ergonómika.
Programovanie.
Emailovanie.
Cybercrime.
Trendy budúcnosti.

Recommended literature:

study materials provided by the course instructor

Royds-Irmak, D.E. Beginning Scientific English. Nelson, 1975.
 Velebná, B. English for Chemists. ffweb.ff.upjs.sk/vyuka/
 Redman, S.: English Vocabulary in Use, Pre-intermediate, Intermediate. Cambridge University Press, 2003.
 Powel, M.: Dynamic Presentations. CUP, 2010.
 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.
 Redman, S.: English Vocabulary in Use, Pre-intermediate, Intermediate. Cambridge University Press, 2003.
 P. Fitzgerald : English for ICT studies. Garnet Publishing, 2011.
<http://www.bbc.co.uk/worldservice/learningenglish>

Course language:

Course assessment

Total number of assessed students: 2304

A	B	C	D	E	FX
32.55	26.26	18.06	11.46	9.24	2.43

Provides: PaedDr. Gabriela Bednáriková, Mgr. Gabriel Lukáč, PhD., PhDr. Helena Petruňová, CSc.

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: CJP/ PFAJAKA/07		Course name: Academic English			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined, present					
Number of credits: 2					
Recommended semester/trimester of the course:					
Course level: I., II., N					
Prerequisites:					
Conditions for course completion: Active classroom participation, 2 absences tolerated (4x45 min.) tolerated. 2 tests (5th/6th week and 12th/13th week), no retake. Minipresentation on chosen topic. Final evaluation- average assessment of tests and presentation. Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less					
Learning outcomes:					
Brief outline of the course:					
Recommended literature: Seal B.: Academic Encounters, CUP, 2002 T. Armer :Cambridge English for Scientists, CUP 2011 M. McCarthy M., O'Dell F. - Academic Vocabulary in Use, CUP 2008 Zemach, D.E, Rumisek, L.A: Academic Writing, Macmillan 2005 Olsen, A. : Active Vocabulary, Pearson, 2013 www.bbclearningenglish.com Cambridge Academic Content Dictionary, CUP, 2009					
Course language: English language, level B2 according to CEFR.					
Course assessment Total number of assessed students: 334					
A	B	C	D	E	FX
29.94	23.65	16.17	11.08	7.49	11.68
Provides: PaedDr. Gabriela Bednáriková					
Date of last modification: 21.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: CJP/ PFAJGA/07		Course name: Communicative Grammar in English			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined, present					
Number of 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: Misztal M.: Thematic Vocabulary, Fragment, 1998 McCarthy, O'Dell: English Vocabulary in Use, 1994 Alexander L.G.: Longman English Grammar, Longman, 1988 Jones I. - Communicative Grammar Practice, CUP, 1992 Vince M.: Macmillan Grammar in Context, Macmillan, 2008 www.bbclearningenglish.com Gráf T., Peters S.: Time to practise, Polyglot, 2007					
Course language:					
Course assessment Total number of assessed students: 389					
A	B	C	D	E	FX
39.33	18.25	16.97	9.0	6.17	10.28
Provides: PaedDr. Gabriela Bednáriková, Mgr. Barbara Mitříková					
Date of last modification: 21.02.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, 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 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. 2 credit tests (presumably in weeks 6/7 and 12/13) and short academic presentations in English on selected topics. Final grade will be calculated as follows: A 93-100 %, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64 % and less.	
Learning outcomes: Uplatnenie a aktívne používanie svojich teoretických vedomostí v praktických komunikačných situáciách. Zdokonalenie jazykových vedomostí a zručností študenta, rečovej, pragmatickej a vecnej kompetencie, predovšetkým zlepšujú komunikáciu, 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 Životné prostredie a ekológia Výnimky zo slovosledu Frázové slovesá a ich použitie Charakteristiky neformálneho diškurzu	

Recommended literature:

www.bbclearningenglish.com

McCarthy M., O'Dell F.: English Vocabulary in Use, Upper-Intermediate. CUP, 1994.

Misztal M.: Thematic Vocabulary. SPN, 1998.

Fictumova J., Ceccarelli J., Long T.: Angličtina, konverzace pro pokročilé. Barrister and Principal, 2008.

Peters S., Gráf T.: Time to practise. Polyglot, 2007.

Jones L.: Communicative Grammar Practice. CUP, 1985.

Alexander L.G.: Longman English Grammar. Longman, 1988.

Course language:

English language, B2 level according to CEFR

Course assessment

Total number of assessed students: 211

A	B	C	D	E	FX
36.02	21.33	20.38	10.9	7.58	3.79

Provides: Mgr. Barbara Mitříková

Date of last modification: 21.02.2017

Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPPaPZ/PKŽ/15		Course name: Psychology of Everyday Life			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 87					
A	B	C	D	E	FX
29.89	16.09	37.93	11.49	3.45	1.15
Provides: Mgr. Ondrej Kalina, PhD.					
Date of last modification: 16.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ PMZ/10		Course name: Comparative Animal Morphology			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present					
Number of credits: 4					
Recommended semester/trimester of the course: 1.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Lectures and practical exercises, original drawing of some parts of animal body or it derivatives, examination.					
Learning outcomes:					
Brief outline of the course:					
Recommended literature: Kardong, K. V., 2002: Vertebrates. Comparative anatomy, function, evolution. 3rd ed., Mc-Graw-Hill, New York. Pough, F. H., Janis, Ch. M., Heiser, J. B., 2008: Vertebrate Life. Prentice Hall, Inc., 752 pp. 8th edition. Ruppert, E. E., Fox, R. S., & Barnes, R. D., 2004: Invertebrate zoology: a functional evolutionary approach. Belmont, CA: Thomas-Brooks/Cole.					
Course language:					
Course assessment Total number of assessed students: 1676					
A	B	C	D	E	FX
16.11	17.96	24.58	22.55	13.25	5.55
Provides: RNDr. Andrej Mock, PhD., RNDr. Alexander Csanády, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPPaPZ/PP/15		Course name: Positive Psychology			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
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:					
Course assessment Total number of assessed students: 120					
A	B	C	D	E	FX
97.5	1.67	0.0	0.0	0.83	0.0
Provides: Mgr. Jozef Benka, PhD. et PhD.					
Date of last modification: 16.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 4					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 147					
A	B	C	D	E	FX
34.69	17.01	17.69	14.29	15.65	0.68
Provides: doc. Ing. Štefánia Gallová, CSc., RNDr. Juraj Šebej, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 3	
Recommended semester/trimester of the course: 4.	
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:	
Course assessment Total number of assessed students: 41	

A	B	C	D	E	FX
43.9	26.83	14.63	2.44	0.0	12.2
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD., RNDr. Zuzana Bednárová, PhD.					
Date of last modification: 07.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 5	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisites: ÚINF/PAZ1a/15 or ÚINF/ePAZ1a/15	
Conditions for course completion: Activity at excercises, home work, test. verbal exam, final test	
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, to know basic application protocols and use them in own applications.	
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, 5. edícia, 2010 2. A. S. Tanenbaum: Computer Networks, Prentice Hall, 2002 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:					
Course assessment					
Total number of assessed students: 705					
A	B	C	D	E	FX
9.79	5.11	11.21	15.89	38.16	19.86
Provides: RNDr. Peter Gurský, PhD., RNDr. JUDr. Pavol Sokol, PhD.					
Date of last modification: 06.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 2	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Evaluation of partial assignments. The secure dynamic web applications using JavaScript, PHP, MySQL.	
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	
Course assessment Total number of assessed students: 200	

A	B	C	D	E	FX
9.5	8.5	9.5	9.0	22.5	41.0
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.					
Date of last modification: 07.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPPaPZ/PUDB/15		Course name: Drug Addiction Prevention in University Students			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 3., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 172					
A	B	C	D	E	FX
68.6	28.49	2.91	0.0	0.0	0.0
Provides: prof. PhDr. Oľga Orosová, CSc., Mgr. Marta Kulanová, PhD., Mgr. Marcela Štefaňáková, Mgr. Bohuš Hajduch					
Date of last modification: 16.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPE/ Pg/15		Course name: Pedagogy			
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 3., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 298					
A	B	C	D	E	FX
23.49	19.13	23.83	18.46	13.76	1.34
Provides: Mgr. Katarína Petriková, PhD.					
Date of last modification: 07.02.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPPaPZ/Ps/15		Course name: Psychology			
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 1., 3., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 236					
A	B	C	D	E	FX
15.25	11.02	25.42	23.73	20.76	3.81
Provides: prof. PhDr. Oľga Orosová, CSc., PhDr. Anna Janovská, PhD., Mgr. Jozef Benka, PhD. et PhD.					
Date of last modification: 16.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 5					
Recommended semester/trimester of the course: 6.					
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:					
Course assessment Total number of assessed students: 378					
A	B	C	D	E	FX
21.96	10.32	12.96	12.17	28.84	13.76
Provides: doc. RNDr. Stanislav Krajči, PhD., RNDr. Ondrej Krídlo, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPO/ SPKVV/15		Course name: Social and Political Context of Education			
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
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:					
Course assessment Total number of assessed students: 11					
A	B	C	D	E	FX
9.09	0.0	45.45	36.36	9.09	0.0
Provides: Mgr. Alexander Onufrák, PhD.					
Date of last modification: 17.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/SPP1a/15		Course name: Programming environments in schools 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 credits: 4					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites: ÚINF/PAZ1a/15					
Conditions for course completion: Creation of educational project in selected children's programming environment (Imagine Logo, Lazarus). Designing and presentation of graded tasks collection in selected children's programming environment.					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 294					
A	B	C	D	E	FX
34.35	19.39	16.33	13.95	11.22	4.76
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚINF/ SPP1b/15	Course name: Programming environments in schools 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 credits: 4	
Recommended semester/trimester of the course: 6.	
Course level: I.	
Prerequisites: ÚINF/SPP1a/15	
Conditions for course completion: Creation of educational project in selected children's programming environment (Scratch/ AppInventor). Designing and presentation of graded tasks collection in selected children's programming environment.	
Learning outcomes: 1. To get an overview of children's programming environments. 2. To acquire programming skills in selected children's programming environments. 3. To compile a collection of graded learning tasks on programming.	
Brief outline of the course: Teaching of algorithms and programming in elementary school - the objectives, content, textbooks and methodological materials. Algorithmic computer games. Overview of children's programming environments. Programming in Scratch/AppInventor, creating educational projects. Creating graded set of tasks to selected children's programming environment.	
Recommended literature: 1. LOVÁSZOVÁ, G. a kol. (2010) Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Malé programovacie jazyky. Bratislava : ŠPÚ, 2010. ISBN 978-80-8118-066-8 2. SALANCI, Ľ. a kol. (2010) Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Didaktika programovania. Bratislava : ŠPÚ, 2010. ISBN 978-80-8118-065-1 3. LOVÁSZOVÁ, G. a kol. (2011) Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Didaktika programovania pre ZŠ 1. Bratislava : ŠPÚ, 2010. ISBN 978-80-8118-080-4 4. LOVÁSZOVÁ, G. a kol. (2011) Ďalšie vzdelávanie učiteľov základných škôl a stredných škôl v predmete informatika: Didaktika programovania pre ZŠ 2. Bratislava : ŠPÚ, 2010. ISBN 978-80-8118-091-0	
Course language:	
Course assessment Total number of assessed students: 8	

A	B	C	D	E	FX
0.0	12.5	0.0	50.0	12.5	25.0
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ SVK/01		Course name: Student Scientific Conference			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of credits: 4					
Recommended semester/trimester of the course: 4., 6.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 230					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides:					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 2					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites: ÚINF/DBS1a/15 or ÚINF/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:					
Course assessment Total number of assessed students: 260					
A	B	C	D	E	FX
16.15	18.08	20.0	20.77	23.85	1.15
Provides: doc. RNDr. Gabriel Semanišin, PhD., Mgr. Alexander Szabari, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/ TCB1/03	Course name: Fieldworks from Botany
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 5d Course method: present	
Number of credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes: Study of methods for identification and determination of common central-europaeen plants.	
Brief outline of the course: Plant identification in different habitats. Plant determination. Floristic records.	
Recommended literature: Dostál J., Červenka M.: Veľký kľúč na určovanie rastlín I. a II. - Veda, Bratislava 1991 a 1992. Kubát K. (ed.): Kľíč ke květeně České republiky. - Academia, Praha, 2002. Marhold K. a Hindák F. (eds.): Zoznam nižších a vyšších rastlín Slovenska. Checklist of non-vascular and vascular plants of Slovakia. - Veda, Bratislava 1998. Krejča J. (ilustr.): Velká kniha rostlín. - Bratislava (various editions).	
Course language:	
Course assessment Total number of assessed students: 1005	
abs	n
99.9	0.1
Provides: prof. RNDr. Pavol Mártonfi, PhD., prof. RNDr. Martin Bačkor, DrSc., Mgr. Vladislav Kolarčík, PhD.	
Date of last modification: 24.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/ TCZ/03	Course name: Fieldwork from zoology
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 5d Course method: present	
Number of credits: 2	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisites:	
Conditions for course completion:	
Learning outcomes: Practical observation of morphology of vertebrates.	
Brief outline of the course: Systematic and phylogenetic relationships of vertebrate. Review of important groups of fishes, amphibians, reptiles, birds and mammals - observation, and laboratory work.	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 716	
abs	n
99.16	0.84
Provides: RNDr. Peter Ľuptáčik, PhD., doc. RNDr. Ľubomír Panigaj, CSc., RNDr. Andrej Mock, PhD.	
Date of last modification: 24.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/TMS/10		Course name: Secrets of microworld			
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 3					
Recommended semester/trimester of the course: 4., 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion: term project					
Learning outcomes: To give a review of the recent results form the elementary particle physics for non-physicists layman level.					
Brief outline of the course: Introduction to the topics. Atom, nucleus and the basic forces in Nature. Quarks and classification of elementary particles. Methods and approaches in micro objects research. Contenporary experiments un subnuclear physics - BNL, CERN, JINR Dubna.					
Recommended literature: 1.Frank Close: The cosmic onion, Heinemann Educational Books Ltd, 1990 2. Ljubimov A., Kiss D.: Vvedenie v experimental'nuju fiziku častic, Dubna, 1999 3. J.Žáček: Úvod do fyziky elementárních částic, Karolinum, Praha, 2005 4. R. Mackintosh et al. : Jádro - cesta do srdce hmoty, Academia, Praha, 2003					
Course language: slovak					
Course assessment Total number of assessed students: 66					
A	B	C	D	E	FX
74.24	15.15	10.61	0.0	0.0	0.0
Provides: doc. RNDr. Jozef Urbán, CSc., prof. RNDr. Stanislav Vokál, DrSc., RNDr. Janka Vrláková, PhD.					
Date of last modification: 20.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPE/TVE/08		Course name: Theory of Education			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 4., 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 318					
A	B	C	D	E	FX
25.16	35.85	26.1	7.55	2.2	3.14
Provides: Mgr. Katarína Petriková, PhD., PaedDr. Renáta Orosová, PhD.					
Date of last modification: 07.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚINF/ TVY/15		Course name: Computability theory			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present					
Number of credits: 4					
Recommended semester/trimester of the course: 5.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: To provide theoretical background for studying computer science in general, by familiarising students with basic knowledge of the theory of computability.					
Brief outline of the course: Turing machine as a formalisation of the notion of an algorithm. Partial recursive functions. Kleene's normal form theorem. The equivalences of the notion of a function calculable by a Turing machine, partial recursive and calculable by a computer program. Algorithmical undecidability of the halting problem of a Turing machine and a computer program.					
Recommended literature: MACHTEY, M. and YOUNG, P.: An Introduction to the General Theory of Algorithms, North--Holland, Amsterdam 1978. BRIDGES, D. S.: Computability, A Mathematical Sketch book, Springer--Verlag 1994					
Course language:					
Course assessment Total number of assessed students: 233					
A	B	C	D	E	FX
40.77	11.59	15.02	6.87	6.44	19.31
Provides: doc. RNDr. Stanislav Krajčí, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚTVŠ/ TVa/11		Course name: Sports Activities I.					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present							
Number of credits: 2							
Recommended semester/trimester of the course: 1.							
Course level: I., I.II., II.							
Prerequisites:							
Conditions for course completion:							
Learning outcomes:							
Brief outline of the course:							
Recommended literature:							
Course language:							
Course assessment Total number of assessed students: 10457							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.25	0.0	0.0	0.0	0.0	0.02	7.81	3.92
Provides: Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., PaedDr. Jana Potočnicková, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., Mgr. Marcel Čurgali, doc. PhDr. Ivan Šulc, CSc.							
Date of last modification: 23.02.2017							
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.							

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚTVŠ/ TVb/11		Course name: Sports Activities II.					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present							
Number of credits: 2							
Recommended semester/trimester of the course: 2.							
Course level: I., I.II., II.							
Prerequisites:							
Conditions for course completion:							
Learning outcomes:							
Brief outline of the course:							
Recommended literature:							
Course language:							
Course assessment Total number of assessed students: 9779							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.09	0.61	0.02	0.0	0.0	0.02	10.36	3.9
Provides: Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., PaedDr. Jana Potočnicková, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., Mgr. Marcel Čurgali, doc. PhDr. Ivan Šulc, CSc.							
Date of last modification: 23.02.2017							
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.							

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚTVŠ/ TVc/11		Course name: Sports Activities III.					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present							
Number of 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:							
Course assessment Total number of assessed students: 6188							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
89.66	0.03	0.0	0.0	0.0	0.0	4.36	5.95
Provides: PaedDr. Jana Potočnicková, PhD., Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., doc. PhDr. Ivan Šulc, CSc.							
Date of last modification: 23.02.2017							
Approved: Guarantee doc. RNDr. Stanislav Krajči, PhD. Guarantee prof. RNDr. Pavol Mártonfi, PhD.							

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚTVŠ/ TVd/11		Course name: Sports Activities IV.					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present							
Number of 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:							
Course assessment Total number of assessed students: 4644							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.66	0.32	0.04	0.0	0.0	0.0	6.61	7.36
Provides: Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., PaedDr. Jana Potočnicková, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Aurel Zelko, PhD., doc. PhDr. Ivan Šulc, CSc.							
Date of last modification: 23.02.2017							
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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:					
Course language:					
Course assessment Total number of assessed students: 241					
A	B	C	D	E	FX
46.89	18.67	19.92	6.64	7.05	0.83
Provides: doc. RNDr. Stanislav Krajčí, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 5					
Recommended semester/trimester of the course: 3.					
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:					
Course assessment Total number of assessed students: 273					
A	B	C	D	E	FX
14.65	8.79	13.55	23.08	30.77	9.16
Provides: doc. RNDr. Gabriel Semanišin, PhD., RNDr. Rastislav Krivoš-Belluš, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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:					
Course assessment Total number of assessed students: 189					
A	B	C	D	E	FX
32.8	14.29	19.58	12.17	4.76	16.4
Provides: doc. RNDr. Stanislav Krajčí, PhD., RNDr. Ondrej Krídlo, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 credits: 5					
Recommended semester/trimester of the course: 3.					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: To understand and to know applications of basic paradigms of neural networks. To learn working with software for neural network models.					
Brief outline of the course: Basic models of computational units - neurons (linear threshold gates, polynomial threshold gates, perceptrons), their computational capability, algorithms of adaptations. Feed-forward neural networks, back propagation algorithm. Hopfield neural networks. ART neural networks. Using neural networks to solving of problems. Genetic and evolution algorithms.					
Recommended literature: J. Hertz, A.Krogh, R.G. Palmer: Introduction to the theory of neural computation, Addison Wesley, 1991 HASSOUN, M. H.: Fundamentals of artificial neural networks, The MIT Press, 1995					
Course language:					
Course assessment Total number of assessed students: 393					
A	B	C	D	E	FX
9.92	16.03	23.66	20.87	24.68	4.83
Provides: doc. RNDr. Gabriela Andrejková, CSc., RNDr. Lubomír Antoni, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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 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:	
Course assessment Total number of assessed students: 1136	
abs	n
91.37	8.63
Provides: doc. RNDr. Gabriel Semanišin, PhD.	
Date of last modification: 13.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ VB1/01		Course name: General botany			
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 credits: 6					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites: ÚBEV/CYT1/02 or ÚBEV/CYT1/15					
Conditions for course completion:					
Learning outcomes: This subject enables to understand the structure and function of plant cells, tissues and organs and to enhance student's ability to describe the biological role of plants for life on earth.					
Brief outline of the course: The structure and function of plant cells and tissues. Plant organs, their structure, function, shape and organization. Plant reproduction and grounding in embryology. Basic information and terms that are necessary for understanding of relationship between internal structure and functions of organs and functions plant organism en bloc.					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 1690					
A	B	C	D	E	FX
19.29	22.13	27.1	17.99	9.53	3.96
Provides: prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčík, PhD.					
Date of last modification: 24.02.2017					
Approved: Guarantee doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ VEK1/03		Course name: Introduction to Ecology			
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 3					
Recommended semester/trimester of the course:					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Fundamental parameters and relations in ecological science.					
Brief outline of the course: Ecological factors and relations in environment (air, water, soil); influence of ecological factors on individuals (morphological adaptations, behavioral reactions); populations and communities; ecosystems (impact assessment); conservation and biodiversity.					
Recommended literature: Begon, M., Harper, J. L., Townsend, C. L.: Ecology: individuals, populations, and communities. Blackwell Sci. Publ., 1990					
Course language:					
Course assessment Total number of assessed students: 1461					
A	B	C	D	E	FX
19.78	15.54	24.44	18.34	12.66	9.24
Provides: prof. RNDr. Igor Hudec, CSc.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KFaDF/VKFV/07		Course name: Selected Topics in Philosophy of Education (General Introduction)			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 3., 5.					
Course level: I.					
Prerequisites: KFaDF/DF1/05					
Conditions for course completion:					
Learning outcomes:					
Brief outline of the course:					
Recommended literature:					
Course language:					
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. PhDr. Pavol Tholt, PhD., mim. prof.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, 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: Lecture / Practice Recommended course-load (hours): Per week: 0 / 3 Per study period: 0 / 42 Course method: present					
Number of credits: 3					
Recommended semester/trimester of the course: 3., 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Solving partial assignments and active participation in discussions in a virtual classroom.					
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 užívatele premýšlet!</i>: 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					
Course assessment Total number of assessed students: 94					
A	B	C	D	E	FX
13.83	9.57	9.57	19.15	24.47	23.4
Provides: doc. RNDr. Ľubomír Šnajder, PhD., PaedDr. Ján Guniš, PhD.					
Date of last modification: 09.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚCHV/ ZAC2/10		Course name: Basic Chemistry			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of credits: 6					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: inorganic part: one test in 6th week; 50 points. organic part: one test in 12th week; 50 points. At least 50% of points required from both. Terminal examination by written form, 100 points; 50 points from inorganic part and 50 points from organic parts.					
Learning outcomes: The main goal of this subject is to provide a basic overview of inorganic and organic chemistry for biology students.					
Brief outline of the course: Introduction to general and inorganic chemistry. Periodic systems of elements. Atomic structure. Chemical bonds. Relationship between structure and properties of substances. Solutions. Transition and non transition elements and their compounds. Coordination and biocoordination compounds. Elements essential for living organisms and their function. Biometals. Biominerals. Introduction to organic chemistry. Saturated and unsaturated hydrocarbons and their derivatives. Heterocyclic compounds. Carbohydrates. Lipids. Aminoacids and proteins. Enzymes and vitamins. Nucleic acids. Metabolism and energy.					
Recommended literature: 1. Caret C. R., Denniston K.J., Topping J. J.: Principles and Applications of Inorganic, Organic and Biological Chemistry. WCB, Boston 1997. 2. R.Chang: Chemistry, McGRAW-HILL,Inc., New York 1991. 3. K. C. Timberlake: Organic and Biological Chemistry, Structure of Life. Benjamin Cummings Publishing Company, Inc., San Francisco 2002.					
Course language:					
Course assessment Total number of assessed students: 1056					
A	B	C	D	E	FX
19.89	25.47	26.8	17.23	10.04	0.57

Provides: doc. RNDr. Zuzana Vargová, Ph.D., RNDr. Mária Vilková, PhD.
Date of last modification: 24.02.2017
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ ZO1/15		Course name: Zoology 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 credits: 4					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites: ÚBEV/PMZ/10					
Conditions for course completion:					
Learning outcomes: Basis of Invertebrata taxonomy including taxonomy of Monocytozoa. Importance and function of chosen individual taxons. Phylogenetic relations.					
Brief outline of the course: Anatomy, morphology and development of separate groups of Invertebrates – especially Porifera, Cnidaria, Plathelminthes, Nemathelminthes, Mollusca, Anelida, Arthropoda, Echinodermata. Characteristic species.					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 194					
A	B	C	D	E	FX
6.7	20.1	19.07	26.8	19.07	8.25
Provides: doc. RNDr. Ľubomír Panigaj, CSc., RNDr. Peter Ľuptáčík, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ ZO1/03		Course name: Zoology 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 credits: 5					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites: ÚBEV/PMZ/10					
Conditions for course completion:					
Learning outcomes: Basis of Invertebrata taxonomy- Importance and function of chosen individual taxons. Phylogenetic relations.					
Brief outline of the course: Anatomy, morphology and development of separate groups of Invertebrates – especially Porifera, Cnidaria, Plathelminthes, Nematelminthes, Mollusca, Anelida, Arthropoda, Echinodermata. Characteristic species.					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 978					
A	B	C	D	E	FX
7.87	15.34	20.76	20.04	25.77	10.22
Provides: doc. RNDr. Ľubomír Panigaj, CSc., RNDr. Peter Ľuptáčík, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ ZOG1/03		Course name: Zoogeography			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of credits: 6					
Recommended semester/trimester of the course:					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: Active participation in seminars. Preparation of oral presentation to selected topic. Semestral written test. Oral examination.					
Learning outcomes: The main goal of the subject is to get knowledge on the basic reasons of recent distribution of the animals on the Earth, zoogeographic regionalization of the Earth's surface and human influence on the faunal distribution in the history.					
Brief outline of the course: This course will review our current understanding of the patterns of animal distribution and the processes that influence distributions of species and their attributes. Zoogeography will integrate information on the historical and current ecology, genetics, and physiology of animals and their interaction with environmental processes (continental drift, climate) in regulating geographic distributions. The course will emphasize descriptive and analytical approaches useful in hypothesis testing in zoogeography and will illustrate applied aspects of zoogeography (e.g. refuge design in conservation).					
Recommended literature: Buchar, J., 1983: Zoogeografie. SPN Praha Darlington, P.J., 1998: Zoogeography: The geographical distribution of animals. Krieger, USA Lomolino M.V., Brown J.H., Riddle B. R., 2005: Biogeography. Sinauer Associates, 1-845 Plesník, P., Zatkalík, F., 1996: Biogeografia. Vysokoškolské skriptá, PríFUK Bratislava					
Course language:					
Course assessment Total number of assessed students: 845					
A	B	C	D	E	FX
23.2	23.55	24.85	18.22	8.17	2.01
Provides: doc. RNDr. Ľubomír Kováč, CSc.					

Date of last modification: 24.02.2017
Approved: Guaranteedoc. RNDr. Stanislav Krajči, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ ZOO1/15		Course name: Zoology 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 credits: 4					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites: ÚBEV/PMZ/10					
Conditions for course completion:					
Learning outcomes: Fundamental information on taxonomy and morphology of vertebrates					
Brief outline of the course: Systematic and phylogenetic relationships of vertebrate. Review of important groups of fishes, amphibians, reptiles, birds and mammals.					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 127					
A	B	C	D	E	FX
0.79	22.05	18.9	19.69	25.98	12.6
Provides: doc. RNDr. Marcel Uhrin, PhD., RNDr. Peter Ľuptáčik, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚBEV/ ZOO1/03		Course name: Zoology 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 credits: 5					
Recommended semester/trimester of the course: 4.					
Course level: I.					
Prerequisites: ÚBEV/PMZ/10					
Conditions for course completion:					
Learning outcomes: Fundamental information on taxonomy and morphology of vertebrates					
Brief outline of the course: Systematic and phylogenetic relationships of vertebrate. Review of important groups of fishes, amphibians, reptiles, birds and mammals.					
Recommended literature:					
Course language:					
Course assessment Total number of assessed students: 843					
A	B	C	D	E	FX
22.66	26.69	19.69	16.73	10.44	3.8
Provides: doc. RNDr. Marcel Uhrin, PhD., RNDr. Peter Ľuptáčik, PhD.					
Date of last modification: 24.02.2017					
Approved: Guaranteed doc. RNDr. Stanislav Krajčí, PhD. Guarantee prof. RNDr. Pavol Mártonfi, 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: present	
Number of 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:	
Course assessment Total number of assessed students: 15	
abs	n
26.67	73.33
Provides: Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.	
Date of last modification: 23.02.2017	
Approved: Guaranteedoc. RNDr. Stanislav Krajčí, PhD.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	