

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: kontrolný písomný test, aktivita na hodine záverečný písomný test miniprezentácie na dané témy povolené max. 2 absencie stupnica hodnotenia: A 93-100, B 86-92, C 79-85, D 72-78, E 65-71, FX 64 a menej aktivita na hodine predmet končí hodnotením	
Learning outcomes: Osvojenie si a rozvíjanie užitočných techník akademického písomného ako aj ústneho prejavu so zameraním na rozvoj jazykových kompetencií študenta, na upevňovanie a rozvíjanie všetkých jazykových zručností na stredne pokročilej úrovni ovládania jazyka (B2) podľa Spoločného európskeho referenčného rámca pre jazyky). Predmet kladie dôraz na používanie angličtiny v akademickom prostredí.	
Brief outline of the course: Akademická angličtina a jej charakteristiky Čítanie odborných článkov, analýza, parafrázovanie Spájacie slová v akademickom písaní Formálna a neformálna angličtina a ich črty Vyjadrovanie príčiny, následku v akademickom jazyku Čítanie odbornej publikácie, analýza, parafrázovanie Slovo tvorba v anglickom jazyku- predpony a prípony Ako prezentovať v angličtine Parafrázovanie a definovanie Ako písať abstrakt Slovosled v akademickom diškurze	
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:					
Notes:					
Course assessment Total number of assessed students: 295					
A	B	C	D	E	FX
28.81	22.37	16.27	11.53	8.14	12.88
Provides: PaedDr. Gabriela Bednáriková					
Date of last modification: 06.09.2016					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ ATC/10		Course name: Algebra and number 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: 4.					
Course level: I.					
Prerequisites: ÚMV/ALG2b/10					
Conditions for course completion: It is based on the results of written checks carried out during the semester. Final evaluation is based on the results of written checks carried out during the semester, of test, written and oral exam.					
Learning outcomes: Obtain basic knowledge about groups and from the elementary number theory.					
Brief outline of the course: Groups, subgroups, quotient groups, homomorphism theorems for groups, selected topics of the number theory.					
Recommended literature: G.Birkoff, S.Mac Lane: A Survey of Modern Algebra, New York 1965 I.R. Shafarevich: Basic Notions of Algebra, Springer, 2005					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 113					
A	B	C	D	E	FX
10.62	17.7	27.43	22.12	16.81	5.31
Provides: doc. RNDr. Matúš Harminec, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ ALGa/10		Course name: Algebra I			
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: 1.					
Course level: I.					
Prerequisites:					
Conditions for course completion: According to the results from the semester and in view of the results of the written and oral final exam..					
Learning outcomes: To obtain basic knowledge from number theory concerning divisibility and from linear algebra concerning systems of linear equations. To be able to apply it in concrete exercises.					
Brief outline of the course: Divisibility in $\mathbb{Z}$. Fields. Systems of linear equations, Gauss elimination. Maps, permutations. Computing with matrices. Determinants, Cramer rule.					
Recommended literature: T.S Blyth, E.F. Robertson: Basic linear algebra, Springer Verlag, 2001. K. Jänich: Linear algebra, Springer Verlag, 1991.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 1250					
A	B	C	D	E	FX
10.8	11.12	17.6	17.76	29.68	13.04
Provides: prof. RNDr. Danica Studenovská, CSc., RNDr. Igor Fabrici, Dr. rer. nat., Mgr. Martina Sabová, RNDr. Miroslava Černegová, Mgr. Jana Chudá, RNDr. Anna Mišková					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ ALG2b/10		Course name: Algebra II			
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: 2.					
Course level: I.					
Prerequisites: ÚMV/ALGa/10					
Conditions for course completion: According to tests and to the exam.					
Learning outcomes: To obtain basic knowledge on matrices, linear spaces, linear transformations and polynomials and their roots over a field; to be able to apply the theory in concrete excercises.					
Brief outline of the course: Linear spaces, bases. Rank of a matrix. Systems of homogeneous linear equations. Linear transformations. Ring, fields. Polynomials over a field. Factorization into irreducible factors, roots. Roots of complex numbers. Cubic equations. Polynomials with several unknowns, symmetric polynomials.					
Recommended literature: A. Kurosh: Higher Algebra, Mir Publishers, 1975.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 478					
A	B	C	D	E	FX
12.76	11.92	17.36	18.2	29.08	10.67
Provides: prof. RNDr. Danica Studenovská, CSc., doc. RNDr. Matúš Harminc, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 65					
A	B	C	D	E	FX
78.46	18.46	0.0	1.54	0.0	1.54
Provides: PaedDr. Renáta Orosová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Course level: I.					
Prerequisites:					
Conditions for course completion: Oral examination.					
Learning outcomes: To provide theoretical background for studying computer science in general, by giving the necessary knowledge in theory of automata.					
Brief outline of the course: Chomsky hierarchy of grammars and languages. Finite-state transducers and mapping, construction of a reduced automaton. Finite-state acceptors, nondeterministic acceptors, regular expressions. Closure properties of regular languages. Context-free grammars, Chomsky and Greibach normal forms. Pushdown automata, Pumping lemma. Closure properties of context-free languages.					
Recommended literature: J.E. Hopcroft, R.Motwani, J.D. Ullman: Introduction to automata theory, languages, and computation, Addison-Wesley, 2001. J. Shallit: A second course in formal languages and automata theory, Cambridge University press, 2009. M. Sipser: Introduction to the theory of computation, Thomson Course Technology, 2006.					
Course language:					
Notes:					
Course assessment Total number of assessed students: 741					
A	B	C	D	E	FX
22.94	17.95	24.29	19.03	10.53	5.26
Provides: Mgr. Alexander Szabari, PhD., prof. RNDr. Viliam Geffert, DrSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ 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 based on the assignments of the supervisor and acceptance of its content by the supervisor.	
Learning outcomes: Bachelor project prepared as a design of a bachelor thesis, as an evidence that student is able to process knowledge available in different resources, cite correctly and keep the layout correctly, prepare a presentation and share the results in front of experts.	
Brief outline of the course: The bachelor project is aimed at the selected problem of physics. Based on the assignments student carries out the following activities: development of the project, formulation of the problem and methods, formal and graphical layout, correct citations and references, basic principles of presentation and its defence.	
Recommended literature: 1. Resources (literature, papers) based on the project assignments. 2. Regulations No. 1/2011 about final works (thesis for University of P.J. Šafárik.	
Course language: Slovak, English	
Notes:	
Course assessment Total number of assessed students: 2	
abs	n
100.0	0.0
Provides:	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ BKP2/14	Course name: Bachelor Project
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: 2	
Recommended semester/trimester of the course: 5.	
Course level: I.	
Prerequisites:	
Conditions for course completion: To prepare and present a contribution related to thesis and its topic.	
Learning outcomes: To get students familiar with basic knowledge on the form and content of thesis and thesis presentation as well as with the support for its realisation.	
Brief outline of the course: Necessary elements and formal aspects of a thesis. WYSIWYG editors, LaTeX, drawing programs. Presentation software, Microsoft PowerPoint and its clones, Beamer. Suggestions for presentation and contribution making.	
Recommended literature: electronic information sources	
Course language: Slovak or English	
Notes:	
Course assessment Total number of assessed students: 93	
abs	n
100.0	0.0
Provides: doc. RNDr. Dušan Šveda, CSc.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ BSSM/15		Course name: Bachelor State Exam Physics			
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: Answering questions concerning selected fields of the subjects of Bachelor state exam.					
Learning outcomes: Basic knowledge and overview of knowledge in the fields stated by the Bachelor state exam.					
Brief outline of the course: Exam in the field of knowledge in physics consisting of an overview of the following fields: - Mechanics and molecular physics - Electricity and magnetism - Oscillations and waves, optics - Nuclear physics - General biophysics - Theoretical mechanics - Theory of electromagnetic field - Statistical physics					
Recommended literature:					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 3					
A	B	C	D	E	FX
66.67	33.33	0.0	0.0	0.0	0.0
Provides:					
Date of last modification: 16.02.2016					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ 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: Acquiring the required number of credits in the structure defined by the study plan.					
Learning outcomes: Evaluation of student's competences with respect to the profile of the graduate.					
Brief outline of the course: Presentation of results of the bachelor thesis, answering the questions of the thesis supervisor and answering the questions of members of evaluation committee.					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 18					
A	B	C	D	E	FX
61.11	27.78	5.56	0.0	5.56	0.0
Provides:					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ 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: Required number of credits gained based on submitting the bachelor thesis.					
Learning outcomes:					
Brief outline of the course: Presentation of the bachelor thesis results, answering questions of the reviewer and members of professional commission.					
Recommended literature:					
Course language: Slovak or English					
Notes:					
Course assessment Total number of assessed students: 7					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides:					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 1159					
A	B	C	D	E	FX
34.17	23.12	17.0	16.48	8.8	0.43
Provides: doc. RNDr. Monika Kassayová, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ ZBR/14	Course name: Bridge Fundamentals
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: Active participation on exercises.	
Learning outcomes: A student gets acquainted with fundamentals of the contract bridge, develops his/her logical thinking and consolidates his/her habits of positive social behaviour.	
Brief outline of the course: Bridge rules. Principles of the bidding system Standard American. Basic techniques of declarer's play. Basic techniques of the defence. Lead conventions, signals. Common bidding conventions. Selected advanced techniques of the card play. Partnership cooperation in the contract bridge. Bridge ethics.	
Recommended literature: T. Menyhért: Kurz bridžu 2013, http://new.bridgekosice.sk/kurz-bridzu-2013/ R. Pavlicek: Learn To Play Bridge!, http://www.rpbridge.net/1a00.htm ACBL SAYC System Booklet, http://ebookbrowse.net/acbl-sayc-pdf-d201415187	
Course language: Slovak or English	
Notes: Minimum number of participants is 4.	
Course assessment Total number of assessed students: 13	
abs	n
92.31	7.69

Provides: doc. RNDr. Miroslav Ploščica, CSc., prof. RNDr. Mirko Horňák, CSc.
Date of last modification: 03.05.2015
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:	
Notes:	
Course assessment Total number of assessed students: 21	
abs	n
85.71	14.29
Provides: JUDr. Renáta Bačárová, PhD., LL.M.	
Date of last modification: 06.06.2016	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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. Continuous assessment: 2 credit tests (presumably in weeks 6 and 13) and academic presentation in English. Test 1 = 40 points, test 2 = 40 points, presentation = 20 points. In order to pass the course, it is necessary to score at least 65 points as a sum of test and presentation scores. 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 - úroveň B2.	
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: McCarthy M., O'Dell F.: English Vocabulary in Use, 1994 Misztal M.: Thematic Vocabulary, 1998 Fictumova J., Ceccarelli J., Long T.: Angličtina, konverzace pro pokročilé, Barrister and Principal, 2008 Peters S., Gráf T.: Time to practise, Polyglot, 2007 www.bbclearningenglish.com Jones L.: Communicative Grammar Practice, CUP, 1985 Alexander L.G.: Longman English Grammar, Longman, 1988					
Course language:					
Notes:					
Course assessment Total number of assessed students: 191					
A	B	C	D	E	FX
38.22	21.99	18.85	9.42	7.33	4.19
Provides: Mgr. Zuzana Naďová					
Date of last modification: 01.09.2016					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KGER/ NJKK/07		Course name: Communicative Competence 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:					
Notes:					
Course assessment Total number of assessed students: 44					
A	B	C	D	E	FX
59.09	13.64	6.82	4.55	13.64	2.27
Provides: Mgr. Eva Černáková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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: kontrolná písomná práca, záverečná písomná práca stupnica hodnotenia: A 93-100, B 86-92, C 79-85, D 65-71, 64 a menej - FX aktivita na hodinách, povolené 2 absencie predmet je ukončený hodnotením	
Learning outcomes: Identifikovanie a odstránenie najfrekvencovanejších gramatických chýb v ústnom prejave, ako aj v písomnom styku. Rozvoj jazykových kompetencií študenta so zameraním na funkcie gramatiky anglického jazyka v každodennej interakcii, v komunikačnom akte na stredne pokročilej úrovni ovládania jazyka (B2 podľa Spoločného európskeho referenčného rámca pre jazyky).	
Brief outline of the course: Zvieratá a rastliny na zemi Zločin a trest Cestovanie po mori a vzduchom Jedlá a reštaurácie, národná kuchyňa Vzdelanie na vysokých školách História a viera Vybrané problémy anglickej výslovnosti, gramatiky (nepriama reč, slovotvorba, predložkové väzby, anglická syntax, kondicionály v angličtine a slovnej zásoby príslušného zamerania Vybrané funkcie praktického odborného jazyka potrebné na prácu s odborným textom	
Recommended literature: Misztal M.: Thematic Vocabulary, 1994 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:					
Notes:					
Course assessment					
Total number of assessed students: 378					
A	B	C	D	E	FX
39.42	18.25	17.2	8.73	5.82	10.58
Provides: PaedDr. Gabriela Bednáriková					
Date of last modification: 06.09.2016					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 46					
A	B	C	D	E	FX
54.35	13.04	8.7	4.35	10.87	8.7
Provides: PaedDr. Ingrid Puchalová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚFV/ POF1a/99		Course name: Computational Physics I					
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present							
Number of credits: 4							
Recommended semester/trimester of the course: 6.							
Course level: I.							
Prerequisites: ÚFV/ANM/13 or ÚFV/NUM/10							
Conditions for course completion: Continuous evaluation is based on students' activity in the classroom and work on assignments. Examination and assignments submitted electronically with the attached computer code.							
Learning outcomes: To teach students to use computer as a tool of modeling of physical reality.							
Brief outline of the course: Introduction to dynamical systems. Numerical solution of ordinary differential equations (ODE) with initial value. Boundary value problems for ODE. Discrete schemes for partial differential equations (PDE). Numerical solution of PDE. Finite difference methods, consistency, convergence, stability. Elliptic and parabolic PDE. Introduction to Monte Carlo (MC) method and applications in statistical physics. MC simulations of lattice spin systems and stochastic processes.							
Recommended literature: 1. C. Pozrikidis: Num. Comp. in Science and Engineering, Oxford Univ. Press, 1998. 2. A.L. Garcia: Numerical Methods for Physics, Prentice-Hall, 1994. 3. D. P. Landau, K. Binder: A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge Univ. Press, 2000. 4. B. A. Berg: Introduction to Markov Chain Monte Carlo Simulations and Their Statistical Analysis, http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf 5. W. Janke: Lectures on Ising model, http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html							
Course language:							
Notes:							
Course assessment Total number of assessed students: 85							
A	B	C	D	E	FX	N	P
38.82	17.65	7.06	15.29	12.94	2.35	0.0	5.88
Provides: doc. RNDr. Milan Žukovič, PhD.							

Date of last modification: 03.05.2015
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ PPFM/15		Course name: Computer-Based Physical Measurement			
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 at all labworks written laboratory records with data analysis					
Learning outcomes: Students is able to measure physical quantities and gains skills important for measuring and data processing with the help of computer. The result is deeper conceptual understanding of physical phenomena involved in the labworks that is connected mainly with the content of courses General Physics I,II,III.					
Brief outline of the course: The content of the course involves labworks in physics aimed at selected problems of General Physics I,II,III. Student learns about different methods of measurement of physical quantities, he gains skills concerning measurement and data processing with the help of computer. The set of labworks involves analysis of different phenomena followed by the data processing and written report.					
Recommended literature: 1. Halliday, Hajko, V., Daniel-Szabó, J.: Základy fyziky, Veda Bratislava 1983 2. Veis, Š., Maďar, J., Martišovits, V.: Všeobecná fyzika 1, Alfa, Bratislava, 1987 3. Hlavička, A. a kol.: Fyzika pre pedagogické fakulty, SPN Praha, 1971 4. Halliday, D., Resnick, R., Walker, J.: Fyzika, part1-4, VUT Brno, 2000					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 4					
A	B	C	D	E	FX
50.0	0.0	50.0	0.0	0.0	0.0
Provides: doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD.					

Date of last modification: 03.05.2015
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ DSMa/10		Course name: Discrete mathematics 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: Examination.					
Learning outcomes: To be familiar with some factual knowledge of combinatorics and graph theory. To understand and appreciate mathematical notions, definitions, and proofs, to solve problems requiring more than just standard recipes, and to express mathematical thoughts precisely and more rigorously.					
Brief outline of the course: Basic principles. Counting and binomial coefficients, Binomial theorem, polynomial theorem. Recurrence: Some miscellaneous problems, Fibonacci-type relations, Using generating functions, miscellaneous methods. The inclusion-exclusion principle. Rook polynomials. Introduction to graphs: The concept of graphs, paths in graphs. Connectivity. Trees, bipartite graphs. Planarity. Polyhedra. Traveling round a graph: Eulerian graphs, Hamiltonian graphs. Partitions and colourings: Vertex colourings of graphs. Edge colourings of graphs					
Recommended literature: 1. I. Anderson, A first course in discrete mathematics, Springer-Verlag London, 2001. 2. J. Matoušek and J. Nešetřil, Invitation to discrete mathematics, Oxford University Press Inc. , New York 1999.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 515					
A	B	C	D	E	FX
12.82	10.87	17.28	22.72	27.57	8.74

Provides: prof. RNDr. Stanislav Jendroľ, DrSc., RNDr. Mária Maceková, PhD., Mgr. Juraj Valiska
Date of last modification: 03.05.2015
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DSMb/10	Course name: Discrete mathematics 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: ÚMV/DSMa/10 or ÚMV/DSM3a/10	
Conditions for course completion: Two tests during the semester It is made on the base of results of two tests during the semester (50%) and a final written exam and an oral exam (50%)	
Learning outcomes: Mastered fundamental methods of graph theory. To be familiar with some possibilities of applications of graph theory	
Brief outline of the course: Introduction to graphs. Connectivity and distance in graphs. Trees, spanning subgraphs Independence and coverings. Introduction to the Ramsey theory. Introduction to the extremal graph theory. Matchings: Theorem of Hall, theorem of Berge, optimal assignment problems. Vertex colorings: Theorem of Brooks, Theorem of Erdos and Szekeres. Chromatic polynomials. Edge colourings, Theorem of Koenig. Introduction to directed graphs: Basic notions, connectivities, tournaments, acyclic graphs, base and kernel of a graph. Introduction to applications of graphs.	
Recommended literature: 1. A. Bondy and U.S.R. Murty: Graph theory, Springer-Verlag 2008 2. G. Chartrand, L. Lesniak, and P. Zhang, Graphs and digraphs, CRC Press, Boca Raton 2011 3. R. Diestel: Graph Theory, Springer-Verlag, New York, Inc. 1997 4. M.N.S. Swamy and K. Thulasiraman: Graphs, Networks and Algorithms. Willey Interscience Publ., New York 1981	
Course language: Slovak	

Notes:					
Course assessment					
Total number of assessed students: 357					
A	B	C	D	E	FX
11.76	8.96	16.25	19.05	29.13	14.85
Provides: prof. RNDr. Stanislav Jendroľ, DrSc., RNDr. Michaela Vrbjarová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 11					
A	B	C	D	E	FX
72.73	27.27	0.0	0.0	0.0	0.0
Provides: Mgr. Marianna Berinšterová, PhD., Prof. PhDr. Oľga Orosová, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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: 7

A	B	C	D	E	FX
28.57	28.57	28.57	0.0	14.29	0.0

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 03.05.2015

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ ELP1/01		Course name: Electronics Practical			
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: 6.					
Course level: I.					
Prerequisites: ÚFV/ELE1/07					
Conditions for course completion: Debate with students during practice, trial preparation and processing of theoretical and experimental results of their defense. Summary evaluation of student activities while working on set topics of study practices.					
Learning outcomes: Practical work of students in the design, construction and properties of the measurements of electronic circuits and interpretation of the results obtained to verify and consolidate the theoretical knowledge acquired in lectures on the subject Electronics.					
Brief outline of the course: 1. Combinatorial logical circuits. 2. Logical memory circuits. 3. Logical sequence circuits. 4. Rectifiers, filters, stabilizers. 5. Amplifier with bipolar transistor. 6. Stabilized DC power supplies. 7. Generators of harmonic signals. 8. Operational amplifiers and operational network interfaces. 9. Digital-to-analog converters. 10. Analog-to-digital converters. 11 Reserve.					
Recommended literature: 1. Delaney C.F.G.: Electronics for the Physicist with Applications. John Willey & Sons, New York, 1980. 2. Zbar P.B., Malvino A.P., Miller M.A.: Basic Electronics: a Text-Lab Manual. Macmillan/McGraw – Hill, New York, 1994.					
Course language: slovak or english					
Notes:					
Course assessment Total number of assessed students: 28					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides: prof. RNDr. Rastislav Varga, DrSc., RNDr. Erik Čižmár, PhD.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ ELEM1/15		Course name: Electronics			
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: 3					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites: ÚFV/VF1b/03					
Conditions for course completion: Exam					
Learning outcomes: To explain physical principles of classical electronic components and systems and technologies of their realization. To perform analysis of properties and functions of basic electronic elements, electronic circuits and information transmission and processing systems. To introduce student into basic elements and devices in area of nanoelectronics and to explain methods of their fabrication and principles of their functioning.					
Brief outline of the course: Structure, properties and physical principles of the activity of selected electronic elements. Analysis of functions and properties of basic analog and digital electronic circuits. Nanoelectronics and selected building components of nanoelectronics: graphene, carbon nanotubes, selected types of nanodevices their properties, fabrication and integration to functional systems.					
Recommended literature: 1. Brown P.B., Frantz G.N., Moraff H.: Electronics for the Modern Scientist. Elsevier, 1982. 2. Delaney C.F.G.: Electronics for the Physicist with Applications. John Willey & Sons, 1980. 3. Wolt E. L.: Quantum Nanoelectronics, An introduction to electronic nanotechnology and quantum computing, Wiley-VCh, 2009					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 143					
A	B	C	D	E	FX
26.57	24.48	28.67	8.39	4.2	7.69
Provides: Mgr. Vladimír Komanický, PhD., Prof. RNDr. Peter Kollár, CSc.					
Date of last modification: 05.10.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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. Test 1 = 40 points, test 2 = 40 points, presentation = 20 points. In order to be admitted to the final exam, a student has to score at least 65 points as a sum of both credit tests and academic presentation. Exam test = 100 points. 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: Rozvoj jazykových kompetencií študentov príslušného študijného odboru, upevňovanie a rozvíjanie všetkých jazykových zručností (hovorenie, písanie, čítanie, počúvanie) predovšetkým v odbornej/profesnej angličtine, na stredne pokročilej úrovni ovládania jazyka (B2). Dôraz sa kladie na aktívne správne používanie odbornej/profesnej angličtiny.	
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:

študijné materiály dodané vyučujúcim

Velebná, V. English for Chemists.

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

Course language:**Notes:****Course assessment**

Total number of assessed students: 2010

A	B	C	D	E	FX
31.44	25.82	18.71	11.59	9.65	2.79

Provides: PaedDr. Gabriela Bednáriková, Mgr. Marianna Škultétyová, Mgr. Zuzana Naďová, PhDr. Helena Petruňová, CSc.

Date of last modification: 01.09.2016

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ VBFM1/15	Course name: General Biophysics I
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: 3	
Recommended semester/trimester of the course: 3.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Exam.	
Learning outcomes: To provide information about the object, significance and role of biophysics in science. The main emphasis will be given on the understanding of the principles determining the structure and function of the most important biological structures (nucleic acids, proteins, biomembranes) as well as on the thermodynamics and kinetics of selected chemical and biophysical processes.	
Brief outline of the course: The definition of biophysics and its role in the science. Intra- and inter-molecular interactions in biological systems. Function and structure of the important biomacromolecules (nucleic acids, proteins, biomembranes, sugars). Conformational transitions in biopolymers: helix-coil transition in DNA, denaturation of proteins, phase transitions in biomembranes. Thermodynamics of biological processes. Gibbs energy and chemical equilibrium, chemical potential, binding constants of the ligand-macromolecule interactions, cooperativity of the binding between biological important molecules, membrane potential. Kinetics of the chemical and biophysical processes. The principles of chemical kinetics, enzymatic reactions, inhibition of the enzymes, membrane transport, introduction to the pharmacokinetics. Cell biophysics. The basic bioenergetic processes, oxidative phosphorylation, photosynthesis. Mechanisms of regulations and control processes in cells-the basic principles. Medicinal biophysics. Biophysical principles of selected diagnostic and therapeutical methods. Radiation and environmental biophysics. The influence of physico-chemical factors of the environment on the living systems.	
Recommended literature: 1. M. B. Jackson, Molecular and cellular biophysics, Cambridge University Press, 2006. 2. M. Daune, Molecular biophysics - Structures in motion, Oxford University Press, 2004. 3. R. Glaser, Biophysics, Springer Verlag, 2001. 4. M.V. Volkenštein, Biofizika, Nauka, Moskva 1988. 5. W.Hoppe and W. Lohmann, Biophysics, Springer Verlag, 1988. 6. D.G. Nichols and S.J. Ferguson, Bioenergetics 3, Academic Press, Elsevier Science Ltd., 2002. 7. D. T. Haynie, Biological thermodynamics, Cambridge University Press, 2001.	

Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 3					
A	B	C	D	E	FX
33.33	33.33	33.33	0.0	0.0	0.0
Provides: doc. Mgr. Daniel Jancura, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ VFM1a/15	Course name: General Physics I
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: 6	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Monitoring tests during the calculus lessons 1. in the 6th week 2. in the 12th week Final assessment is based on the results of : - oral examination assessment of the calculus lessons (written tests, overall performance during the lessons)	
Learning outcomes: Basic knowledge about the mechanics, molecular physics and thermodynamics.	
Brief outline of the course: Basic knowledge of the calculus, vector algebra. Standards and units. Kinematics. Dynamics. The principle of relativity in the classical mechanics. Gravitation. Mechanics of many-particle systems. The motion of rigid bodies. Deformation, elasticity. Mechanics of fluids and gases. Laws of ideal gases. Kinetic theory. The thermodynamic laws. Statistical character of the second law. Entropy. Molecular phenomena in liquids and solids. Phase transitions.	
Recommended literature: Hajko V., Daniel-Szabó J.: Základy fyziky, VEDA, Bratislava 1983. Veis Š., Maďar J., Martišovits V.: Všeobecná fyzika I., Mechanika a molekulová fyzika, ALFA Bratislava, 1987. Fuka J., Šíroká M.: Obecná fyzika I / skriptum /, PF Univ. Palackého, Olomouc 1983. Hlavička A., a kol.: Fyzika pre pedagogické fakulty, SPN, Praha 1971. Hajko V., a kol.: Fyzika v príkladoch, ALFA Bratislava 1983. Ilkovič D.: Fyzika, SVTL Bratislava, 1962. Slaviček V., Wagner J.: Fyzika pro chemiky, SNTL Praha 1971. Krempaský J.: Fyzika, ALFA Bratislava 1982.	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 165					
A	B	C	D	E	FX
29.09	16.36	19.39	11.52	20.61	3.03
Provides: doc. RNDr. Zuzana Ješková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/VFM1b/15		Course name: General Physics II			
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: 6					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites: ÚFV/VF1a/12 or ÚFV/VFM1a/15					
Conditions for course completion: Test. Oral examination.					
Learning outcomes: To obtain a general view on basic electric magnetic phenomena and ability to solve basic problems of this subject.					
Brief outline of the course: Electric field in the free space. Work of the forces in the electrostatic field. Electrostatic field and steady current. Current in electrolytes, semiconductors, gasses and vacuum. Thermoelectric effects. Magnetic field in the free space. The interaction of moving charges with the electric current. Quasi steady electric field. Electromagnetic induction. Energy of magnetic field. AC current and circuits with ac current. Multiphase AC current. Rotating magnetic field. Electric effects in the substances. Magnetic properties of the substances. Magnetic polarization. Diamagnetism and paramagnetism, Magnetic ordering. Ferromagnetism.					
Recommended literature: I. S. Grant, W.R. Phillips, Electromagnetism, John Wiley&Sons, Ltd, England, 1990					
Course language: english					
Notes:					
Course assessment Total number of assessed students: 3					
A	B	C	D	E	FX
33.33	0.0	0.0	0.0	0.0	66.67
Provides: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Adriana Zeleňáková, PhD., RNDr. Erik Čižmár, PhD.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/VFM1c/15		Course name: General Physics III			
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: 6					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites: ÚFV/VF1b/03 or ÚFV/VFM1b/15					
Conditions for course completion: Exam+ 2 succesfull test from seminars					
Learning outcomes: The objective is to acquaint the students with the basis of oscilations, waves and optics.					
Brief outline of the course: Undamped oscilations, Mathematical, Physical and Torsional pendulum, Damped oscilations, Fourier transformation, Forced oscilations. Waves, their generation, waves equation. Interference. Huyghens principle. Reflection, diffraction. Doppler effect. Waves speed in materials. Acoustics. Geometrical optics. Mirrors, lens. Fotometry. Light as electromagnetic wave. Dispersion, absorption, interference, diffraction, polarization. Photon's theory of light. Law of emision and absorption, Planck's law of radiation. Lasers.					
Recommended literature: 1. A. Hlavička et al., Fyzika pro pedagogické fakulty, SPN, 1971 2. R.P. Feynman et al., Feynmanove prednášky z Fyziky I,II,III, ALFA, 1985 3. D. Halliday et al., Fyzika-Vysokoškolská učebnice obecné fyziky, VUTIUM, 2010 4. J. Fuka, B. Havelka, Optika a atómová fyzika, SPN, 1961 5. A. Štrba, Všeobecná Fyzika 3 – Optika, ALFA, 1979					
Course language: slovak					
Notes:					
Course assessment Total number of assessed students: 45					
A	B	C	D	E	FX
31.11	22.22	26.67	15.56	4.44	0.0
Provides: prof. RNDr. Rastislav Varga, DrSc.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/VFM1d/15	Course name: General Physics IV
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: 6	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisites: ÚFV/VF1c/10 or ÚFV/VF1c/12 or ÚFV/VFM1c/15	
Conditions for course completion: written tests exam	
Learning outcomes: Basic knowledge about the atomic structure and spectra and nuclei, and elementary particles. Basic experimental methods in nuclear physics and passage of nuclear radiation through media.	
Brief outline of the course: Wave character of particles. De Broglie waves. Experimental evidence for de Broglie waves. Structure and models of atoms. Atomic spectra. Magnetic properties of atoms. X-ray spectra. Basic characteristics of the atomic nuclei. Nuclear forces and models. Radioactivity. Applications of radioactivity. Nuclear reactions. Elementary particles, basic properties and classification. Types of interactions. Resonances. Cosmic rays. Passage of particles through matter. Detectors. Accelerators.	
Recommended literature: 1. Beiser A., Úvod do moderní fyziky, Praha, 1975. 2. Vanovič J.: Atómová fyzika, Bratislava, 1980. 3. Griffiths D. , Introduction to Elementary Particles, WILEY, 1987. 4. Úlehla I., Suk M., Trka Z.: Atómy, jadra, častice, Praha, 1990. 5. Síleš E., Martinská G.: Všeobecná fyzika IV, skriptá PF UPJŠ, 2. vydanie, Košice, 1992. 5. Hajko V. and team of authors, Physics in experiments, Bratislava, 1997. 6. Nosek D., Jádra a částice (Řešené příklady), Matfyzpress, MFF UK, Praha 2005, 7. Brandt S., The harvest of a century, Discoveries of modern physics in 100 episodes, Oxford, 2009.	
Course language: slovak and english	
Notes:	

Course assessment					
Total number of assessed students: 5					
A	B	C	D	E	FX
80.0	0.0	20.0	0.0	0.0	0.0
Provides: prof. RNDr. Stanislav Vokál, DrSc., RNDr. Janka Vrláková, PhD., RNDr. Adela Kravčáková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ GEO2a/15	Course name: Geometry I
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: 5	
Recommended semester/trimester of the course: 6.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Two written tests. Written and oral examinations For continuous evaluation - max. 40 points for the written test - max. 20 points for oral exams - max. 40 points) Final score: A: 100-91 points, B: 90-81, C: 80-71, D: 70-61, E: 60-51, F: less than 51 points Note: In each of the student needs to have at least 40% max. number of points	
Learning outcomes: To acquaint students with the analytical geometry of linear and quadratic figures in Affine and Euclidean space.	
Brief outline of the course: Affine n-dimensional space - definition. Linear coordinate system. Subspaces, the parametric and non-parametric representation. The relative position of the two subspaces. Bundles of lines. The arrangement of points on the line. Convex sets. Changing the system of linear coordinates. Euclidean space - definition of (scalar and outer product). Euclidean distances and deviations subspaces. The rate of the size of convex sets. Triangle and trigonometric theorems. Conic and line.	
Recommended literature: 1. M.Sekanina, L.Boček, M.Kočandrle, J.Šedivý: Geometrie 1, SPN Praha 1986 2. M.Hejný, V.Zaťko, P.Kršňák: Geometria 1, SPN Bratislava 1985 3. J.Eliaš, J.Horváth, J.Kajan: Zbierka úloh z vyššej matematiky 1, Alfa Bratislava	

4. M.Trenkler: Materiály uvedené na Internetě.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 88					
A	B	C	D	E	FX
17.05	12.5	21.59	18.18	19.32	11.36
Provides: doc. RNDr. Dušan Šveda, CSc., Mgr. Lucia Janičková					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 731					
A	B	C	D	E	FX
60.6	13.82	12.72	8.76	3.42	0.68
Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof., Doc. PhDr. Peter Nezník, CSc., PhDr. Katarína Mayerová, PhD., Mgr. Róbert Stojka, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ IPU/10		Course name: Informatics course for teachers of mathematics			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 1 Per study period: 14 / 14 Course method: present					
Number of credits: 2					
Recommended semester/trimester of the course: 6.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Elaborating test by using a computer. Solving problems of worksheet and elaboration of seminar work.					
Learning outcomes: To develop the students' knowledge and skills in the basics of working with standard ICT, which provide opportunities for their use in mathematics education. To teach students to use the basic commands of Logo language for writing and generalization algorithms for constructing geometric shapes and basic principles of creation of constructions in the environment of dynamic geometry. To develop creative and evaluative students' ability to allow meaningful integration of modern technologies in mathematics education.					
Brief outline of the course: Basics of development of algorithms in Logo. Basics of working in the dynamic geometry environment. Educational applications and Internet in mathematics education. Use of numerical and graphical representations of data and modelling in the spreadsheet environment.					
Recommended literature: B. Brdička: The Role of Internetu in Education, 2003, http://it.pedf.cuni.cz/~bobr/role/econt.htm . S. Lukáč a kol.: IKT vo vyučovaní matematiky, Asociácia projektu Infovek 2002. M. Černochová a kol.: Využití počítače při vyučování. Portál, 1998. Z. Šťastný: Matematické a statistické výpočty v Microsoft Excelu, Computer Press 2001.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 138					
A	B	C	D	E	FX
54.35	26.81	9.42	7.25	2.17	0.0
Provides: doc. RNDr. Stanislav Lukáč, PhD.					

Date of last modification: 03.05.2015
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ UAS/13		Course name: Introduction to Astronomy			
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.					
Course level: I.					
Prerequisites:					
Conditions for course completion: 2 tests during term. Each test for 15 points. Minimal amounts of points for an exam is 20. Oral examination and test.					
Learning outcomes: Acquaint students with basic astronomy and astrophysic concepts, celestial coordinates, Solar system, formation and evolution of stars and galaxies					
Brief outline of the course: Subject of astronomy, celestial coordinates and their transformations, time and calendar, problem of 2 bodies, Astronomical telescopes, Solar system, radiation of stars and spectrum, properties of stars and their evolution, galaxies.					
Recommended literature: 1. Čeman, R., Pittich, E., 2002, Vesmír 1 - Slnečná sústava, MAPA Slovakia 2. Čeman, R., Pittich, E., 2003, Vesmír 2 - Hviezdy - Galaxie, MAPA Slovakia 3. Grygar, J., Horský, Z., Mayer, P., 1979, Vesmír, Mladá fronta 4. Kleczek, J., 2002, Velká encyklopedie vesmíru, Academia 5. Pittich, E., Kalmančok, D., 1981, Obloha na dlani, Obzor 6. Vanýsek, V.: 1980, Základy astronomie a astrofyziky, Academia					
Course language:					
Notes:					
Course assessment Total number of assessed students: 13					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides: doc. Mgr. Štefan Parimucha, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ UAD/10	Course name: Introduction to data analysis
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 1 Per study period: 14 / 14 Course method: present	
Number of credits: 2	
Recommended semester/trimester of the course: 3.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Test and individual project work. Oral presentation of the individual project work.	
Learning outcomes: To know the basic purpose of statistical data analysis, its methods and statistical thinking and understand its importance for science and practical life. To understand elementary statistical concepts. To gain experience in handling real data using spreadsheet Excel and statistical software R-Excel.	
Brief outline of the course: 1. Introduction (the basic philosophy and aim of statistical data analysis, descriptive and inductive statistics) 2. Collecting Data (types of data, random sample, randomized experiment) 3. Handling Data (visualization, summarizing – measures of center, measures of variability, relationships in data – introduction to regression and correlation) 4. Statistical inference (elementary view into estimation and testing hypothesis)	
Recommended literature: 1. Anděl, J.: Statistické metody, Matfyzpress, Praha, 1998 (in Czech) 2. Heiberger, R.M., Neuwirth, E.: R Through Excel: A Spreadsheet Interface for Statistics, Data Analysis, and Graphics, Springer, 2009 3. Rossman, A.J.: Workshop Statistics: Discovery with Data and Fathom, 3rd ed. Wiley, 2009 4. Utts, J.M.: Seeing Through Statistics, Thomson Brooks/Cole, Belmont, 2005 5. Utts, J.M., Heckard R.F.: Mind on Statistics, 3rd ed. Thomson Brooks/Cole, Belmont, 2007 6. Zvára, K., Štěpán, J.: Pravděpodobnost a matematická statistika, Matfyzpress, Praha, 2001 (in Czech)	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 220					
A	B	C	D	E	FX
30.0	26.82	32.27	10.45	0.0	0.45
Provides: doc. RNDr. Ivan Žežula, CSc., RNDr. Martina Hančová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ UVF/05	Course name: Introduction to General Physics
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: Active presentation during the lessons twice a year Solved assignments Positive results at two written tests	
Learning outcomes: Conceptual understanding of the key concepts of the topics of Mechanics and Molecular Physics gained with the help of problem solving, physical experiments and multimedial support that is inevitable precondition for the further study at University level. At the end of this course the student will be able to follow with the courses proceeding from the course General Physics I.	
Brief outline of the course: The subject is a supportive subject to the course General physics 1 - Mechanics and Molecular Physics. The content involves key concepts in mechanics and molecular physics with the help of school experiments, interactive multimedial teaching materials and physical tasks and problems. The aim is to help students to overcome difficulties connected with knowledge gained during the previous study towards the conceptual understanding of the University course content.	
Recommended literature: 1. Sutton, R.M., Demonstration Experiments in Physics, AAPT, 2003 2. Pizzo, J.: Interactive Physics demonstration, AAPT, 2001 3. Cunningham, J, Herr, N.: Hands on Physics Activities, Jossey-Bass A Wiley Imprint, 1994 4. Halliday D., Resnick R., Walker J.: Fyzika. Část 1- 5., Vysokoškolská učebnica fyziky, VUTIUM, Brno, 2000 5. Walker, J.: The Flying Circus of Physics with answers, John Wiley&Sons, 2005 6. Hajko, V., Daniel-Szabó, J. a kol. Fyzika v príkladoch, Alfa, 1983	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 200					
A	B	C	D	E	FX
37.5	16.5	23.5	15.0	7.0	0.5
Provides: doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ UVF2/07	Course name: Introduction to General Physics 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.	
Prerequisites:	
Conditions for course completion: Active presentations during the lessons twice a year Solved assignments Positive results at two written tests.	
Learning outcomes: Conceptual understanding of the key concepts of the topics of Electricity and Magnetism with the help of problem solving, physical experiments and multimedial support that is inevitable precondition for the further study at University level. At the end of the course the student will be able to follow with the courses, proceeding from the course General physics II.	
Brief outline of the course: The subject is a supportive subject to the course General Physics 2 - Electricity and Magnetism. The content involves key concepts of electricity and magnetism with the help of school experiments, interactive multimedial teaching materials and physical tasks and problems. The aim is to help students to overcome difficulties connected with knowledge gained during the previous study towards the conceptual understanding of the University course content.	
Recommended literature: 1. Sutton, R.M., Demonstration Experiments in Physics, AAPT, 2003 2. Pizzo, J.: Interactive Physics demonstration, AAPT, 2001 3. Cunningham, J, Herr, N.: Hands on Physics Activities, Jossey-Bass A Wiley Imprint, 1994 4. Halliday D., Resnick R., Walker J.: Fyzika. Část 1- 5., Vysokoškolská učebnica fyziky, VUTIUM, Brno, 2000 5. Walker, J.: The Flying Circus of Physics with answers, John Wiley&Sons, 2005	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 167					
A	B	C	D	E	FX
41.32	17.96	22.16	8.38	10.18	0.0
Provides: doc. RNDr. Zuzana Ješková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ UDM/10	Course name: Introduction to mathematics
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 2 Per study period: 14 / 28 Course method: present	
Number of credits: 3	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisites:	
Conditions for course completion: Two tests during the semester.	
Learning outcomes: Repetition of problematic sections of the secondary mathematics by interesting tasks.	
Brief outline of the course: Simplification of algebraic expressions. Real number, absolute value of real numbers; equations and inequalities. Irrational equations and inequalities. Concept of function. Linear and quadratic function; equations and inequalities. Exponential and logarithmic function; equations and inequalities. Goniometric functions; equations and inequalities. Complex numbers.	
Recommended literature: 1. V. Medek - L. Mišík - T. Šalát: REPETITÓRIUM STREDOŠKOLSKEJ MATEMATIKY, Alfa Bratislava, 1976 2. S. Richtárová - D. Kyselová: MATEMATIKA (pomôcka pre maturantov a uchádzačov o štúdium na vysokých školách), Enigma Nitra, 1998 3. O. Hudec – Z. Kimáková – E. Švidroňová: PRÍKLADY Z MATEMATIKY (pre uchádzačov o štúdium na TU v Košiciach), EF TU Košice, 1999 4. F. Peller – V. Šáner – J. Eliáš – Ľ. Pinda: MATEMATIKA – Podklady na prijímacie testy pre uchádzačov o štúdium, Ekonóm Bratislava, 2000/2001 5. F. Vesajda – F. Talafous: ZBIERKA ÚLOH Z MATEMATIKY pre stredné všeobecnovzdelávacie školy a gymnáziá, SPN Bratislava, 1973 6. J. Lukášová – O. Odvárko – B. Riečan – J. Šedivý – J. Vyšín: ÚLOHY Z MATEMATIKY pre 4. ročník gymnázia, SPN Bratislava, 1976	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 373					
A	B	C	D	E	FX
22.79	12.06	16.89	15.82	19.3	13.14
Provides: doc. RNDr. Matúš Harminec, CSc., Mgr. Lucia Janičková, Mgr. Tadeáš Gavala, RNDr. Veronika Hubeňáková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ ZMF/07	Course name: Introduction to Mathematics for Physicists
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: two control tests during semester, solving of three sets of problems, active participation. Summary evaluation of active participation during semester, completed sets of problems and two tests	
Learning outcomes: The aim is the understanding and mastery of basic mathematical concepts and skills of the vector, differential and integral calculus and ordinary differential equations required for introductory physics course.	
Brief outline of the course: The course introduces basic mathematical background to general physics courses: Mechanics & Molecular Physics and Electricity & magnetism. The content deals with understanding the basic concepts of vector algebra and analysis, differential and integral calculus and differential equations. After the course student should be familiar with the concepts: vector, scalar, vector and scalar fields, the function of one variable, derivative, integral, differential equation; to be able to interpret these concepts in real phenomena and acquire basic mathematical skills related to these concepts in problems.	
Recommended literature: 1. Hughes-Hallet, D. et al, Applied Calculus, 4th ed., John Wiley & Sons, 2010 2. Stewart, J., Calculus: early transcendentals, 6th ed., Brooks Cole, 2008 3. Zel'd'ovič, J.B., Jaglom, I.M.: Higher Math for Beginners (Mostly Physicists and Engineers), Mir, Moskva, 1988	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 174					
A	B	C	D	E	FX
39.66	18.97	20.69	10.92	9.77	0.0
Provides: doc. RNDr. Jozef Hanč, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:	
Notes:	
Course assessment Total number of assessed students: 733	
abs	n
96.32	3.68
Provides: doc. RNDr. Mária Kožurková, CSc., prof. RNDr. Katarína Cechlárová, DrSc., prof. RNDr. Beňadik Šmajda, CSc., prof. Mgr. Jaroslav Hofierka, PhD., doc. RNDr. Ivan Žežula, CSc., doc. RNDr. Vladimír Zelenák, PhD., doc. RNDr. Jozef Hanč, PhD., RNDr. Ondrej Krídlo, PhD., Mgr. Vladislav Kolarčík, PhD., RNDr. Janetta Nestorová-Dická, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ LCO/10		Course name: Linear and integer programming			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present					
Number of credits: 5					
Recommended semester/trimester of the course:					
Course level: I.					
Prerequisites: ÚMV/ALGa/10					
Conditions for course completion: Two tests, using software CASSIM, oral exam					
Learning outcomes: To learn the solving methods of linear programming					
Brief outline of the course: Formulation of linear and integer programs. Graphic solution. Simplex method, its variants and finiteness. Duality and its economic interpretation. Sensitivity analysis and parametric programming. Algorithms for integer programming.					
Recommended literature: Ch. Papadimitriou – K. Steiglitz: Combinatorial Optimization: Algorithms and Complexity, 1984 R.J. Vanderbei, Linear Programming: Foundations and Extensions (Kluwer 2001), electronic version: http://www.princeton.edu/~rvdb/LPbook/					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 130					
A	B	C	D	E	FX
21.54	13.08	22.31	21.54	20.77	0.77
Provides: doc. RNDr. Roman Soták, PhD., Mgr. Andrej Gajdoš					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ LTM/10		Course name: Logic and set theory			
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: 5.					
Course level: I.					
Prerequisites: ÚMV/MANb/10					
Conditions for course completion: Exam					
Learning outcomes: To obtain a basic knowledge on the mathematical notion of an infinity. Analysis of the notion of a proof.					
Brief outline of the course: Set as a mathematical formularization of an infinity. Properties of the set of reals. Mathematical induction. Relations and mappings. Finite and countable sets. Cardinality of continuum. Elementary cardinal arithmetics. Sentential calculus, an axiomatization. Completness Theorem. Methods of proofs. Language of predicate calculus, examples. Axiomatizations of predicate calculus and the notion of a proof. Methods of proofs in predicate calculus.					
Recommended literature: E. Mendelson, Introduction to Mathematical Logic, van Nostrand 1964.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 509					
A	B	C	D	E	FX
12.57	16.11	20.04	24.75	15.91	10.61
Provides: RNDr. Jaroslav Šupina, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ MAE/10		Course name: Macroeconomics			
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.					
Prerequisites:					
Conditions for course completion: Final mark is given based on the results of the tests written during the semester and oral exam, that evaluates the verbal argument about the studied models.					
Learning outcomes:					
Brief outline of the course: Basic macroeconomic notions: Gross domestic product, inflation, unemployment.. Analysis of goods markets. Financial markets. IS-LM model in closed economy. Open economy. IS-LM model in open economy. Models of labour market. Phillips curve, Okun law. Inflation and economic growth. High depth.					
Recommended literature: 1. Olivier Blanchard, Alessia Amighini, Francesco Giavazzi: MACROECONOMICS, A EUROPEAN PERSPECTIVE, Pearson Education, 2010 2. N.GREGORY MANKIW, MACROECONOMICS, 7th Edition, Harvard University, Worth Publishers 2009					
Course language: Slovak and English					
Notes:					
Course assessment Total number of assessed students: 59					
A	B	C	D	E	FX
18.64	15.25	23.73	22.03	13.56	6.78
Provides: prof. RNDr. Katarína Cechlárová, DrSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ MANa/10		Course name: Mathematical analysis I			
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: 1.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Two written test during semester and activity student to practice. Final evaluation is given by continuous assessment, written and oral part of the exam.					
Learning outcomes: The aim of the course is to give introductory knowledge about real numbers, sequences and series of real numbers, and to develop certain calculation skills in the field.					
Brief outline of the course: Real numbers - axioms and properties. Real functions - basic properties (monotone, bounded, even/odd, inverse), transformations of graphs of functions. Infinite sequences - operations, boundedness, monotonicity, convergence. Infinite series - operations, convergence, criteria of convergence.					
Recommended literature: 1. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006. 2. Bruckner, A. M., Bruckner J. B., Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008. 3. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 1287					
A	B	C	D	E	FX
6.22	7.69	12.12	13.36	34.73	25.87
Provides: doc. RNDr. Ondrej Hutník, PhD., RNDr. Lenka Halčinová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ MANb/10		Course name: Mathematical analysis II			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 4 / 3 Per study period: 56 / 42 Course method: present					
Number of credits: 8					
Recommended semester/trimester of the course: 2.					
Course level: I.					
Prerequisites: ÚMV/MANa/10					
Conditions for course completion: Two written test during semester and activity student to practice. Final evaluation is given by continuous assessment, written and oral part of the exam.					
Learning outcomes: The purpose of the course is to provide introductory knowledge in differential and integral calculus of real functions of one real variable and to develop computational skills in the field.					
Brief outline of the course: Limit and continuity of real functions, elementary functions. Differential calculus - derivatives of the first and of higher orders, the basic theorems of differential calculus and their use to study properties and behavior of functions. Indefinite integral - basic methods for finding primitive functions. Newton integral and its basic properties.					
Recommended literature: 1. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006. 2. Bruckner, A. M., Bruckner J. B., Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008. 3. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 811					
A	B	C	D	E	FX
8.38	8.26	12.21	18.74	36.25	16.15
Provides: doc. RNDr. Ondrej Hutník, PhD., RNDr. Lenka Halčinová, PhD.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ MAN2c/10	Course name: Mathematical analysis III
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: ÚMV/MANb/10	
Conditions for course completion: Two written test during semester and activity student to practice. Final evaluation is given by continuous assessment, written and oral part of the exam.	
Learning outcomes: The purpose of the course is to provide introductory knowledge in Riemann integral calculus of real functions of one real variable and series of real functions. To develop computational skills in the field and extend the student ability to use this theory in applications. To teach the basic knowledge of the subject matter in the syllabus and develop the ability to use this theory.	
Brief outline of the course: Definite Riemann integral - definition, elementary properties, calculation methods, applications. Improper Riemann integral. Sequences and series of real functions – pointwise and uniform convergence, properties of the limit function and the sum. Power series, Taylor series and their applications.	
Recommended literature: 1. O. Hutník: Určitý integrál, UPJŠ, Košice, 2012 (in Slovak). 2. Brannan, D.: A First Course in Mathematical Analysis, Cambridge University Press, Cambridge 2006. 3. Bruckner, A. M. - Bruckner J. B. - Thomson, B. S.: Real Analysis, Second Edition, ClassicalRealAnalysis.com, 2008. 4. Zorich, V. A.: Mathematical Analysis I, Springer-Verlag 2002.	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 620					
A	B	C	D	E	FX
7.1	6.77	12.58	18.39	43.23	11.94
Provides: doc. RNDr. Ondrej Hutník, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ MAN1d/10		Course name: Mathematical analysis IV			
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:					
Course level: I.					
Prerequisites: ÚMV/MAN1c/10 or ÚMV/MAN2c/10					
Conditions for course completion: exam					
Learning outcomes: Understanding of the basic rigorous ideas of Mathematical Analysis.					
Brief outline of the course: Metric spaces. Complete, compact and connected sets. Rings sigma-rings. Measure. Outer measure. Lebesgue measure. Measurable sets. Measurable functions. Lebesgue integral. Lebesgue integral versus Riemann integral. Calculations of Lebesgue integrals. Applications.					
Recommended literature: B. S. Thomson, J. B. Bruckner, A. M. Bruckner: Elementary Real Analysis, Prentice Hall, 2001. A. M. Bruckner, J. B. Bruckner, B. S. Thomson: Real Analysis, Prentice Hall, 1997. T. Neubrunn, B. Riečan: Miera a integrál, Veda, Bratislava, 1981. B. Riečan, T. Neubrunn: Teória miery, Veda, Bratislava, 1992. T. A. Леонтьева, В. С. Панферов, В. С. Серов: Задачи по теории функций действительного переменного, Издательство Московского университета, Москва, 1997.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 212					
A	B	C	D	E	FX
3.77	4.72	13.68	22.64	42.45	12.74
Provides: prof. RNDr. Jozef Doboš, CSc., RNDr. Jaroslav Šupina, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ MAN2d/10	Course name: Mathematical analysis IV
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: ÚMV/MANb/10	
Conditions for course completion: Continuous assessment is taken the form of small tests and two main tests during the semester. Final evaluation is given by continuous assessment (40%), written and oral part of the exam (60%).	
Learning outcomes: To teach the basic knowledge of the subject matter in the syllabus and develop the ability to use this theory. The students also learn mathematical culture, notation and mathematical way of thinking and expression.	
Brief outline of the course: 1. Metric space - Euclidean space, topological properties of points and sets in metric space. 2. Function of several real variables - basic concepts, limits and continuity. 3. Differential calculus of functions of several real variables - partial derivative, differentiability and total differential (also higher order), Taylor polynomials, directional derivative, local and global extrema, constrained local extrema. 4. Double (two dimensional) integral - definition, calculation methods, applications.	
Recommended literature: 1. L. Kluvánek, I. Mišík, M. Švec: Matematika I, II, SVTL, Bratislava, 1959 (in Slovak). 2. Z. Došlá, O. Došlý: Diferenciální počet funkcí více proměnných, vysokoškolský učebný text, Masarykova univerzita v Brně, Brno, 2003 (in Czech). 3. R. E. Williamson, H. F. Trotter: Multivariable mathematics, Prentice Hall (Pearson), Upper Saddle River, 2004. 4. B. S. Thomson, J. B. Bruckner, A. M. Bruckner: Elementary real analysis, Prentice Hall (Pearson), Lexington, 2008. 5. J. Stewart: Calculus: Early transcendentals, Brooks Cole (Thomson), Toronto, 2008. 6. P. Pták: Calculus II (A course for engineers), ČVUT v Praze, Praha, 1997. 7. J. Eliaš, J. Horváth, J. Kajan: Zbierka úloh z vyššej matematiky 3, 4, SVTL, Bratislava, 1966 (in Slovak).	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 282					
A	B	C	D	E	FX
8.51	9.57	17.73	19.86	34.75	9.57
Provides: RNDr. Lenka Halčinová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/MRUa/15		Course name: Mathematical problem solving strategies 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: 4.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Evaluation will be awarded on the basis of continuous assessment and final test.					
Learning outcomes: To acquaint students with problems and strategies for the solutions of the problems at the primary and secondary school, and with the specific problems of teaching mathematics at primary and secondary school.					
Brief outline of the course: Basic knowledge of school mathematics, different strategy of problem solution, problems from mathematical competitions concerning Equations and inequalities and their systems, Functions, Financial Mathematics.					
Recommended literature: [1] Hejný, M. a kol., Teória vyučovania matematiky 2. SPN, Bratislava 1989 (in Slovak) [2] Kopka, J., Hrozny problémů ve školské matematice, Univerzita J. E. Purkyně, Ústí nad Labem 1999 (in Czech) [3] Učebnice a zbierky úloh z matematiky ZŠ a SŠ (in Slovak)					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 121					
A	B	C	D	E	FX
31.4	23.97	23.14	11.57	9.09	0.83
Provides: doc. RNDr. Stanislav Lukáč, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/MRUB/15		Course name: Mathematical problem solving strategies 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: 5.					
Course level: I.					
Prerequisites: ÚMV/MRUa/15					
Conditions for course completion: The award is based on the results of written checks carried out during the semester. The resulting trial is granted on the basis of continuous assessment and seminar work.					
Learning outcomes: To acquaint students with problems and strategies for the solutions of the problems at the primary and secondary school, and with the specific problems of teaching mathematics at primary and secondary school.					
Brief outline of the course: Basic knowledge of school mathematics, various methods for the task, the role of mathematical competitions for thematic units Planimetry, stereometry, goniometry.					
Recommended literature: [1] Hejný, M. a kol., Teória vyučovania matematiky 2. SPN, Bratislava 1989 (in Slovak) [2] Kopka, J., Hrozny problémů ve školské matematice, Univerzita J. E. Purkyně, Ústí nad Labem 1999 (in Czech) [3] Jonson-Wilder.S., Mason.J.: Developing thinking in Geometry, Sage, 2009 [4] Učebnice a zbierky úloh z matematiky ZŠ a SŠ					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 93					
A	B	C	D	E	FX
36.56	10.75	33.33	11.83	7.53	0.0
Provides: doc. RNDr. Dušan Šveda, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/MRUc/15		Course name: Mathematical problem solving strategies 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: 6.					
Course level: I.					
Prerequisites: ÚMV/MRUb/15					
Conditions for course completion: During the semester will be 3 written exams. Evaluation A - at least 90% of the points, evaluation B - at least 80%, evaluation C at least 70%, evaluation D at least 60%, evaluation E rating of at least 50% of the points. Credits shall not be granted to a student who receives less than 50% of the points.					
Learning outcomes: Students become familiar with the tasks, methods of problem solving, solving strategies and with specific problems of teaching mathematics at primary and secondary schools to topics combinatorics, probability and statistics.					
Brief outline of the course: Basic knowledge of school mathematics, from the topics: combinatorics, probability and statistics.					
Recommended literature: Hecht, T., Sklenáriková, Z., Metódy riešenia matematických úloh, Bratislava, SPN, 1992. (in slovak) Hecht, T. a kol., Matematika pre 1.-4. ročník gymnázií a SOŠ, OrbisPictusIstropolitana, Bratislava 1999-2002. (in slovak) Krantz, S.G., Techniques of Problem Solving, AMS, 1997. Larson, L.C., Metódy riešenia matematických problémov, Bratislava, Alfa, 1990. (in slovak)					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 97					
A	B	C	D	E	FX
25.77	35.05	22.68	10.31	6.19	0.0
Provides: RNDr. Ingrid Semanišinová, PhD.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ MTM/14		Course name: Mathematics			
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: ÚMV/MAN2c/10 and ÚMV/ALG2b/10 and ÚMV/ATC/10					
Conditions for course completion: Acquiring the required number of credits in the structure defined by the study plan.					
Learning outcomes: Evaluation of student's competences with respect to the profile of the graduate.					
Brief outline of the course:					
Recommended literature:					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 13					
A	B	C	D	E	FX
23.08	23.08	23.08	30.77	0.0	0.0
Provides:					
Date of last modification: 21.05.2016					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ SDFM1/15		Course name: Methods of Data Processing in Physics			
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: 3					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites:					
Conditions for course completion: Five tasks in Matlab/Octave. Exam interview - 60%, tasks - 40%.					
Learning outcomes: Methods of data processing in physics.					
Brief outline of the course: 1. Numerical methods. 2. Regression analysis. 3. Computational physics.					
Recommended literature: Buchanan J. L., Turner P. R.: Numerical Methods and Analysis. McGraw-Hill, Inc., New York, 1992. Siegel A. F.: Statistics and Data Analysis. An Introduction. J. Wiley&Sons, NY, 1988.					
Course language: slovak, basics of english					
Notes:					
Course assessment Total number of assessed students: 0					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
Provides: RNDr. Erik Čižmár, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/MFYU/15	Course name: Methods of Physical Problems Solving
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: Successfull in two writing exams oriented on problem solving.	
Learning outcomes: Student is able to use the selected method of problem solving. He(she) is experienced in solving problems from physics olympiad with comments. Student knows how to use multimedia support and modelling for problem solving.	
Brief outline of the course: 1. Clasification of selected physics problem solving methods 2. Mechanics 3. Multimedia support for problem solving 4. Hydromechanics 5. Physics problems series 6. Thermodynamics 7. Physics olympiad 8. Physics olympiad problem solving with comments 9. Electric current 10. Qualitative physics problems 11. Mechanical oscillations 12. Dynamics modeling and problem solving	
Recommended literature: Halliday, D., Resnick, R., Walker, J.: Fyzika 1-5, Akademické nakladatelství, VUTIUM, ISBN: 8021418680, 2007	
Course language: Slovak, English	
Notes:	

Course assessment					
Total number of assessed students: 2					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides: doc. RNDr. Marián Kireš, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ MIE/13		Course name: Microeconomics			
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.					
Prerequisites:					
Conditions for course completion: The minimum necessary number of points from tests written during semester is 50%, plus the ability of verbal argumentation in the final oral exam.					
Learning outcomes: Understanding of basic principles of microeconomics and ability to apply them in practical situations.					
Brief outline of the course: Economics and economy. Supply and demand. Consumer Theory. Theory of firm. Perfect competition. Monopoly. Labour market. Market failure. Externalities and Public goods.					
Recommended literature: 1. http://umv.science.upjs.sk/cechlarova/MIE/MIE.htm - podklady k prednáška, testy na cvičenia, materiály z dennej tlače 2. H.L. Varian, Intermediate Mikroekonomics, WW Norton, 1993 3. J.M. Perloff, Microeconomics, 6th Edition, Addison Wesley, 2012 4. J. Sloman, Economics, 6th Edition, Prentice Hall, 2006					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 64					
A	B	C	D	E	FX
26.56	18.75	20.31	20.31	12.5	1.56
Provides: prof. RNDr. Katarína Cechlárová, DrSc., RNDr. Veronika Kopčová					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ MTFM/15	Course name: Modern Trends in Physics
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: 3	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisites:	
Conditions for course completion: test test	
Learning outcomes: Presentation of scientific goals and experimental facilities on the Institute of Physics. Discussion of new trends in physics of micro-world, astrophysics, biophysics and physics of condensed matter.	
Brief outline of the course: The present state of the micro-world physics – fundamental particles and the interaction forces. Theoretical description of the micro-world – the Standard Model. Experimental tests of the Standard Model - the discovery of neutral currents and intermediate W^{+-} , Z^0 bosons. Heavy ion collisions and the search for new state of matter - quark gluon plasma - on the most powerful accelerators RHIC (Relativistic Heavy Ion Collider), Brookhaven National Laboratory) , USA and on the constructed LHC (Large Hadron Collider), CERN, Geneva. Big Bang and the quark gluon plasma. Some open questions – search for Higgs boson, responsible for the mass of fundamental particles and quark gluon plasma in laboratory conditions. Practical activities – demonstration of the knowledge from lectures at identification of the real Z^0 decay events in experimental data from the LEP accelerator, CERN, Switzerland. New trends in astrophysical investigation: Solar system planets and exoplanets; cataclysmic variables, blazars and polars; black holes; quasars and active galactic nuclei, clusters of galaxies and web structure of Universe; gravitational lensing, dark matter and dark energy; gamma ray bursts. Topical problems in biophysics Low temperatures as a tool for the study of physical properties of matter. Non-Fermi liquid materials... Geometrically frustrated systems. Quantum tunneling in molecular magnets. Application of quantum magnets. Excursion in the Centre of Excellence of Low Temperature Physics. Soft magnetic nanostructure materials prepared by milling and alloying: magnetic properties of small particles, magnetization processes, domain structure, milling and alloying.	
Recommended literature: S. Chikazumi: Physics of Magnetism, J. Willey and Sons, Inc. New York, London, Sydney, 1997. C. Suryanarayana, Progress in Materials Science 46 (2001), 1-184	

F. Close : The Cosmic Onion, 1990 Cindy Schwarz :A Tour of the Subatomic Zoo, 1997 Frank Close, Michael Marten, Christine Sutton : The Particle Odyssey- A Journey to the Heart of Matter, 2002 http://vk.upjs.sk/~epog/2006/ Scientific journals	
Course language: english	
Notes:	
Course assessment Total number of assessed students: 4	
abs	n
100.0	0.0
Provides: Dr.h.c. prof. RNDr. Alexander Feher, DrSc.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ NJ//13	Course name: Naval Yachting
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 36 Per study period: 504 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:	
Notes:	
Course assessment Total number of assessed students: 2	
abs	n
100.0	0.0
Provides: doc. Mgr. Rastislav Feč, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/TCS/10		Course name: Number theory			
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present					
Number of credits: 3					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites: ÚMV/ATC/10					
Conditions for course completion: According to tests and exam.					
Learning outcomes: To obtain knowledge on quadratic congruences.					
Brief outline of the course: Chinese remainder theorem, Euler function, quadratic congruences, Pythagorean equation.					
Recommended literature: M. B. Nathanson: Elementary Methods in Number Theory. Springer, 2000. H. E. Rose: A Course in Number Theory. Clarendon Press, Oxford, 1994.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 529					
A	B	C	D	E	FX
26.28	27.6	29.87	11.15	2.65	2.46
Provides: doc. RNDr. Matúš Harminec, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 67					
A	B	C	D	E	FX
40.3	16.42	19.4	7.46	14.93	1.49
Provides: PaedDr. Renáta Orosová, PhD., Mgr. Zuzana Boberová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ FDE/15		Course name: Physics in Demonstration Experiments			
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: Seminar work – a project dealing with hands-on experiments and their role in Physics teaching.					
Learning outcomes: The goal of the course is to get better the understanding of basic physical concepts and phenomena through demonstrational physical experiments.					
Brief outline of the course: The course is aimed at the conceptual understanding of basic physical concepts and phenomena with the help of selected demonstrational experiments. The experiments concern the content of the subject Introductory physics and their realization is based on students' active participation.					
Recommended literature: 1. D.Halliday, R.Resnick, J.Walker: Fyzika, VUTIUM, Brno, 2000 2.K.Cummings, P.W.Law, E.F.Redish, P.J.Cooney: Understanding Physics, John Wiley & Sons, Inc., 2004 3.P.G.Hewitt: Conceptual Physics, tenth edition, Pearson, Addison Wesley, 2006 4.L.Onderová, M.Kireš, Z.Ješková, J.Degro: Praktikum školských pokusov II, PF UPJŠ, 2004					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 4					
A	B	C	D	E	FX
75.0	0.0	0.0	25.0	0.0	0.0
Provides: doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD., RNDr. Ľudmila Onderová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ ZFP1a/03	Course name: Physics Practical I
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present	
Number of credits: 3	
Recommended semester/trimester of the course: 2.	
Course level: I.	
Prerequisites:	
Conditions for course completion: The active work during semester and hand in all reports. Vindication of reports.	
Learning outcomes: Developing proper laboratory habits, skills and verify their theoretical knowledge.	
Brief outline of the course: The goal of this laboratory exercises is to familiarize the students with measurement methods, with kinds and calculus of mistakes, with measured results processing, and with presentation of results. The students gain practical skills, and verify their theoretical knowledge of first semester introductory physics course. They develop proper laboratory habits. Laboratory assignment: 1. Density measurements of liquids and solids. 2. Radius measurements of spherical cap. Measurements of surface using planimeter. 3. Gravitational acceleration measurements using mathematical and physical pendulum. 4. Moment of inertia measurement using physical and torsion pendulum. 5. Measurements of Young's modulus. 6. Measurement of coefficient of viscosity. 7. Measurement of the speed of sound. 8. Measurements of general gas constant and Boltzmann constant. 9. Measurements of thermal expansivity of air. 10. Measurements of thermal capacity of matter. 11. Measurement of the surface tension.	
Recommended literature: Degro, J., Ješková, Z., Onderová, L., Kireš, M.: Základné fyzikálne praktikum I. (Basic physical measurements I), Ed. PF UPJŠ Košice 2007. Standards STN ISO 31. Slovenský inštitút normalizácie v Bratislave (Slovak institute of technical standards in Bratislava), 1997.	

Ješková, Z.: Computer based experiments in thermodynamics using IP COACH,ed. PF UPJŠ in Košice, 2004.					
Course language: english					
Notes:					
Course assessment Total number of assessed students: 185					
A	B	C	D	E	FX
55.14	27.03	11.89	4.86	1.08	0.0
Provides: doc. RNDr. Adriana Zeleňáková, PhD., doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD., doc. RNDr. Ján Füzér, PhD., doc. RNDr. Jozef Hanč, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ ZFP1b/03		Course name: Physics Practical II			
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: 3.					
Course level: I.					
Prerequisites: ÚFV/ZFP1a/03					
Conditions for course completion: Measuring of experimental tasks, their appreciation in the form of a written report, defending. Further evaluation is also a good theoretical preparation for the measurement of the task.					
Learning outcomes: The objectives of the laboratory are: a. To gain some physical insight into some of the concepts presented in the lectures. b. To gain some practice in data collection, analysis and interpretation of results. c. To gain experience and report writing presentation and results.					
Brief outline of the course: Students on practical exercises are working in pairs experimental tasks in the field of electrical, electromagnetic and magnetic properties of matters.					
Recommended literature: Tumanski S, Handbook of magnetic measurements, CRC press, 2011. Fiorillo F, Characterization and Measurement of Magnetic Materials, Elsevier, 2004.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 155					
A	B	C	D	E	FX
61.94	20.65	14.84	1.94	0.0	0.65
Provides: doc. RNDr. Adriana Zelenáková, PhD., doc. RNDr. Ján Füzer, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ ZFP1c/14		Course name: Physics Practical III			
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: Measurements of experimental tasks, their evaluation in the form of a written report, which must be defended. As a part of evaluation there is also a good theoretical preparation for the measurement of the task.					
Learning outcomes: To gain some physical inside into some of the concepts presented in the lectures. b. To gain some practice in data collection, analysis and interpretation of resumance. c. To gain experience and report writing presentation and results.					
Brief outline of the course: Oscilations. Pendulum. Composition and decomposition of oscillations. Resonance. The speed of sound. Refractive index. Lense's focal length. Interference. Diffraction. Diffraction and reflection of waves. Polarization. The speed of light. Quantum optics.					
Recommended literature: Degro,J., Ješková, Z., Onderová,L., Kireš,M.: Základné fyzikálne praktikum I, PF UPJŠ Košice, 2006 P. Kollár a kol. Základné fyzikálne praktikum II, PF UPJŠ Košice, 2006 J. Brož Základy fyzikálných měření, SPN Praha, 1981.					
Course language: slovak or english					
Notes:					
Course assessment Total number of assessed students: 12					
A	B	C	D	E	FX
83.33	8.33	8.33	0.0	0.0	0.0
Provides: doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD., doc. RNDr. Ján Fúzer, PhD.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ ZFP1d/14		Course name: Physics Practical IV			
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: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion: good theoretical preparation for measurement of the tasks, written tests, measurements of the experimental tasks, written reports of measurements					
Learning outcomes: Practice in nuclear physics.					
Brief outline of the course: Introduction to measurements. Dosimetry measurements. Analysing power of coincidence circuit by random coincidences. Statistic distribution of measured quantities. Measurement time scale selection. Absorption of beta rays. Backward scattering of beta rays. Scintillation gamma spectrometer. Determination of ⁶⁰ Co preparat activity using beta-gamma coincidences. Emulsion detector. Franck Hertz experiment. Beta - spectroscopy. Energy dependence of the gamma-absorption coefficient.					
Recommended literature: 1. J.Vrláková, S.Vokál: Základné fyzikálne praktikum III, skriptá PF UPJŠ, Košice, 2012, dostupné na http://www.upjs.sk/public/media/5596/Zakladne-fyzikalne-praktikum-III.pdf					
Course language: slovak					
Notes:					
Course assessment Total number of assessed students: 23					
A	B	C	D	E	FX
86.96	13.04	0.0	0.0	0.0	0.0
Provides: RNDr. Janka Vrláková, PhD., RNDr. Adela Kravčáková, PhD.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 14					
A	B	C	D	E	FX
85.71	7.14	0.0	0.0	7.14	0.0
Provides: Mgr. Jozef Benka, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ PSTa/10		Course name: Probability and statistics 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: 4.					
Course level: I.					
Prerequisites: ÚMV/MAN1c/10 or ÚMV/MAN2c/10					
Conditions for course completion: To obtain in two written tests during the semester at least 50%. Based on written tests and oral exam.					
Learning outcomes: To provide a grounding in axiomatic theory of probability, random variables and their characteristics, special types of distributions and their applications.					
Brief outline of the course: Probability space, definitions and properties of probability. Conditional probability and independence. Random variables, their distribution function and characteristics. Mean, variance and skewness.. Discrete and absolutely continuous distributions. Quantile and characteristic functions, their properties. Relation between characteristic function and moments. Median and mode. Transformation of random variables. Special types of distributions with applications (binomial, Poisson, geometric, uniform, exponential, normal, chí-square, Student, Fisher). Central limit theorem.					
Recommended literature: 1. Skřivánková V.: Probability and Statistics, UPJŠ, Košice, 2009 2. Dekking at al.: A Modern Introduction to Probability and Statistics, Springer, 2005. 3. Pfeiffer P.E.: Probability for Applications, Springer, New York, 1990. 4. Ross S.M.: Introduction to Probabability Models, Elsevier, 2007.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 283					
A	B	C	D	E	FX
7.42	14.49	16.25	25.09	25.09	11.66
Provides: doc. RNDr. Valéria Skřivánková, CSc., RNDr. Martina Hančová, PhD.					

Date of last modification: 03.05.2015
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ PSTb/10		Course name: Probability and statistics 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:					
Course level: I., II.					
Prerequisites:					
Conditions for course completion: To obtain in two written tests during the semester at least 50%. Total evaluation based on written tests and oral exam.					
Learning outcomes: To provide a grounding in statistical methods and their applications for real life problems.					
Brief outline of the course: Random vectors, their distributions and characteristics. Joint and marginal distributions. Correlation and regression, properties of correlation coefficient. Random sample, sampling distributions and characteristics. Some important statistics and their distributions. Point estimators and their properties. Maximum likelihood method. Interval estimates, confidence interval construction. Testing of statistical hypothesis, critical region, level of significance. Methods for searching optimal critical regions. Some important parametric and nonparametric tests.					
Recommended literature: 1. Skřivánková V.: Probability and statistics, UPJŠ, Košice, 2009. 2. Dekking at al.: A modern Introduction to Probability and Statistics. Springer, 2005. 3. Sincich T.: Statistics by example, Dellen Publishing Company, New Jersey, 1990.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 160					
A	B	C	D	E	FX
18.13	21.25	19.38	24.38	11.88	5.0
Provides: doc. RNDr. Valéria Skřivánková, CSc., RNDr. Martina Hančová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 43					
A	B	C	D	E	FX
4.65	6.98	37.21	25.58	9.3	16.28
Provides: Prof. PhDr. Oľga Orosová, CSc., PhDr. Anna Janovská, PhD., Mgr. Lucia Hricová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 32					
A	B	C	D	E	FX
40.63	28.13	25.0	6.25	0.0	0.0
Provides: Mgr. Ondrej Kalina, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/ KVM/15		Course name: Quantum Mechanics I.			
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: 5					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: To become familiar with elementary principles of quantum mechanics and to illustrate its possible applications on selected examples.					
Brief outline of the course: A subject matter, experimental and theoretical foundations of quantum mechanics (QM). Basic axioms of QM. Schrödinger equation and its solution for a square potential well, harmonic oscillator and spherically symmetric potentials. Tunnel effect and over-barrier reflection. Spin and Pauli matrices. Systems of identical particles, bosons, fermions and Pauli exclusion principle.					
Recommended literature: 1. Ľ. Tóth, M. Tóthová, Kvantová a štatistická fyzika I, Rektorát Univerzity P. J. Šafárika, 1982. (in Slovak language) 2. Ľ. Skála, Úvod do kvantovej mechaniky, Academia, Praha, 2005. (in Czech language) 3. J. Pišút, L. Gomolčák, Úvod do kvantovej mechaniky, Bratislava 1983. (in Slovak language) 4. W. Greiner, Quantum Mechanics, 4th edition, Springer, Berlin, 2000. 5. A. C. Philips, Introduction to Quantum Mechanics, Wiley, Weinheim, 2003. 6. D. J. Griffiths, Introduction to Quantum Mechanics, Prentice Hall, New Jersey, 1995.					
Course language: EN - english					
Notes:					
Course assessment Total number of assessed students: 6					
A	B	C	D	E	FX
33.33	0.0	33.33	16.67	0.0	16.67
Provides: doc. RNDr. Jozef Strečka, PhD.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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: 36 Per study period: 504 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:	
Notes:	
Course assessment Total number of assessed students: 7	
abs	n
57.14	42.86
Provides: Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ VKA/10		Course name: Selected topics in algebra			
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.					
Prerequisites:					
Conditions for course completion: According to tests and to the exam.					
Learning outcomes: To obtain basic knowledge on universal algebra; to be able to apply the theory in concrete situations.					
Brief outline of the course: Relations, operations, algebraic structures. Substructures. Congruences, homomorphism theorems. Automorphism groups and endomorphism monoids. Terms, term operations, identities, varieties.					
Recommended literature: B. Jónsson: Topics in Universal Algebra, Springer-Verlag 1972 M. Kolibiar a kol.: Algebra a príbuzné disciplíny, Bratislava 1992					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 86					
A	B	C	D	E	FX
5.81	18.6	25.58	26.74	20.93	2.33
Provides: prof. RNDr. Danica Studenovská, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ VEM/10		Course name: Selected topics in elementary mathematics			
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 1 Per study period: 14 / 14 Course method: present					
Number of credits: 3					
Recommended semester/trimester of the course: 5.					
Course level: I.					
Prerequisites: ÚMV/MAN2c/10					
Conditions for course completion: exam					
Learning outcomes: Obtain knowledge about the structure of elementary mathematics with respect to advanced mathematics; the development of mathematical skills of prospective teachers.					
Brief outline of the course: Language of Mathematics; syntax and semantics; sets, relations, rational and irrational numbers, equations and inequations in reals; elementary functions					
Recommended literature: W.W. Esty: The Language of Mathematics, Montana State University, 2007. F. Klein: Elementary mathematics from an advanced standpoint, Dower Publications, 1945.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 175					
A	B	C	D	E	FX
20.57	17.14	18.86	17.71	23.43	2.29
Provides: prof. RNDr. Jozef Doboš, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 0					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof.					
Date of last modification:					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ SHM/10	Course name: Seminar on history of mathematics
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present	
Number of credits: 2	
Recommended semester/trimester of the course: 5.	
Course level: I., II.	
Prerequisites:	
Conditions for course completion: Homework, presentation on the chosen topic during the seminar. More than 91 points - evaluation of A. 81-90 points - evaluation of B. 71-80 points - rating C. 61-70 points - evaluation of D. 51-60 points - evaluation of E. Less than 50 points - FX evaluation.	
Learning outcomes: Students get an overview of the history of the development of certain mathematical disciplines and selected terms and about parallel between phylogenesis and ontogenesis of mathematical thinking.	
Brief outline of the course: Mathematics in Early Civilizations. Greek Mathematics. Mathematics in the Near and Far East (Arabia, China, India). Medieval European Mathematics. The Renaissance of Mathematics. The Beginning of Modern Mathematics.	
Recommended literature: Burton, D. M.: The History of Mathematics: An Introduction. McGraw–Hill, 2007. Devlin, K.: Jazyk matematiky. Dokořán, 2002 (in czech) Kolman, A.: Dejiny matematiky ve starověku. Academia, Praha, 1968 (in slovak) Juškevič, A. P.: Dejiny matematiky ve středověku. Academia, Praha 1977 (in slovak) Znáň, Š. a kol.: Pohľad do dejín matematiky. Alfa, Bratislava, 1986 (in slovak) Konforovič, A.G.: Významné matematické úlohy, SPN Praha, 1989 (in slovak)	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 115					
A	B	C	D	E	FX
79.13	6.09	8.7	2.61	3.48	0.0
Provides: RNDr. Ingrid Semanišínová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ SMO/10	Course name: Seminar to mathematical olympiad
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., II.	
Prerequisites:	
Conditions for course completion: Individual problem solving during seminars and homework. More than 91 points - evaluation of A. 81-90 points - evaluation of B. 71-80 points - rating C. 61-70 points - evaluation of D. 51-60 points - evaluation of E. Less than 50 points - FX evaluation.	
Learning outcomes: Students become familiar with solving problems from mathematical olympiads and mathematical competitions. They acquire theoretical basics necessary to lead mathematical group of talented children.	
Brief outline of the course: Number theory. Equations, inequations, inequalities. Word problems. Planimetry. Stereometry. Combinatorics. Pigeonhole principle. Combinatorial geometry. Probability. Math games. Interesting problems.	
Recommended literature: Brožúry z edície Škola mladých matematikov. (in slovak) Sériá brožúr: XY. ročník matematickej olympiády. (in slovak) Ziegler, G.M.: Matematika Vám to spočítá, Universum, Praha, 2011. (in czech) Zhouf, J. a kol.: Matematické příběhy z korespondenčních seminářů, Prometheus, Praha, 2006. (in czech)	
Course language: Slovak	
Notes:	

Course assessment					
Total number of assessed students: 137					
A	B	C	D	E	FX
65.69	12.41	10.22	8.76	2.92	0.0
Provides: RNDr. Ingrid Semanišínová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 15					
A	B	C	D	E	FX
26.67	20.0	40.0	6.67	6.67	0.0
Provides: Mgr. Zuzana Boberová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: KPO/SPKV/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:					
Notes:					
Course assessment Total number of assessed students: 0					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
Provides: prof. PhDr. Marcela Gbúrová, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 125					
A	B	C	D	E	FX
20.8	21.6	26.4	22.4	8.0	0.8
Provides: Mgr. Eva Černáková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:		
Notes:		
Course assessment Total number of assessed students: 7947		
abs	n	neabs
87.96	8.12	3.93
Provides: PaedDr. Imrich Staško, doc. PhDr. Ivan Šulc, CSc., doc. Mgr. Rastislav Feč, PhD., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, Mgr. Peter Bakalár, PhD., doc. PaedDr. Ivan Uher, PhD., PaedDr. Milena Švedová, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško		
Date of last modification: 03.05.2015		
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:		
Notes:		
Course assessment Total number of assessed students: 7437		
abs	n	neabs
85.03	10.93	4.03
Provides: PaedDr. Imrich Staško, doc. Mgr. Rastislav Feč, PhD., doc. PhDr. Ivan Šulc, CSc., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, doc. PaedDr. Ivan Uher, PhD., Mgr. Peter Bakalár, PhD., PaedDr. Milena Švedová, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD.		
Date of last modification: 03.05.2015		
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:		
Notes:		
Course assessment Total number of assessed students: 4650		
abs	n	neabs
89.63	4.71	5.66
Provides: PaedDr. Imrich Staško, doc. Mgr. Rastislav Feč, PhD., doc. PhDr. Ivan Šulc, CSc., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, doc. PaedDr. Ivan Uher, PhD., PaedDr. Milena Švedová, PhD., Mgr. Peter Bakalár, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško		
Date of last modification: 03.05.2015		
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:		
Notes:		
Course assessment Total number of assessed students: 3884		
abs	n	neabs
85.79	6.77	7.44
Provides: PaedDr. Imrich Staško, doc. Mgr. Rastislav Feč, PhD., doc. PhDr. Ivan Šulc, CSc., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, PaedDr. Milena Švedová, PhD., Mgr. Peter Bakalár, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD.		
Date of last modification: 03.05.2015		
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.		

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/STA1N/15		Course name: Statistical Physics			
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: ÚFV/KVM/08 or ÚFV/KVM/15					
Conditions for course completion: Written test - maximum 30 points. Oral exam . maximum 70 points					
Learning outcomes: To acquaint students with basic principles of statistical mechanics and to illustrate possibilities of its applications in selected cases.					
Brief outline of the course: Basic laws of thermodynamics. The phase space, statistical ensemble, distribution function, canonical invariance of the phase volume. Liouville theorem, the ergodic problem and Tolman hypothesis. Microcanonical, canonical and grandcanonical ensembles. The virial and equipartition theorem. Applications of statistical physics.					
Recommended literature: 1) L. Reichl, A modern Course in Statistical Mechanics, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim (2009). 2.) R.K. Pathria, Statistical Mechanics, Butterworth.Heinemann, Oxford (2001).					
Course language: Slovak, English					
Notes:					
Course assessment Total number of assessed students: 13					
A	B	C	D	E	FX
30.77	15.38	23.08	15.38	15.38	0.0
Provides: prof. RNDr. Michal Jaščur, CSc., RNDr. Jana Čisárová, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ SVL1/03	Course name: Structure and Properties of Solids
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: 5	
Recommended semester/trimester of the course: 5.	
Course level: I.	
Prerequisites:	
Conditions for course completion: 50% maintained output, written test 50% final exam	
Learning outcomes: To explain basic problems of Solid State physics. The course is mainly oriented on fundamental type of lattices, symmetry and crystal structure, X-ray diffractometry, Thermal properties, mechanical properties and conductivity of solids. The course allows to continue education in specialized topics of Condensed Matter like: Magnetic properties, Low temperature physics, Experimental methods of CM, Semiconductors etc.	
Brief outline of the course: Periodic array of atoms. Fundamental type of lattices. Index systems for crystal planes. Simple crystal structure. Symmetry and crystal structure. Point and space groups. Crystal binding and elastic constants. Wave diffraction and the reciprocal lattice. X-ray diffractometry. Bragg's law, Laue conditions, scattering of x-rays, Neutrons and neutron scattering, CW - diffractometer, Ewald's sphere, Diffraction on powder samples, Structure factor, Occupation factor, Atomic displacement factor. Thermal properties. Phonon heat capacity, thermal conductivity. Free electron Fermi gas. Energy bands. Semiconductor crystals. Superconductivity.	
Recommended literature: 1. Ch. Kittel, Solid State Physics, Springer, 1985. 3. Fundamentals of Powder Diffraction and Structural Characterization of Materials, Vitalij K. Pecharsky & Peter Y. Zavalij, Kluwer Academic Publishers, 2003. 4. Structure Determination from Powder Diffraction Data, Edited by W.I.F. David, K. Shankland, L.B. McCusker, C. Bärlocher, Oxford University Press, 2006	
Course language: english	
Notes:	

Course assessment					
Total number of assessed students: 37					
A	B	C	D	E	FX
45.95	18.92	16.22	13.51	2.7	2.7
Provides: prof. RNDr. Pavol Sovák, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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	
Notes:	

Course assessment	
Total number of assessed students: 19	
abs	n
100.0	0.0
Provides: doc. RNDr. Stanislav Lukáč, PhD., doc. RNDr. Jozef Hanč, PhD., doc. RNDr. Ľubomír Šnajder, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚMV/ SVK/10		Course name: Students scientific conference			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of credits: 4					
Recommended semester/trimester of the course:					
Course level: I., II.					
Prerequisites:					
Conditions for course completion:					
Learning outcomes: Individual scientific work of students. Publishing of obtained results in a written form and as a public presentation.					
Brief outline of the course:					
Recommended literature: With respect to the research problematics (article in journals, books).					
Course language: Slovak or English					
Notes:					
Course assessment Total number of assessed students: 57					
A	B	C	D	E	FX
98.25	1.75	0.0	0.0	0.0	0.0
Provides:					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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: 36 Per study period: 504 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:	
Notes:	
Course assessment Total number of assessed students: 92	
abs	n
35.87	64.13
Provides: Mgr. Peter Bakalár, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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: 36 Per study period: 504 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:	
Notes:	
Course assessment Total number of assessed students: 251	
abs	n
43.82	56.18
Provides: Mgr. Marek Valanský, MUDr. Peter Dombrovský	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/TMEU/15		Course name: Theoretical Mechanics			
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: 3					
Recommended semester/trimester of the course: 3.					
Course level: I.					
Prerequisites: ÚFV/VF1a/12 or ÚFV/VFM1a/15					
Conditions for course completion: Two tests to deal with specific tasks mechanics. Final examination.					
Learning outcomes: To acquaint students with principles of the theoretical mechanics.					
Brief outline of the course: Mechanics of particle system with constraints. Principle of virtual work and d'Alembert's principle. Lagrange's function and Lagrange's equations of motion. Hamilton's principle, Hamilton's function and Hamilton's canonical equations of motion. Mechanics of rigid body. Kinematics and dynamics of rigid body.					
Recommended literature: 1. Meirovitch L.: Methods of Analytical dynamics, McGraw-Hill, New York, 1970. 2. Taylor T.T.: Mechanics: Classical and Quantum, Pergamon Press, Oxford, 1976. 3. Strelkov S.P.: Mechanics, Mir Publishers, Moscow, 1985. 4. Greiner W.: Classical Mechanics, Springer-Verlag, Berlin, 2010. 5. Goldstein H.: Classical Mechanics, Addison-Wesley, London, 1970. 6. Barger V., Olsson M.: Classical Mechanics: A Modern Perspective, McGraw-Hill, London, 1973.					
Course language: Slovak					
Notes:					
Course assessment Total number of assessed students: 4					
A	B	C	D	E	FX
50.0	25.0	0.0	25.0	0.0	0.0
Provides: prof. RNDr. Andrej Bobák, DrSc.					
Date of last modification: 03.05.2015					

Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, 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:					
Notes:					
Course assessment Total number of assessed students: 201					
A	B	C	D	E	FX
23.38	32.34	28.36	9.45	1.49	4.98
Provides: PaedDr. Renáta Orosová, PhD., Mgr. Zuzana Boberová, PhD., Mgr. Stanislava Marosi, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
Course ID: ÚFV/TEP1/03		Course name: Theory of the Electromagnetic Field			
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: ÚFV/VFM1b/15 or ÚFV/VF1b/03					
Conditions for course completion: Two tests to deal with specific tasks theory of the electromagnetic field. Examination.					
Learning outcomes: To acquaint students with principles of a theory of the electromagnetic field.					
Brief outline of the course: Maxwell equations in vacuum. Scalar and vector potentials. Conservation laws. Electrostatic field. Static magnetic field. Maxwell equations in macroscopic media. Quasistatic electromagnetic field. Electromagnetic waves. Radiation of electromagnetic waves.					
Recommended literature: 1. Jackson J.D.: Classical Electrodynamics, John Wiley, New York, 1975. 2. Rao N.N.: Basic Electromagnetics with Applications, Prentice-Hall, New Jersey, 1972. 3. Greiner W.: Classical Electrodynamics, Springer-Verlag, New York, 1998.					
Course language: 1. Slovak, 2. English					
Notes:					
Course assessment Total number of assessed students: 248					
A	B	C	D	E	FX
27.02	8.06	17.74	23.39	15.73	8.06
Provides: prof. RNDr. Andrej Bobák, DrSc., RNDr. Tomáš Lučivjanský, PhD.					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ ZKLS//13	Course name: Winter Ski Training Course
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 36 Per study period: 504 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:	
Notes:	
Course assessment Total number of assessed students: 81	
abs	n
32.1	67.9
Provides: PaedDr. Imrich Staško, doc. PhDr. Ivan Šulc, CSc.	
Date of last modification: 03.05.2015	
Approved: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Ondrej Hutník, PhD.	