

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ AMCU/15		<b>Course name:</b> Aktivizujúce metódy výučby chémie			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 29					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ ASFU/15		<b>Course name:</b> Astrophysics			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Test within the curriculum presented during the course; seminar essay. Oral exam with preparation; 3 questions within the curriculum presented during the course.					
<b>Learning outcomes:</b> Become acquainted with basic knowledge about the structure and evolution of the universe.					
<b>Brief outline of the course:</b> The stars, their basic properties, structure and evolution. Structure and distribution of matter in the universe. Cosmological theories, formation, evolution and future of the universe.					
<b>Recommended literature:</b> 1. Carroll, B. W., Ostlie, D. A., An Introduction to Modern Astrophysics, Addison-Wesley Publishing Company, Reading, Massachusetts, 1996; 2. Contopoulos, D. Kotsakis, Cosmology, the structure and evolution of the Universe, Springer, 1984; 3. Narlikar, J.V., An Introduction to Cosmology, Cambridge University Press, Cambridge, 2002; 4. Pasachoff, J.M., Filippenko, A., The Cosmos: Astronomy in the New Millennium, Cambridge University Press, 2013;					
<b>Course language:</b> Slovak, English					
<b>Course assessment</b> Total number of assessed students: 8					
A	B	C	D	E	FX
87.5	12.5	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Rudolf Gális, PhD.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteeprof. RNDr. Mária Ganajová, CSc. Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ BTC/03		<b>Course name:</b> Biotechnology			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> test					
<b>Learning outcomes:</b> Students obtained the knowledge of basic biotechnological processes and their applications in agriculture, industry, food production and medicine.					
<b>Brief outline of the course:</b> Classification of biotechnology, disciplines and subjects which are involved with biotechnology. The fermentation processes, types of bioreactors, impellers, principles of microbial growth, media and substrates for fermentation processes. The bioremediation, production and application of biogas, in-vessel composting. Micro-organisms used to preparation amino acids, their fermentation preparation, isolation and possible uses. The methods of classical Plant Biotechnology. Ethanol fermentation, spirits, production of wine and beer. The biological filters, nutrient removal and the membrane bioreactors. Antibiotics.					
<b>Recommended literature:</b> E.M.T. El-Mansi et al. ,Fermentation microbiology ang biotechnology,second edition, 2007 Y.H. Hui, Food biochemistry & food processing,Blackwell Publishing 2006 J.E. Smith, Biotechnology, Cambridge university press 2009					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 100					
A	B	C	D	E	FX
47.0	22.0	18.0	7.0	6.0	0.0
<b>Provides:</b> RNDr. Danica Sabolová, PhD.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ CHE2/03		<b>Course name:</b> Chemical Excursion			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 1t <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 88					
A	B	C	D	E	FX
94.32	5.68	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Zuzana Vargová, Ph.D.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ DCH1/15		<b>Course name:</b> Didaktika chémie I			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 1 / 2 <b>Per study period:</b> 14 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b> ÚCHV/SPC1a/03					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 78					
A	B	C	D	E	FX
70.51	19.23	7.69	1.28	1.28	0.0
<b>Provides:</b> doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ DCH2/15		<b>Course name:</b> Didaktika chémie II			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 1 / 2 <b>Per study period:</b> 14 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b> ÚCHV/DCH1/15					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 78					
A	B	C	D	E	FX
76.92	15.38	6.41	1.28	0.0	0.0
<b>Provides:</b> doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ DEJ1/99	<b>Course name:</b> History of Physics
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> written test and thesis exam	
<b>Learning outcomes:</b> Basic facts in the history of physics.	
<b>Brief outline of the course:</b> Evolution of knowledge before Galileo. Evolution of physics within the mechanical picture of the world. Evolution and limits of classical physics, phase of breakthrough in physics. Origin and evolution of the theory of relativity. Quantum physics and prospects of further evolution of physics and their application. Contemporary state of physical research and its application in technology, natural sciences and philosophy. Position of physics in our society.	
<b>Recommended literature:</b> 1. R.Zajac, J.Chrapan: Dejiny fyziky, skriptá, MFF UK, Bratislava, 1982. 2. V.Mališek: Co víte o dějinách fyziky, Horizont, Praha, 1986. 3. I.Kraus, Fyzika v kulturních dějinách Evropy, Starověk a středověk, Nakladatelství ČVUT, Praha, 2006. 4. A.I.Abramov: Istoria jadernoj fiziky, KomKniga, Moskva, 2006. 5. L.I.Ponomarev: Pod znakom kvanta, Fizmatlit, Moskva, 2006. 6. I.Kraus, Fyzika v kulturních dějinách Evropy, Od Leonarda ke Goethovi, Nakladatelství ČVUT, Praha, 2007. 7. I.Kraus, Fyzika od Thaléta k Newtonovi, Academia, Praha, 2007. 8. I.Štoll, Dějiny fyziky, Prometheus, Praha, 2009. 9. www-pages. 10.Brandt S., The harvest of a century, Discoveries of modern physics in 100 episodes, Oxford, 2009.	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 24	

A	B	C	D	E	FX
83.33	8.33	8.33	0.0	0.0	0.0
<b>Provides:</b> prof. RNDr. Stanislav Vokál, DrSc.					
<b>Date of last modification:</b> 26.09.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/DEX/15		<b>Course name:</b> Selected Demonstration Experiments			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Seminar work – a project dealing with hands-on experiments and their role in Physics teaching. Oral examination					
<b>Learning outcomes:</b> The goal of the course is to develop pedagogic skills and creativity of future Physics teachers through non-traditional physical experiments.					
<b>Brief outline of the course:</b> The aim of the lecture is to show a lot of non-traditional physical experiments which can help students understand physical phenomena and find their connection with everyday life. The experiments are mainly hands-on ones which can be performed with simple tools and don't require any special equipment. The experiments are carried out by students themselves. Through these experiments students are able to gain practical skills, develop experimental habits and verify their theoretical knowledge.					
<b>Recommended literature:</b> 1. Onderová L.: Netradičné experimenty vo vyučovaní fyziky, MC Prešov, 2002 2. Lorbeer, G.L., Nelsonová, L.W.: Fyzikální pokusy pro děti, Portál, Praha, 1998 3. Kostič, Ž.: Medzi hrou a fyzikou, Alfa, Bratislava, 1971 4. Kireš, M., Onderová, L.: Fyzika každodenného života v experimentoch a úlohách, JSMF Bratislava 2001, ISBN 80-7097-446-X 5. <a href="http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm">http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm</a>					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 2					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> PaedDr. Iveta Štefančinová, Ph.D.					
<b>Date of last modification:</b> 01.03.2018					

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová,  
CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/DF1a/15		<b>Course name:</b> Didactics of Physics I			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> teaching plan for two lessons 10p micro teaching activities 20p educational project 20p answering questions during the course 10p end-of course oral examination 40p					
<b>Learning outcomes:</b> Knowledge and skills in the field of Physics education, overview about the problems of Physics education, basic skills necessary to prepare and guide educational activities, school experiments, problem solving and to use modern media for physics education.					
<b>Brief outline of the course:</b> Within the Didactics of Physics subject the core problems of physics education are introduced and case studies of their solving are interpreted. Strategies on design and implementation of educational activities, their evaluation and the use of modern media are introduced and corresponding skills are trained.					
<b>Recommended literature:</b> 1.J. Janovič a kol.: Didaktika fyziky, MFF UK Bratislava, 1990 2.J. Janovič a kol.: Vybrané kapitoly didaktiky fyziky, MFF UK Bratislava, 1999 3.E. Kašpar a kol.: Didaktika fyziky, SPN Praha, 1978 4.E. Mechlová: Didaktika fyziky 1, 2, PdF Ostrava, 1989 5.J. Fenclová: Úvod do teórie a metodológie didaktiky fyziky, SPN Praha, 1982 Primary school textbooks for Physics actuall didactic publications					
<b>Course language:</b> Slovak, English					
<b>Course assessment</b> Total number of assessed students: 9					
A	B	C	D	E	FX
55.56	44.44	0.0	0.0	0.0	0.0

<b>Provides:</b> doc. RNDr. Marián Kireš, PhD., PaedDr. Iveta Štefančínová, Ph.D.
<b>Date of last modification:</b> 01.03.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/DF1b/15	<b>Course name:</b> Didactics of Physics II
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present	
<b>Number of credits:</b> 4	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b> ÚFV/DF1a/15	
<b>Conditions for course completion:</b> teaching plan for two lessons 10p micro teaching activities 20p educational project 20p answering questions during the course 10p end-of course oral examination 40p	
<b>Learning outcomes:</b> knowledge and skills in the field of Physics education, overview about the problems of Physics education, basic skills necessary to prepare and guide educational activities, school experiments, problem solving and to use modern media for physics education	
<b>Brief outline of the course:</b> 1. Didactic methods, forms and tools in physics education 2. Graphs in education 3. Control, evaluation and assessment of students results, 4. Tests 5. Everyday physics and its application in education 6. Computer based measurements: 7. Using of Internet and multimedia in education 8. IBSE 9. Informal activities to support physics education 10. Life long learning, science teacher training 11. 12. Semestral project presentation	
<b>Recommended literature:</b> 1.J. Janovič a kol.: Didaktika fyziky, MFF UK Bratislava, 1990 2.J. Janovič a kol.: Vybrané kapitoly didaktiky fyziky, MFF UK Bratislava, 1999 3.E. Kašpar a kol.: Didaktika fyziky, SPN Praha, 1978 4.E. Mechlová: Didaktika fyziky 1, 2, PdF Ostrava, 1989 5.J. Fenclová: Úvod do teórie a metodológie didaktiky fyziky, SPN Praha, 1982 6.Vachek, J. a kol.: Fyzika pre 1. ročník gymnázia. SPN, Bratislava, 1984. 7.Svoboda, E. a kol. Fyzika pre 2. ročník gymnázia. SPN, Bratislava, 1985. 8.Lepil, O. a kol.: Fyzika pre 3. ročník gymnázia. SPN, Bratislava, 1986.	

9. Pišút, J. a kol.: Fyzika pre 4. ročník gymnázia. SPN, Bratislava, 1987.  
 10. Scholtz, E., Kireš, M.: Fyzika - Kinematika pre osemročné gymnáziá, SPN, Bratislava, 2001, 104 strán, ISBN 80-08-02848-3  
 11. Blaško, M., Gajdušek, J., Kireš, M., Onderová, Ľ.: Molekulová fyzika a termodynamika pre osemročné gymnáziá, SPN, Bratislava, 2004, 120 strán, ISBN 80-10-00008-6  
 12. Scholtz, E., Kireš, M.: Fyzika - Dynamika pre osemročné gymnáziá, SPN, Bratislava, 2007, 231 strán, ISBN 80-10-00013-2  
 School textbooks for Physics education at upper secondary level

**Course language:**

Slovak, English

**Course assessment**

Total number of assessed students: 9

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

**Provides:** doc. RNDr. Marián Kireš, PhD., PaedDr. Iveta Štefančinová, Ph.D.

**Date of last modification:** 01.03.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteeprof. RNDr. Mária Ganajová, CSc. Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/DPOU/14		<b>Course name:</b> Diploma Thesis and its Defence			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of credits:</b> 15					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b> ÚCHV/DPP3/14					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 52					
A	B	C	D	E	FX
78.85	19.23	1.92	0.0	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ DPOU/14		<b>Course name:</b> Diploma Thesis and its Defence			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of credits:</b> 15					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Preparation and submission of diploma thesis in printed and electronic form. Presentation of diploma thesis results and its defence in front of examination board.					
<b>Learning outcomes:</b> Knowledge and skills connected with selected problem analysis and presentation of diploma thesis results in front of experts.					
<b>Brief outline of the course:</b> Preparation and submission of diploma thesis to central registration system. Printed version for reviewing. Presentation of diploma thesis results and answers to the questions of reviewrs. Discussion on the content of diploma thesis and answers to the questions of examination board members.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 18					
A	B	C	D	E	FX
77.78	11.11	11.11	0.0	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ DPP1/14	<b>Course name:</b> Diploma Project I
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 1	
<b>Recommended semester/trimester of the course:</b> 1.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> regular consultations with diploma thesis supervisor about the progress of diploma project development, design of investigation plan	
<b>Learning outcomes:</b> Student has studied the theoretical background, formulates research questions, has designed investigation plan, has presented first results, eventually.	
<b>Brief outline of the course:</b> Development of diploma project	
<b>Recommended literature:</b> Recommended literature that is included in the diploma thesis assignments Regulations for diploma thesis preparation template for diploma thesis	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 10	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 01.03.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ DPP1/14	<b>Course name:</b> Diploma Project I
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 1	
<b>Recommended semester/trimester of the course:</b> 1.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 46	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ DPP2/14	<b>Course name:</b> Diploma Project II
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 45	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ DPP2/14	<b>Course name:</b> Diploma Project II
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> regular consultaions with diploma thesis supervisor about the progress of diploma project development and about the investigation regular consultations study of available resources connected with the diploma thesis assignments first results	
<b>Learning outcomes:</b> Student understands the methods of investigation and he gains first results.	
<b>Brief outline of the course:</b> Work on the diploma project with regard to the assignemnts of the diploma thesis	
<b>Recommended literature:</b> Recommended literature that is included in the diploma thesis assignments Regulations for diploma thesis preparation template for diploma thesis	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 10	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 01.03.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ DPP3/14	<b>Course name:</b> Diploma Project III
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> regular consultations with diploma thesis supervisor about the progress of diploma project development and about the project results	
<b>Learning outcomes:</b> Student has enough knowledge to prepare a theoretical part of the diploma thesis and for practical part based on the problem analysis and drawing conclusions.	
<b>Brief outline of the course:</b> Work on the project with regard to the diploma thesis assignments	
<b>Recommended literature:</b> Recommended literature that is included in the diploma thesis assignments Regulations for diploma thesis preparation template for diploma thesis	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 18	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 01.03.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ DPP3/14	<b>Course name:</b> Diploma Project III
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 51	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/DSU1a/10	<b>Course name:</b> Diplomový seminár z chémie pre XCH
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 8	
abs	n
100.0	0.0
<b>Provides:</b> doc. RNDr. Mária Ganajová, CSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ DSU1b/10	<b>Course name:</b> Diplomový seminár z chémie pre XCH
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 6	
abs	n
100.0	0.0
<b>Provides:</b> doc. RNDr. Mária Ganajová, CSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ DTCU/15		<b>Course name:</b> Digitálne technológie vo výučbe chémie			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 10					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ FEP1/07	<b>Course name:</b> Microcomputer Based Science Laboratory
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 1 / 2 <b>Per study period:</b> 14 / 28 <b>Course method:</b> present	
<b>Number of credits:</b> 4	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> test 30 points active participation 10 points project (development of mathematical model, videomeasurement and physical experiment) 60 points The final assessment is based on the sum of partial results	
<b>Learning outcomes:</b> After the course student gains an overview about the possible use of digital technologies to support active learning in science. He gains skills to use and develop activities on measuring data with the help of datalogging, measuring on picture and viderecording and modeling natural processes. Student is able to implement such activities in science teaching to support active learning and conceptual understanding.	
<b>Brief outline of the course:</b> The aim of the course is to present the use of digital technologies to enhance active learning in science with the help of datalogging, videomeasurement and modeling tools. Mathematical modeling is based on dynamical modeling of natural phenomena. Within the course students carry out computer-based experiments, videomeasurements and measurement on picture and create corresponding models. The activities involve selected topics of secondary schools science. The emphasize is put on the methods of implementation of the activities with regard to active students ' learning.	
<b>Recommended literature:</b> [1]Koubek, V., Pecen, I.: Fyzikálne experimenty a modely v školskom mikropočítačom podporovanom laboratóriu, Univerzita Komenského, Bratislava, 1999 [2]Príručka COACH [3] <a href="http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm">http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm</a>	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 34	

A	B	C	D	E	FX
44.12	44.12	11.76	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Zuzana Ješková, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ FEP1/15	<b>Course name:</b> School Computer-Based Physical Laboratory
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> The final assessment is based on the sum of partial results Test 30 points active participation 10 points project (development of mathematical model, videomeasurement and physical experiment) 60 points	
<b>Learning outcomes:</b> After the course student gains an overview about the possible use of digital technologies to support active learning in physics. He gains skills to use and develop activities on measuring data with the help of datalogging, measuring on videorecordings and picture and modeling physical processes. Student is able to implement such activities in physics teaching to support active learning and conceptual understanding.	
<b>Brief outline of the course:</b> The aim of the course is to present the use of digital technologies to enhance active learning in science with the help of datalogging, videomeasurement, measurement from the picture and modeling tools. Mathematical modeling is based on dynamical modeling of physical phenomena. Within the course students carry out computer-based experiments, videomeasurements and measurement on the picture and create corresponding models. The activities involve selected topics of secondary school physics. The emphasize is put on the methods of implementation of the activities with regard to active students' learning.	
<b>Recommended literature:</b> [1]Koubek, V., Pecen, I.: Fyzikálne experimenty a modely v školskom mikropočítačom podporovanom laboratóriu, Univerzita Komenského, Bratislava, 1999 [2]Príručka COACH [3] <a href="http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm">http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm</a>	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 8	

A	B	C	D	E	FX
87.5	12.5	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Zuzana Ješková, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ FKS/15		<b>Course name:</b> Solid State Physics			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> oral examination					
<b>Learning outcomes:</b> A general introductory course in solid state physics and material science.					
<b>Brief outline of the course:</b> Crystal structures and methods of structure analysis. Defects in crystalline solids. Chemical bonding in solids. Thermal properties of crystal lattice. "Free" electrons in metals. The electronic band structure of solids. Transport phenomena in metals and semiconductors. Superconductivity and superfluidity. Magnetic properties of solids. New problems of condensed matter physics.					
<b>Recommended literature:</b> H. Ibach, H. Lüth: Solid-State Physics. Springer - Verlag, Berlin, 1993. Ch. Kittel: Introduction to Solid State Physics. John Wiley & Sons, Inc. 1976.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 7					
A	B	C	D	E	FX
42.86	42.86	14.29	0.0	0.0	0.0
<b>Provides:</b> Dr.h.c. prof. RNDr. Alexander Feher, DrSc., prof. RNDr. Peter Kollár, DrSc., prof. Ing. Martin Orendáč, CSc.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ FPK1/15		<b>Course name:</b> Phase Transitions and Critical Phenomena			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Grade					
<b>Learning outcomes:</b> To acquaint students with based problems of the phase transitions and critical phenomena.					
<b>Brief outline of the course:</b> Thermodynamics of phase transitions. Classification of phase transitions. Critical phenomena, universality. Microscopic models of the magnetic phase transitions. Ising model in one and two dimensions. Mean field theory of the Ising model. Landau theory of phase transitions.					
<b>Recommended literature:</b> 1. Stanley H.G.: Introduction to Phase Transitions and Critical Phenomena, Clarendon Press Oxford, Oxford, 1971. 2. Reichl L.E.: A Modern Course in Statistical Physics, University of Texas Press, Austin, 1980. 3. Plischke M., Bergersen B.: Equilibrium Statistical Physics, World Scientific, Singapore, 1994. 4. Kadanoff L.P.: Statistical Physics, Statistics, Dynamics and Renormalization, World Scientific, Singapore, 2000.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 44					
A	B	C	D	E	FX
72.73	9.09	4.55	6.82	6.82	0.0
<b>Provides:</b> prof. RNDr. Andrej Bobák, DrSc.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ FUMCH1/03	<b>Course name:</b> Introduction to Material Chemistry
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present	
<b>Number of credits:</b> 5	
<b>Recommended semester/trimester of the course:</b> 1., 3.	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Seminar work. Examination.	
<b>Learning outcomes:</b> To present the different types of functional materials, their atomic structure and mechanical properties.	
<b>Brief outline of the course:</b> Historical perspectives. Materials and human being. Participation of natural science in material engineering. Material revolutions. Classification of materials. Atomic structure and interatomic bonding. Amorphous and crystalline materials. Mechanics of materials. Imperfections in solids. Crystal lattice defects. Point defects. Line defects. Dislocations. Diffusion. Diffusion mechanisms. Deformations and failures, re-crystallization. Deformations. Plastic deformations. Solid solutions. Intermediary phases. Phases in ceramic systems. Phase transformations. Crystallization of metals. Phase identification methods. Stress and strain. Structure of metallic and ceramic materials. Alloys. Steel. Light metals. Metallic glasses. Gold. Inorganic non-metallic materials. Ceramic construction materials. Ceramic tools. Bio-ceramics. Ceramics in cosmos. High-temperature superconductors. Glass. Building binders. Polymers. Essence of polymers. Thermoplastics. Reactoplastics. Polymer structure. Mechanical properties of polymers. Natural materials. Wood. Bones. Teeth. Conchs and shells. Tectrices.	
<b>Recommended literature:</b> W. D. Callister, Jr.: Fundamentals of Materials Science and Engineering, John Wiley & Sons, 2001. Brian S. Mitchell: An Introduction to Materials Engineering and Science: For Chemical and Materials Engineers, John Wiley & Sons, 2004.	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 65	

A	B	C	D	E	FX
87.69	10.77	0.0	0.0	0.0	1.54
<b>Provides:</b> prof. RNDr. Renáta Oriňáková, DrSc.					
<b>Date of last modification:</b> 21.09.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ FYU1/15	<b>Course name:</b> Physical Problems
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 1.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> On- line set of problems for self solving is available for students. One task is defined for each seminar for testing of student preparation. Production and presentation of three own problems is necessary. problem solving 40 p obtained problem 10 p own problems 10 p oral examination 40 p Final: A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0	
<b>Learning outcomes:</b> Students will be ready for using of problem solving strategies at lower and upper secondary school levels. Classical problems are studied in more details from different point of view (students knowledge and skills, technologies, motivation, computer modelling and measurements).	
<b>Brief outline of the course:</b> Methods of problem solving are presented and trained. The sets of typical problems are analysed. Using of modelling and real experiments is discussed.	
<b>Recommended literature:</b> 1. Baláž, P. : Zbierka úloh z fyziky, SPN Bratislava, 1971 2. Bartuška, K.: Postup při řešení fyzikálních úloh, Sbírká řešených úloh z fyziky pro střední školy I, Praha, Prometheus, 1997, s. 5-10. 3. Halpern, A.: 3000 solved problems in Physics, McGraw-Hill, Inc., USA, 1988 4. Janovič, J., Koubek, V. Pecen, I.: Vybrané kapitoly z didaktiky fyziky. Bratislava, UK, 1999, 5. Jurčová, M., Dohňanská, J., Pišút, J., Velmovská, K.: Didaktika fyziky – rozvíjanie tvorivosti žiakov a študentov. Bratislava, UK, 2001, 6. Kružík, M.: Sbírká úloh z fyziky pro žáky středních škol, SPN, Praha, 1984 7. Lindner, H.: Řešené úlohy z fyziky, Alfa, Bratislava, 1973 8. Linhart, J. (1976): In: Volf, I.: Metodika řešení úloh ve výuce fyziky na základní škole. Hradec Králové, MAFY, 1998, 9. Pietrasiński, Z. (1964): In: Volf, I.: Metodika řešení úloh ve výuce fyziky na základní škole. Hradec Králové, MAFY, 1998,	

- 10.Scholtz, E., Kireš, M.: Fyzika – kinematika pre gymnázia s osemročným štúdiom. Bratislava, SPN, 2001,
- 11.Šedivý,P., Volf, I.: Dopravní kinematika a grafy. Hradec Králové, MAFY, 1998.
- 12.Volf,I. (1975): In: Bednařík, M., Lepil, O.: Netradiční typy fyzikálních úloh. Praha, PROMETHEUS,1995,
- 13.Volf,I.: Jak řešit úlohy fyzikální olympiády, XXIII. Ročník soutěže fyzikální olympiády ve školním roce 1981/82, Praha, SPN, 1981,
- 14.Volf,I.: Metodika řešení úloh ve výuce fyziky na základní škole. Hradec Králové, MAFY, 1998.
- 15.Halpern, A.: 3000 solved problems in Physics, McGraw-Hill, Inc., USA, 1988
- 16.<http://kekule.science.upjs.sk/fyzika>
- 17.<http://physedu.science.upjs.sk>

**Course language:**

Slovak, English

**Course assessment**

Total number of assessed students: 10

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

**Provides:** doc. RNDr. Marián Kireš, PhD., doc. RNDr. Zuzana Ješková, PhD.

**Date of last modification:** 01.03.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ KC/03		<b>Course name:</b> Cosmetic chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Seminar report on the selected subjects of cosmetic chemistry and its oral presentation connected with discussion. Terminal examination by oral form.					
<b>Learning outcomes:</b> The basic chemical ingredients in cosmetic products, their isolation from natural sources. The construction of some interesting groups of the organic structures and their application in cosmetic industry.					
<b>Brief outline of the course:</b> Skin and its components. The chemistry of lipids. Lipids, their classification (triacylglycerols, glycerophospholipids and sphingophospholipids), liposomes as transport systems. Fatty acids and alcohols, natural and synthetic waxes. Surfactants, their classification. Antioxidants. Dyes, their classification, organic and inorganic dyes, natural and synthetic. Biological active compounds (amino acids, peptides, proteins hydroxy acids, vitamins, polysaccharides) as the cosmetic ingredients. The chemistry of fragrances. Compounds derived from shikimic acid and mevalonic acid, their biosynthesis, Synthetic fragrances and their construction.					
<b>Recommended literature:</b> 1. S. V. Bhat, B. A. Nagasampagi, M. Sivakumar: Chemistry of Natural Products, Springer Narosa 2005, ISBN 81-7319-481-5. 2. G. Ohloff: Scent and Fragrances, Springer-Verlag Berlin Heidelberg 1994, ISBN 3-540-57108-6. 3. D. H. Pybus, CH. S. Sell: The chemistry of fragrances, Royal Society of Chemistry 1999, ISBN 0-8540-528-7. 4. J. McMurry: Organic chemistry, Brooks/Cole, a Thomson Learning Company 2004, Sixth Edition, ISBN 0534389996.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 86					
A	B	C	D	E	FX
79.07	15.12	4.65	1.16	0.0	0.0

<b>Provides:</b> doc. RNDr. Miroslava Martinková, PhD.
<b>Date of last modification:</b> 26.02.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KSSFaK/ KJPUAP/15		<b>Course name:</b> Culture of Spoken Discourse			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 1 / 1 <b>Per study period:</b> 14 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 0					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> PhDr. Iveta Bónová, PhD.					
<b>Date of last modification:</b> 28.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚTVŠ/ KP/12	<b>Course name:</b> Survival Course
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 36s <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Conditions for course completion: Attendance Final assessment: continuous fulfilment of all tasks within the course	
<b>Learning outcomes:</b> Learning outcomes: Students will be familiarized with principles of safe stay and movement in extreme natural conditions as they will obtain theoretical knowledge and practical skills to solve the extraordinary and demanding situations connected with survival and minimization of damage to health. The course develops team work and students will learn how to manage and face the situations that require overcoming of obstacles.	
<b>Brief outline of the course:</b> Brief outline of the course: Lectures: 1. Principles of behaviour and safety for movement and stay in unknown mountains 2. Preparation and leadership of tour 3. Objective and subjective danger in mountains 4. Principles of hygiene and prevention of damage to health in extreme conditions Exercises: 1. Movement in terrain, orientation and navigation in terrain (compasses, GPS) 2. Preparation of improvised overnight stay 3. Water treatment and food preparation.	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 365	
abs	n
44.38	55.62

<b>Provides:</b> MUDr. Peter Dombrovský, Mgr. Marek Valanský
<b>Date of last modification:</b> 18.08.2017
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/KPE/ EPU/15		<b>Course name:</b> Professional Ethics for Teachers and School Counsellors			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2., 4.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 281					
A	B	C	D	E	FX
94.66	4.63	0.71	0.0	0.0	0.0
<b>Provides:</b> Mgr. Lucia Hricová, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚTVŠ/ LKSp/13	<b>Course name:</b> Summer Course-Rafting of TISA River
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 36s <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Conditions for course completion: Attendance Final assessment: Raft control on the waterway (attended/not attended)	
<b>Learning outcomes:</b> Learning outcomes: Students have knowledge of rafts (canoe) and their control on waterway.	
<b>Brief outline of the course:</b> Brief outline of the course: 1. Assessment of difficulty of waterways 2. Safety rules for rafting 3. Setting up a crew 4. Practical skills training using an empty canoe 5. Canoe lifting and carrying 6. Putting the canoe in the water without a shore contact 7. Getting in the canoe 8. Exiting the canoe 9. Taking the canoe out of the water 10. Steering a) The pry stroke (on fast waterways) b) The draw stroke 11. Capsizing 12. Commands	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 142	
abs	n
41.55	58.45

<b>Provides:</b> Mgr. Peter Bakalár, PhD.
<b>Date of last modification:</b> 18.08.2017
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ MDT06/15	<b>Course name:</b> Modern Didactical Technology
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> All assignments must be uploaded by a student and accepted by a teacher according to assessment criteria. Active participation at the seminar with minimum 80% participation.	
<b>Learning outcomes:</b> Student graduated from subject will be able: - recognise basic tools for teaching activities, - to use all types of actual tools in education of science or humanities, - to design and realise educational activities by using modern technologies.	
<b>Brief outline of the course:</b> 0. Introduction 1. Cloud services 2. Digital notebooks 3. Digital imaging 4. Digital image processing 5. Digital text processing 6. Digital audio processing 7. Digital video, processing, videoconferencing 8. Google online services 9. Interactive didactical system (whiteboard, e-voting system, tablet) 10. Computer based laboratories 11. Digital technologies and virtual experiments 12. Digital teacher's workspace	
<b>Recommended literature:</b> 1. Kireš, M. et al.: Modern didactical technics in teacher practice, Košice: Elfa, 2010, ISBN 788080861353 2. actual information from web sites related to didactical technologies, 3. catalogues of teaching tools, 3. actual articles about modern trends in science and humanities education.	
<b>Course language:</b>	

Slovak, English					
<b>Course assessment</b>					
Total number of assessed students: 44					
A	B	C	D	E	FX
34.09	45.45	11.36	4.55	4.55	0.0
<b>Provides:</b> doc. RNDr. Jozef Hanč, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ MFDF/15	<b>Course name:</b> Modern Physics from Didactics Point of View
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 1.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Active participation; completing reading assignments; realization of a chosen modern physics project with a practical application. Exam and defending own project	
<b>Learning outcomes:</b> 1. Achieving better conceptual understanding and getting an integrated view on fundamental ideas of contemporary modern physics, which every future physicist and physics teacher should have. Emphasis is not on abstract mathematical methods, but on using most recent knowledge and tools of Physics Education Research - computer modeling of physical phenomena and employing only elementary algebra and calculus. 2. Getting physical intuition and experience dealing with practical applications of modern physics.	
<b>Brief outline of the course:</b> 1. Fundamental ideas of modern mechanics: symmetry, event, worldline, spacetime diagram, principle of least action, conservation laws; practical applications. 2. Fundamental ideas of relativity: principle of relativity, space-time interval, conservation of momentum, metrics, principle of maximal aging; practical applications. 3. Fundamental ideas of quantum mechanics: probability amplitude, principle of democracy of histories, rules for amplitudes, propagator, Schrödinger's equation, stationary state, Feynman's diagrams; practical applications.	
<b>Recommended literature:</b> 1. Moore, T. A., Six Ideas That Shaped Physics - Unit C and Q, 2nd ed., Mc Graw Hill, Boston, 2003 2. Feynman, R.P., QED - The Strange theory of Light and Matter, Princeton University Press, Princeton, 1985 3. Hey, A., Walters, P., New Quantum Universe, Cambridge University Press, 2003 4. Taylor, E. F., Wheeler, J. A., Space-time Physics-Introduction to Special Relativity, 2nd ed., W.H. Freeman and Company, New York, 1992 5. Thorne, K. S., Black Holes and Time Warps, W.W. Norton, New York, 1995 6. Relevant resources from recent journal literature (American Journal of Physics, European Journal of Physics, Scientific American...)	

<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 3					
A	B	C	D	E	FX
33.33	33.33	33.33	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Jozef Hanč, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> KPE/MPPa/15	<b>Course name:</b> Supervised Teaching Practice
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 36s <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 1.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 692	
abs	n
99.86	0.14
<b>Provides:</b> doc. PhDr. Beata Gajdošová, PhD., PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petříková, PhD.	
<b>Date of last modification:</b> 05.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/MPPb/15	<b>Course name:</b> Scheduled practice teaching
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 36s <b>Course method:</b> present	
<b>Number of credits:</b> 1	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b> KPE/MPPa/15 and KPE/PDU/15 and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 236	
abs	n
100.0	0.0
<b>Provides:</b> RNDr. Ivana Sotáková, Ph.D., doc. RNDr. Mária Ganajová, CSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/MPPb/15	<b>Course name:</b> Scheduled practice teaching
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 36s <b>Course method:</b> present	
<b>Number of credits:</b> 1	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b> KPE/MPPa/15 and KPE/PDU/15 and (KPPaPZ/PaSPP/09 or KPPaPZ/PPgU/15)	
<b>Conditions for course completion:</b> Student observes 11 physics lessons and leads one own physics lesson under the guidance of a teacher trainer. Confirmation of classroom visits. Written assessment made by teacher trainer.	
<b>Learning outcomes:</b> Students acquire knowledge by observing the practical applications of teaching skills for teaching the subject of physics and getting known about the organization of school work. Students gain first experience with teaching the subject of physics.	
<b>Brief outline of the course:</b> Students observe the process of teaching physics at lower and upper secondary schools and analyze it with teacher trainer. Practice takes place continuously during the course of the semester. Practice is scheduled once a week at the time of the first to third lesson at schools. The first two lessons are observation/teaching, the third lesson - analysing the teaching process under the guidance of the teacher trainer.	
<b>Recommended literature:</b>	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 61	
abs	n
100.0	0.0
<b>Provides:</b> doc. RNDr. Jozef Hanč, PhD.	
<b>Date of last modification:</b> 01.03.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteeprof. RNDr. Mária Ganajová, CSc. Guaranteeprof. PhD. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/MPPc/15	<b>Course name:</b> Continuous Practice Teaching I
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 4t <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b> ÚFV/MPPb/15	
<b>Conditions for course completion:</b> Confirmed list of sittings in on classes and teaching as a confirmation of attendance in the required extent of 6 lessons of sitting in on classes and 18 physics lessons taught by student. Lesson records and written preparation for the lessons.	
<b>Learning outcomes:</b> Student gains under the guidance of teacher trainer practical teaching skills within the subject of Physics.	
<b>Brief outline of the course:</b> Sitting in on classes, teaching physics lessons by student, consulted with teacher trainer, analysis of observed and taught lessons.	
<b>Recommended literature:</b> Textbooks for lower and upper secondary school physics	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 12	
abs	n
100.0	0.0
<b>Provides:</b> doc. RNDr. Jozef Hanč, PhD.	
<b>Date of last modification:</b> 01.03.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/MPPc/15	<b>Course name:</b> Continuous practice teaching I
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 4t <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b> ÚCHV/MPPb/15 or ÚCHV/MPPb/03	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 78	
abs	n
100.0	0.0
<b>Provides:</b> RNDr. Ivana Sotáková, Ph.D., doc. RNDr. Mária Ganajová, CSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/MPPd/15	<b>Course name:</b> Continuous Practice Teaching II
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 6t <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 4.	
<b>Course level:</b> II.	
<b>Prerequisites:</b> ÚFV/MPPc/15	
<b>Conditions for course completion:</b> Confirmed list of sittings in on classes and teaching as a confirmation of attendance in the required extent of 8 lessons of sitting in on classes and 30 physics lessons taught by student. Lesson records and written preparation for the lessons.	
<b>Learning outcomes:</b> Student gains under the guidance of teacher trainer practical teaching skills within the subject of Physics.	
<b>Brief outline of the course:</b> Sitting in on classes, teaching physics lessons by student, consulted with teacher trainer, analysis of observed and taught lessons.	
<b>Recommended literature:</b> Textbooks for lower and upper secondary school physics	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 8	
abs	n
100.0	0.0
<b>Provides:</b> doc. RNDr. Jozef Hanč, PhD.	
<b>Date of last modification:</b> 01.03.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/MPPd/15	<b>Course name:</b> Continuous practice teaching II
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 6t <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 4.	
<b>Course level:</b> II.	
<b>Prerequisites:</b> ÚCHV/MPPc/15	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 57	
abs	n
100.0	0.0
<b>Provides:</b> RNDr. Ivana Sotáková, Ph.D., doc. RNDr. Mária Ganajová, CSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/MSSU/15		<b>Course name:</b> Physics and Didactics of Physics			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of credits:</b> 1					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b> (ÚFV/DF1a/15 and ÚFV/FKS/15 and ÚFV/SJF1/15 and ÚFV/DF1b/15 and ÚFV/ASFU/15)					
<b>Conditions for course completion:</b> The graduate has knowledge of physics in wider context. He is able to implement and apply knowledge of physics into education. He is able to apply knowledge of theory of education to selected physical content.					
<b>Learning outcomes:</b> Competencies in accordance with the graduate profile.					
<b>Brief outline of the course:</b> The graduate has knowledge of physics in wider context. He is able to implement and apply knowledge of physics content into education. He is able to apply knowledge of theory of education to selected physical content. Physics: Selected problems of Solid state physics, Subnuclear physics and Astrophysics. Didactics of physics: State educational curriculum ISCED 2,3-Physics. Development of scientific literacy. Physical experiment. Active learning, inquiry-based education in physics. Formative and summative assessment. Talented students and informal education. Analysis of lower and upper secondary teaching units.					
<b>Recommended literature:</b>					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 8					
A	B	C	D	E	FX
75.0	25.0	0.0	0.0	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 01.03.2018					

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová,  
CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/MSSU1/14		<b>Course name:</b> Chemistry and Didactics of Chemistry I			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of credits:</b> 1					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b> ÚCHV/VKAU/04 and ÚCHV/DCH2/15					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 66					
A	B	C	D	E	FX
54.55	33.33	10.61	1.52	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/MSSU2/14		<b>Course name:</b> Chemistry and Didactics of Chemistry II			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of credits:</b> 1					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b> ÚCHV/VKoch/03 and ÚCHV/DCH2/15					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 35					
A	B	C	D	E	FX
80.0	11.43	5.71	2.86	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/MT/09		<b>Course name:</b> Class Management			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 474					
A	B	C	D	E	FX
53.38	33.76	9.49	1.69	0.63	1.05
<b>Provides:</b> PaedDr. Renáta Orosová, PhD.					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KGER/ NJKG/07		<b>Course name:</b> Communicative Grammar in German Language			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 48					
A	B	C	D	E	FX
54.17	12.5	10.42	4.17	10.42	8.33
<b>Provides:</b> PaedDr. Ingrid Puchalová, PhD., Mgr. Barbora Molokáčová					
<b>Date of last modification:</b> 25.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PASZ/17		<b>Course name:</b> Problem and Aggressive Behaviour of Pupils. Etiology, Prevention and Intervention.			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 24					
A	B	C	D	E	FX
87.5	12.5	0.0	0.0	0.0	0.0
<b>Provides:</b> PhDr. Anna Janovská, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ PDD/17		<b>Course name:</b> Pedagogical Diagnostics			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 14					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> PaedDr. Janka Ferencová, PhD.					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/PDK/17		<b>Course name:</b> Pedagogical Communication			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 26					
A	B	C	D	E	FX
80.77	15.38	3.85	0.0	0.0	0.0
<b>Provides:</b> Mgr. Katarína Petriková, PhD.					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ PDU/15		<b>Course name:</b> Teaching Methodology and Pedagogy			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 1361					
A	B	C	D	E	FX
11.83	25.2	27.48	19.99	8.52	6.98
<b>Provides:</b> PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petriková, PhD.					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> CJP/ PFAJAKA/07		<b>Course name:</b> Academic English			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> combined, present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> I., II., N					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Active classroom participation, 2 absences tolerated (4x45 min.) tolerated. 2 tests (5th/6th week and 12th/13th week), no retake. Minipresentation on chosen topic. Final evaluation- average assessment of tests and presentation. Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b> 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 <a href="http://www.bbclearningenglish.com">www.bbclearningenglish.com</a> Cambridge Academic Content Dictionary, CUP, 2009					
<b>Course language:</b> English language, level B2 according to CEFR.					
<b>Course assessment</b> Total number of assessed students: 344					
A	B	C	D	E	FX
30.81	23.55	15.99	11.05	7.27	11.34
<b>Provides:</b> Mgr. Zuzana Naďová					
<b>Date of last modification:</b> 06.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> CJP/ PFAJGA/07		<b>Course name:</b> Communicative Grammar in English			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> combined, present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> I., II., N					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Active classroom participation (max. 2x90 min. absences tolerated). 2 test (5th/6th and 12/13th week), no retake. Final evaluation- average assessment of tests. Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less.					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b> Misztal M.: Thematic Vocabulary, Fragment, 1998 McCarthy, O'Dell: English Vocabulary in Use, 1994 Alexander L.G.: Longman English Grammar, Longman, 1988 Jones I. - Communicative Grammar Practice, CUP, 1992 Vince M.: Macmillan Grammar in Context, Macmillan, 2008 <a href="http://www.bbclearningenglish.com">www.bbclearningenglish.com</a> Gráf T., Peters S.: Time to practise, Polyglot, 2007					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 394					
A	B	C	D	E	FX
39.34	18.53	17.01	8.88	6.09	10.15
<b>Provides:</b> Mgr. Lenka Klimčáková					
<b>Date of last modification:</b> 06.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> CJP/ PFAJKKA/07	<b>Course name:</b> Communicative Competence in English
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> combined, present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> I., II., N	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Active participation in class and completed homework assignments. Students are allowed to miss two classes at the most. 2 credit tests (presumably in weeks 6/7 and 12/13) and short academic presentations in English on selected topics. Final grade will be calculated as follows: A 93-100 %, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64 % and less.	
<b>Learning outcomes:</b> 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.	
<b>Brief outline of the course:</b> Rodina, jej formy a problémy Vyjadrovanie pocitov a dojmov Dom, bývanie a budúcnosť Formy a dialekty v anglickom jazyku Život v meste a na vidieku Kolokácie a idiomy, zaužívané slovné spojenia Prázdniny a sviatky vo svete Životné prostredie a ekológia Výnimky zo slovosledu Frázové slovesá a ich použitie Charakteristiky neformálneho diškurzu	

**Recommended literature:**

www.bbclearningenglish.com

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

Misztal M.: Thematic Vocabulary. SPN, 1998.

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

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

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

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

**Course language:**

English language, B2 level according to CEFR

**Course assessment**

Total number of assessed students: 220

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

**Provides:** Mgr. Zuzana Naďová

**Date of last modification:** 06.02.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/PPD/15		<b>Course name:</b> Pedagogy and Psychology			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of credits:</b> 1					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b> KPE/PDU/15 and KPPaPZ/PPgU/15					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 355					
A	B	C	D	E	FX
29.01	24.79	25.07	15.77	3.66	1.69
<b>Provides:</b>					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> Dek. PF UPJŠ/PPZ/13		<b>Course name:</b> Personality Development and Key Competences for Success on a Labour Market			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 14s <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 39					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> RNDr. Peter Stefányi, PhD.					
<b>Date of last modification:</b> 19.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PPgU/15		<b>Course name:</b> Psychology and Educational Psychology			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 1287					
A	B	C	D	E	FX
10.18	18.57	22.46	22.84	22.84	3.11
<b>Provides:</b> prof. PhDr. Oľga Orosová, CSc., Mgr. Lucia Hricová, PhD., PhDr. Anna Janovská, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ PSP1a/05		<b>Course name:</b> School Physical Experiments I			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> continuous written tests being active in practises final oral examination					
<b>Learning outcomes:</b> To gain basic skills with demonstration and physics interpretation of school physics experiments belonging to the subject matter in Physics classes at basic schools and high schools. To become familiar with didactic procedures related to using school experiments in different phases of the educational process.					
<b>Brief outline of the course:</b> The practices are aimed at practical realization and physics interpretation of school demonstration experiments from selected topics of the physics subject matter for basic-school and high-school pupils. The emphasis is on familiarizing with teaching aids and didactic devices used in performing school physics experiments and on getting basic skills with their utilization in physics teaching.					
<b>Recommended literature:</b> 1.Kašpar,E.,Vachek,J.: Pokusy z fyziky na středních školách, I.díl, SPN Praha,1967 2.Koubek, V. a kol.: Školské pokusy z fyziky, SPN Bratislava, 1992 3. <a href="http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm">http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm</a>					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 69					
A	B	C	D	E	FX
44.93	21.74	18.84	7.25	4.35	2.9
<b>Provides:</b> doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD., PaedDr. Iveta Štefančinová, Ph.D.					
<b>Date of last modification:</b> 01.03.2018					

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová,  
CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ PSP1b/04		<b>Course name:</b> School Physical Experiments II			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> continuous written tests being active in practises final oral examination					
<b>Learning outcomes:</b> Students should gain knowledge and broaden skills necessary for understanding methods, techniques and physical interpretations of all types of school physical experiments that are parts of the subject matter in physics classes at basic and high schools.					
<b>Brief outline of the course:</b> The practises are aimed at practical realization and physics interpretation of school demonstration experiments from selected topics of the physics subject matter for basic- and high-school pupils and their convenient incorporation into educational process. The emphasis is on familiarizing with teaching aids and didactic devices used in performing school physics experiments and on extending skills with their utilization in physics teaching.					
<b>Recommended literature:</b> 1.Onderová, L., Kireš, M., Ješková, Z., Degro, J.: Praktikum školských pokusov z fyziky II., PF UPJŠ 2.Kašpar, E., Vachek, J.: Pokusy z fyziky na středních školách, I. díl, SPN Praha, 1967 3.Žouželka,, J., Fuka, J.: Pokusy z fyziky na středních školách, II. díl, SPN Praha, 1971 4. <a href="http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm">http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm</a>					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 65					
A	B	C	D	E	FX
52.31	10.77	29.23	4.62	1.54	1.54
<b>Provides:</b> doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD., PaedDr. Iveta Štefančinová, Ph.D.					

<b>Date of last modification:</b> 01.03.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PTPN/17		<b>Course name:</b> Psychology of Creativity and Working with Gifted Students in Teacher Practice			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 18					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> Mgr. Lucia Hricová, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PUDU/15		<b>Course name:</b> Drug Addiction Prevention in Educational Practice			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 1., 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 257					
A	B	C	D	E	FX
48.25	43.19	7.78	0.78	0.0	0.0
<b>Provides:</b> prof. PhDr. Oľga Orosová, CSc., Mgr. Marta Dobrowolska Kulanová, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PsZ/15		<b>Course name:</b> Psychology of Health			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 61					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> Mgr. Jozef Benka, PhD. et PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ SAZ1/15		<b>Course name:</b> Stereochemistry of Inorganic Compounds			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Symmetry, elements of symmetry, point groups, symmetrical properties of orbitals and bonds. Principles of stereochemistry, VSEPR, configuration of molecules, polyhedra, regular and semiregular polyhedra. Valence shells with 4–12 electron pairs, geometry of molecules and periodic system.					
<b>Recommended literature:</b> Kepert, D. L.: Inorganic Stereochemistry. Springer-Verlag, Berlin, 1982. Kettle, S. F. A.: Symmetry and Structure. John Wiley & Sons, New York, 1985.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 18					
A	B	C	D	E	FX
50.0	16.67	22.22	11.11	0.0	0.0
<b>Provides:</b> prof. RNDr. Vladimír Zelenák, PhD.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhD. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPO/SDaM/15		<b>Course name:</b> Child and Adolescent Sociology			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 844					
A	B	C	D	E	FX
50.0	29.74	15.28	3.32	1.3	0.36
<b>Provides:</b> Mgr. Alexander Onufrák, PhD.					
<b>Date of last modification:</b> 28.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/SJF1/15		<b>Course name:</b> Subnuclear Physics			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> written test and thesis exam					
<b>Learning outcomes:</b> Preview of basic characteristics and classification of elementary particles, their structures, theoretical description and experimental technique.					
<b>Brief outline of the course:</b> Historical introduction to the particle physics. The forces in nature. Elementary and composite particles..Classification of particles. Symmetries and conservation laws. Standard model.					
<b>Recommended literature:</b> 1. Close F.: The Cosmic Onion - Quarks and the Nature of the Universe, Oxford, 1990. 2. Hajko V. and team of authors, Physics in experiments, Bratislava, 1997. 3. Kapitonov I.M., Vvedeniye v fiziku jadra i chastic (Russian), Moscow, 2004. 4. Brandt S., The harvest of a century, Discoveries of modern physics in 100 episodes, Oxford, 2009.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 32					
A	B	C	D	E	FX
31.25	3.13	6.25	25.0	25.0	9.38
<b>Provides:</b> prof. RNDr. Stanislav Vokál, DrSc.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/SNP/09		<b>Course name:</b> Mobbing, Violence and Their Prevention			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 1., 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 109					
A	B	C	D	E	FX
77.06	20.18	1.83	0.92	0.0	0.0
<b>Provides:</b> Mgr. Mária Bačíková, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/SPC1a/03		<b>Course name:</b> Special practising the school experiments I			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 4 <b>Per study period:</b> 56 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Continuous checking of theoretical preparation, development of report and presentation. Semestral test					
<b>Learning outcomes:</b> The aim of this subject is learn of basic experimental skillfulness in techniques in school experiment with accent on safety and health protections of students at scholar experimental work.					
<b>Brief outline of the course:</b> Selection and arrangement of chemical experiments as the demonstrative experiments, or pupils ' experiments to themes basic laws of chemistry, determination of constant physicochemical, factors influence speed of chemical reaction, experiments from electrochemistry, creating gases; preparation works characters of quantitative, interesting experiments of everyday life.					
<b>Recommended literature:</b> 1. Ganajová, M., Dzurillová, M. 2005: Školské pokusy z chémie I. UPJŠ v Košiciach, Prírodovedecká fakulta, 140 s. ISBN 80-7097-617-9 2. Ganajová, M. 2005: Chemické experimenty s vybranými produktami z obchodu. UPJŠ v Košiciach, Prírodovedecká fakulta, 110 s. ISBN 80-7097-611-X 3. Tomeček, O.: Školská experimentálna semimikrosúprava. Učebné pomôcky Banská Bystrica 1980 4. The primary and secondary textbook of chemistry 5. <a href="http://kekule.science.upjs.sk">http://kekule.science.upjs.sk</a> – (ŠIS)					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 244					
A	B	C	D	E	FX
65.16	27.05	6.97	0.82	0.0	0.0
<b>Provides:</b> doc. RNDr. Mária Ganajová, CSc., RNDr. Ivana Sotáková, Ph.D.					
<b>Date of last modification:</b> 26.02.2018					

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová,  
CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ SPC1b/03	<b>Course name:</b> Special practising the school experiments II
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> The knowledge of the reaction mechanism of the main tests of several organic compounds derivatives and the ability of their laboratory realization are required. Written tests: more than 50% from each one is required.	
<b>Learning outcomes:</b> The students will become familiar with the basic laboratory skills and techniques that they can apply in demonstrating experiments in their future career as a teacher. The rules of healthy and safety laboratory work are emphasised.	
<b>Brief outline of the course:</b> Qualitative analysis of organic compounds Alkanes - preparation of methane Alkenes preparation and addition reactions of ethene, addition reaction of $\beta$ -carotene Alkynes, Aromatic hydrocarbons and their derivatives – preparation of benzene, aromatic electrophilic substitution reactions – nitration of toluene and naphthalene, preparation of benzyl bromide Halogenoderivatives – preparation of chloroethane, chloroform, methyl iodide, iodoform Hydroxoderivatives – properties and reactivity - methanol, ethanol, ethylene glycol, glycerol, preparation of sodium ethanolate and sodium phenoxide, bromation of phenol, colour reactions of phenols, naphthols Oxoderivatives – diethyl ether – preparation and properties, Aldehydes and Ketones – preparation of formaldehyde, oxidation of formaldehyde, acetone – addition of sodium hydrogensulfite Carboxylic acids and their derivatives – preparation and properties of soap Natural compounds – carbohydrates, proteins, amino acids, lipids Factors that affect the rate of chemical reactions – temperature and concentration Isolation of the fragrant components using steam distillation	
<b>Recommended literature:</b> 1. Smik, L., Merva, L., Brutovská, A: Technika a didaktika školských pokusov, Vyd.Rektorát UPJŠ,Košice,1988 2. Smik, L. a kol.: Špeciálna didaktika chémie II., Vyd.Rektorát UPJŠ,Košice, 1984 3. Internal scripts -Školské pokusy z organickej chémie	

<b>Course language:</b> slovak					
<b>Course assessment</b> Total number of assessed students: 238					
A	B	C	D	E	FX
39.5	28.57	19.75	8.4	3.78	0.0
<b>Provides:</b> RNDr. Jana Špaková Raschmanová, PhD., RNDr. Ján Elečko, PhD.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ STA1/03		<b>Course name:</b> Structure Analysis			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 6					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> 2 written tests. 30 % The final examination is in a written form. The final mark is based on the results from current and final tests.					
<b>Learning outcomes:</b> Students get an overview about the symmetry at the micro- and macrostructure level and about diffraction methods used for the crystal structure determination and they will learn how to use the results of the crystal structure analysis in their own work.					
<b>Brief outline of the course:</b> Macrostructure and microstructure symmetry, individual work with space groups. Theoretical basis of the diffraction experiment. Practical aspects of crystal structure solution. Processing the results of structural analysis. Theoretical basis, practical aspects and possibilities of X-ray powder diffraction analysis, its use at work of a chemist.					
<b>Recommended literature:</b> Massa, W.: Crystal structure determination, 2nd edition. Springer 2004. Clegg, W. et al.: Crystal structure analysis. Principles and practice. Oxford University Press 2009. Hahn, T.: International tables for crystallography, Vol. A. Kluwer Academic Publishers 2002. Stout, G.H. & Jensen, L.H.: X-ray Structure Determination. Macmillan Publishing Co., Inc. 1968. Klug, H.P. & Alexander, L.E.: X-Ray diffraction procedures for polycrystalline and amorphous materials. John Wiley & Sons, Inc. 1970.					
<b>Course language:</b> Slovak and English					
<b>Course assessment</b> Total number of assessed students: 108					
A	B	C	D	E	FX
27.78	16.67	26.85	19.44	8.33	0.93
<b>Provides:</b> doc. RNDr. Ivan Potočník, PhD.					

<b>Date of last modification:</b> 26.02.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ SVKD/04		<b>Course name:</b> Student Scientific Conference			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> presentation of results of studnets' research work at Students' scientific conference					
<b>Learning outcomes:</b> Student gains experience and skills in processing and presentation of results of his research work.					
<b>Brief outline of the course:</b> Presentation of results of studnets' research work at Students' scientific conference.					
<b>Recommended literature:</b> Based on the recommendations of supervisor					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 45					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/TRS/15		<b>Course name:</b> Special Theory of Relativity			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b> To acquaint students with principles of a special theory of relativity.					
<b>Brief outline of the course:</b> Galilean transformations and Galilean principle of relativity. Ether's hypothesis. Michelson experiment. Einstein's principles of the special theory of relativity. Lorentz transformation and its physical consequences. Interval and light cone. Proper time. Minkowski's space-time. Mathematical apparatus of special relativity. Relativistic electrodynamics. Relativistic mechanics.					
<b>Recommended literature:</b> 1. Greiner W.: Classical Mechanics-Point Particles and Relativity, Springer-Verlag, New York, 2004. 2. Goldstein H., Poole Ch., Safko J.: Classical Mechanics, Addison Wesley, San Francisco, 2002. 3. Landau L.D., Lifšic E.M.: The Classical Theory of Fields, Pergamon Press, Oxford, 1975.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 42					
A	B	C	D	E	FX
33.33	40.48	9.52	9.52	7.14	0.0
<b>Provides:</b> prof. RNDr. Andrej Bobák, DrSc.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ TTUP/15		<b>Course name:</b> Creating Text Teaching Aids			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 129					
A	B	C	D	E	FX
51.94	31.01	10.85	4.65	1.55	0.0
<b>Provides:</b> Mgr. Katarína Petriková, PhD., PaedDr. Renáta Orosová, PhD.					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚTVŠ/ TVa/11		<b>Course name:</b> Sports Activities I.					
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present							
<b>Number of credits:</b> 2							
<b>Recommended semester/trimester of the course:</b> 1.							
<b>Course level:</b> I., I.II., II.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b> Conditions for course completion: Min. 80% of active participation in classes.							
<b>Learning outcomes:</b> Learning outcomes: Increasing physical condition and performance within individual sports. Strengthening the relationship of students to the selected sports activity and its continual improvement.							
<b>Brief outline of the course:</b> Brief outline of the course: Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, basketball, badminton, floorball, yoga, pilates, swimming, body-building, indoor football, self-defence and karate, table tennis, sports for unfit persons, streetball, tennis, and volleyball. In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness. In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.							
<b>Recommended literature:</b>							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 11672							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.42	0.01	0.0	0.0	0.0	0.03	7.59	3.96

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

**Date of last modification:** 18.08.2017

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteedoc. RNDr. Mária Ganajová, CSc. Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚTVŠ/ TVb/11		<b>Course name:</b> Sports Activities II.					
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present							
<b>Number of credits:</b> 2							
<b>Recommended semester/trimester of the course:</b> 2.							
<b>Course level:</b> I., I.II., II.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b> Conditions for course completion: Final assessment and active participation in classes - min. 75%.							
<b>Learning outcomes:</b> Learning outcomes: Increasing physical condition and performance within individual sports. Strengthening the relationship of students to the selected sports activity and its continual improvement.							
<b>Brief outline of the course:</b> Brief outline of the course: Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, basketball, badminton, floorball, yoga, pilates, swimming, body-building, indoor football, self-defence and karate, table tennis, sports for unfit persons, streetball, tennis, and volleyball. In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitnes. In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.							
<b>Recommended literature:</b>							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 10971							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.37	0.57	0.02	0.0	0.0	0.05	10.13	3.86

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

**Date of last modification:** 18.08.2017

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteedoc. RNDr. Mária Ganajová, CSc. Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚTVŠ/ TVc/11		<b>Course name:</b> Sports Activities III.					
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present							
<b>Number of credits:</b> 2							
<b>Recommended semester/trimester of the course:</b> 3.							
<b>Course level:</b> I., I.II., II.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b>							
<b>Learning outcomes:</b>							
<b>Brief outline of the course:</b>							
<b>Recommended literature:</b>							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 6910							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
89.84	0.04	0.0	0.0	0.0	0.03	4.23	5.86
<b>Provides:</b> Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Ing. Iveta Cimboláková, PhD.							
<b>Date of last modification:</b> 18.08.2017							
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚTVŠ/ TVd/11		<b>Course name:</b> Sports Activities IV.					
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present							
<b>Number of credits:</b> 2							
<b>Recommended semester/trimester of the course:</b> 4.							
<b>Course level:</b> I., I.II., II.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b>							
<b>Learning outcomes:</b>							
<b>Brief outline of the course:</b>							
<b>Recommended literature:</b>							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 5045							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.09	0.3	0.04	0.0	0.0	0.0	6.82	7.75
<b>Provides:</b> Mgr. Marcel Čurgali, Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Ing. Iveta Cimboláková, PhD.							
<b>Date of last modification:</b> 18.08.2017							
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteeprof. RNDr. Mária Ganajová, CSc. Guaranteeprof. PhD. Oľga Orosová, CSc.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ UECH/03	<b>Course name:</b> Introduction to Environmental Chemistry
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present	
<b>Number of credits:</b> 5	
<b>Recommended semester/trimester of the course:</b> 1., 3.	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Oral examination	
<b>Learning outcomes:</b> Introduction to topics in environmental chemistry and basic procedures applied for environmental protection.	
<b>Brief outline of the course:</b> Introduction to Environmental Chemistry Chemical aspects of pollution and environmental problems. Composition and behavior of the atmosphere. Energy balance of the Earth and climate changes. Principles of photochemistry, photoprocesses in the atmosphere. Petroleum, hydrocarbons and coal (characteristics, sources and environmental pollution). Soaps, polymers and synthetic surfactants. Haloorganics and pesticides. Environmental chemistry of some important elements (C, N, S, P, halogens, biologically important metals ...). Environmental chemistry in aqueous media. Aqueous systems, parameters, cycles and their protection. The Earth's crust (rocks, minerals, soils). Natural and artificial radioactivity, utilization. Energy and energy sources (fossil fuels, nuclear, geothermal, solar energy, wind and water energy). Solid waste disposal and recycling.	
<b>Recommended literature:</b> 1. Gary W. van Loon, Stephen J. Duffy : Environmental Chemistry - A Global Perspective, Oxford University Press, Oxford 2003 2. R.A. Bailey, H.M. Clark, J.P. Ferris, S. Krause, R.L. Strong : Chemistry of the Environment, Academic Press, San Diego 2002 3. G. Schwedt: The Essential Guide to Environmental Chemistry, Wiley and Sons, London 2001 4. R.N. Reeve, J.D. Barnes: General Environmental Chemistry, Wiley, London 1994 5. G. Burton, J. Holman, G. Pilling, D. Waddington: Chemical Storylines, Heinemann, Oxford, London 1994 6. www	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 209	

A	B	C	D	E	FX
48.8	20.57	15.79	8.61	6.22	0.0
<b>Provides:</b> doc. RNDr. Andrea Straková Fedorková, PhD.					
<b>Date of last modification:</b> 21.09.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/UPN/17		<b>Course name:</b> Introduction into Psychology of Religion			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 5					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> Mgr. Jozef Benka, PhD. et PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhD. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/UPR/15		<b>Course name:</b> The Art of Aiding by Verbal Exchange			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 84					
A	B	C	D	E	FX
90.48	2.38	4.76	1.19	1.19	0.0
<b>Provides:</b> Mgr. Ondrej Kalina, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ VBF2/15	<b>Course name:</b> General Biophysics II
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 1., 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Exam	
<b>Learning outcomes:</b> 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.	
<b>Brief outline of the course:</b> 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.	
<b>Recommended literature:</b> 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. K.E.van Holde, W.C. Johnson and P. Shing Ho, Principles of	

physical biochemistry, Simon and Schuster, Prentice Hall, 1998. 7. D.G. Nichols and S.J. Ferguson, Bioenergetics 3, Academic Press, Elsevier Science Ltd., 2002.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 9					
A	B	C	D	E	FX
22.22	44.44	11.11	11.11	11.11	0.0
<b>Provides:</b> doc. Mgr. Daniel Jancura, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ VKAU/04		<b>Course name:</b> Selected Topics in Inorganic Chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b> Greenwood, N.N., Earnshaw, A.: Chemistry of the elements I and II, Pergamon Press N.Y., 1993. C. N. R. Rao, A. Muller, A. K. Cheetham: The Chemistry of Nanomaterials (Vol. 1,2), Wiley-VCH, 2006. Atkins O., Overton T., Rourke J., Weller M., Armstrong F.: Inorganic Chemistry, University Press, Oxford, 2006.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 47					
A	B	C	D	E	FX
46.81	25.53	19.15	4.26	4.26	0.0
<b>Provides:</b> prof. RNDr. Vladimír Zelenák, PhD.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ VKCH/10	<b>Course name:</b> Vybrané kapitoly z chémie
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present	
<b>Number of credits:</b> 4	
<b>Recommended semester/trimester of the course:</b> 1.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Terminal examination by written form.	
<b>Learning outcomes:</b> Organic chemistry: The general review on the basic chemistry of saccharides, lipids, amino acids and peptides. Inorganic chemistry: To get acquaintance of the students with the stereochemistry of inorganic compounds, methods of the study and its influence on the properties of the compounds. Moreover to get acquaintance of the students with actual direction of inorganic chemistry in the area of nanomaterials.	
<b>Brief outline of the course:</b> Organic chemistry: Nomenclature of monosaccharides, their stereochemistry (the Fischer projection, the Haworth projection, conformation of sugars). Monosaccharide derivatives. Ascending reactions. Oligosaccharides and polysaccharides. Lipids, their structure and classification. Groups of lipids. Triacylglycerols, glycerophospholipids sfingophospholipids, glycosphingolipids. Amino acids, their nomenclature, classification and stereochemistry. Synthesis of amino acids. Nonribosomal construction of peptides. Inorganic chemistry: Symmetry, elements of symmetry, point groups, symmetrical properties of orbitals and bonds. Principles of stereochemistry, VSEPR, configuration of molecules, polyhedra, regular and semiregular polyhedra, the use of concept of symmetry in IR and UV-VIS spectroscopy. Nanochemistry - definition, bonds in nanoparticles and nanopowders, interactions between nanoparticles. Unique properties of nanomaterials, new methods of the synthesis of nanomaterials.	
<b>Recommended literature:</b> J. McMurry: Organic chemistry, Brooks/Cole, a Thomson Learning Company 2004, Sixth Edition, ISBN 0534389996. J. Chomič: Stereochemistry of inorganic compounds, UPIŠ Košice, 1988. K. J. Klabunde, R. M. Richards: Nanoscale Materials in Chemistry, Wiley-CH, 2009.	
<b>Course language:</b>	

<b>Course assessment</b>					
Total number of assessed students: 179					
A	B	C	D	E	FX
22.35	26.26	35.2	13.41	2.23	0.56
<b>Provides:</b> doc. RNDr. Mária Kožurková, CSc., prof. RNDr. Vladimír Zelenák, PhD., doc. RNDr. Miroslava Martinková, PhD.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhD. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ VKOCH/03		<b>Course name:</b> Selected topics in organic chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 105					
A	B	C	D	E	FX
35.24	24.76	20.0	14.29	5.71	0.0
<b>Provides:</b> doc. RNDr. Ján Imrich, CSc.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ VMV1/15	<b>Course name:</b> Using Multimedia in Education
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> 9. moduls assignments: 45 points presentation and discussion about the project 55 points A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0	
<b>Learning outcomes:</b> Student will have overview and skills in field of using multimedia in education.	
<b>Brief outline of the course:</b> <ol style="list-style-type: none"> <li>1. Computer graphics as visualisation tools</li> <li>2. Preparation and using of graphic elements</li> <li>3. Computer animation</li> <li>4. Digital audio and educational activities</li> <li>5. Educational video</li> <li>6. Interactive multimedia</li> <li>7. Videotechnologies in education</li> <li>8. Computer based school laboratory</li> <li>9. Interactive activities in multimedia classroom</li> <li>10. Educational project creation</li> <li>11. Educational project creation</li> <li>12. Project presentation</li> </ol>	
<b>Recommended literature:</b> <ol style="list-style-type: none"> <li>1. Kireš, M., Šnajder L., Kalakay, R.: Multimédia pre učiteľa, Asociácia projektu Infovek, UIPŠ Bratislava 2002, 96 strán, 400 ks, ISBN 80-7098-317-5</li> <li>2. Kireš, M. a kol.: IKT pre učiteľa fyziky, Asociácia projektu Infovek, UIPŠ Bratislava 2002, 79 strán, 400 ks, ISBN 80-7098-316-7</li> <li>3. Šnajder, L., Kireš, M.: Práca s multimédiami pre stredné školy, tematický zošit, SPN Bratislava, 2005, 48 strán, 1. vydanie: ISBN 80-10-00422-7, 2006, 1.vydanie maďarská jazyková mutácia: ISBN 80-10-01031-6, 2007, 2.vydanie: ISBN 978-80-10-01224-4</li> </ol>	
<b>Course language:</b> Slovak, English	
<b>Course assessment</b>	

Total number of assessed students: 0					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Marián Kireš, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/VP/09		<b>Course name:</b> Educational Counselling			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 133					
A	B	C	D	E	FX
60.15	24.81	9.02	4.51	1.5	0.0
<b>Provides:</b> PhDr. Anna Janovská, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ VPF1/15	<b>Course name:</b> Selected General Physics Problems I
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> 1. writing exam 20 points 2. writing exam 20 points self examples 30 bodov semestral presentation 30 bodov A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0	
<b>Learning outcomes:</b> Physics interpretation of everyday phenomena can help with deeper understanding of physics problems.	
<b>Brief outline of the course:</b> 1. Kinematics and dynamics 2. Hydrostatics and hydrodynamics 3. Surface properties of liquids 4. Thermics and Thermodynamics 5. Thermics and Thermodynamics II 6. Electrostatics 7. Electric field 8. Magnetic field 9. Mechanical oscillations, resonance, waves 10. Acoustics 11. Ray Optics 12. Wave Optics 13. Student assignments presentation	
<b>Recommended literature:</b> 1. Nahodil, J.: Fyzika v běžném životě, Prometheus, Praha, 1996 2. Tulčínskyj, : Zbierka kvalitatívnych úloh z fyziky, SPN, Bratislava, 1990 3. Kašpar, E. : Problémové vyučovanie a problémové úlohy, SPN, Praha 1982 4. Feynman, R.P. : Feynmanove prednášky z fyziky 1-5, Alfa, 1985 5. Landau, Kitajgorodskij : Fyzika pre každého, Alfa 1972 6. Lange, V.: To chce vtip!, Alfa, Bratislava, 1988 7. <a href="http://kekule.science.upjs.sk/fyzika">http://kekule.science.upjs.sk/fyzika</a>	

8. <a href="http://physedu.science.upjs.sk">http://physedu.science.upjs.sk</a>					
<b>Course language:</b> Slovak, English					
<b>Course assessment</b> Total number of assessed students: 7					
A	B	C	D	E	FX
85.71	14.29	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Marián Kireš, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ VPF2/15	<b>Course name:</b> Selected General Physics Problems II
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> presentation of selected problem 30 p writing exam 70 p A 100-90 B 89-80 C 79-70 D 69-60 E 59-50 F 49-0	
<b>Learning outcomes:</b> Everyday phenomena are used for deeper and conceptual understanding of physics problem.	
<b>Brief outline of the course:</b> 1.Mechanics •Coriolisova force •How Swing works •Bicycle •Tides •Inertia 2.Hydromechanics •Archimedes screw •Water flow •Archimedes principle in Action 3.Kapilarity •Water in plant •Kapilár hysteresis •Bubbles and soap •Floating on water surface 4.Acoustic •Signal production •Human voice •Space acoustic •Home ciname 5.Optics •Sight •Opticalillusions •Space imaging	

- Atmospheric acoustic
- 6.Probléms IYPT
- Magnetohydrodynamics
  - Bulbs
  - Falling spring
  - Ship movement
  - Thermal exchange
- 7.Differenct problems
- Sonoluminiscence
  - Ice pick
  - Kelvin water droplet
  - Water stain
- 8.Student work presentation

#### **Recommended literature:**

1. Walker, J.: The Flying Circus of Physics with answers, John Wiley & Sons, 2005
  2. Gnädig, P., Honyek, G., Riley, K.: 200 Puzzling Physics Problems with Hints and Solutions, Cambridge University Press, 2001
  3. Stepan, J.: Targeting Students' Misconceptions, Showboard, 2003
  4. Swartz, C.: Back of the Envelope Physics, The John Hopkins Uni. Press, Baltimore, 2003
  5. Nahodil, J.: Fyzika v běžném životě, Prometheus, Praha, 1996
  6. Tulčínský, J.: Zbierka kvalitatívnych úloh z fyziky, SPN, Bratislava, 1990
  7. Kašpar, E.: Problémové vyučovanie a problémové úlohy, SPN, Praha 1982
  8. Feynman, R.P.: Feynmanove prednášky z fyziky 1-5, Alfa, 1985
  9. Landau, Kitajgorodskij: Fyzika pre každého, Alfa 1972
  10. Lange, V.: To chce vtip!, Alfa, Bratislava, 1988
- actual articles

#### **Course language:**

Slovak, English

#### **Course assessment**

Total number of assessed students: 6

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

**Provides:** doc. RNDr. Marián Kireš, PhD.

**Date of last modification:** 01.03.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteeprof. RNDr. Mária Ganajová, CSc. Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ VPSP/04	<b>Course name:</b> School Physics Experiments III
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present	
<b>Number of credits:</b> 3	
<b>Recommended semester/trimester of the course:</b> 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> continuous written tests active work in practises final oral examination	
<b>Learning outcomes:</b> The students gain skills and competencies to the own and effective organisation and solving of experimental tasks, use of activities enhanced by digital technologies for physics teaching at lower and upper secondary level.	
<b>Brief outline of the course:</b> The practices are aimed at practical realization and physics interpretation of different forms of selected school demonstration. The emphasis is on creative utilization of teaching aids and didactic devices and computer-aided experiments.	
<b>Recommended literature:</b> Šucha, J.: Metodická príručka pre rozkladný transformátor, Učebné pomôcky B.Bystrica, 1973 Demkanin, P. a kol. Počítačom podporované prírodovedné laboratórium, FMFI UK Bratislava, 2006, ISBN:80-89186-10-6 Ješková, Z., a kol. Využitie informačných a komunikačných technológií v predmete Fyzika pre stredné školy : učebný materiál - modul 3. - 1. vyd. - Košice : Elfa, 2010. - 242 s., ISBN 978-80-8086-146-9 Duľa, I. a kol. Využitie informačných a komunikačných technológií v predmete Fyzika pre základné školy : učebný materiál - modul 3. - 1. vyd. - Košice : Elfa, 2010. - 240 s., ISBN 978-80-8086-154-4 Ješková, Z., Degro, J., Onderová, L.: Počítačom podporovaná výučba fyziky, PF UPJŠ, Košice, ISBN 80 - 7097 - 451 -6 <a href="http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm">http://physedu.science.upjs.sk/sis/fyzika/experimenty/index.htm</a>	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 2	

A	B	C	D	E	FX
0.0	100.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD., RNDr. Ľudmila Onderová, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/VPU/17		<b>Course name:</b> Developmental Psychology for Teachers			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 2 Per study period: 28</b> <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 24					
A	B	C	D	E	FX
50.0	33.33	8.33	8.33	0.0	0.0
<b>Provides:</b> Mgr. Mária Bačíková, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> KSSFaK/VSJU/15	<b>Course name:</b> Slovak Language for Teachers
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 1., 3.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> passing a final test	
<b>Learning outcomes:</b> Mastering of standard Slovak in spoken and written discourse. Becoming familiarized with codification manuals, acquiring skills related to bibliography and quotation standards. Mastering of written communication in accordance with current orthographical rules. Mastering of basic characteristics of expressions of text and style and fundamentals of text composition.	
<b>Brief outline of the course:</b> Characteristics of basic terms of general linguistics (language – speech, language functions, the sign character of language, language levels, content and form in language, individual and general aspect of language units) on interdisciplinary background and with the application to Slovak as a national language. Language standard, codification, usus. Basic codification manuals. Application of orthographic rules in practical documents. Sound culture, pronunciation styles. Orthoepic phenomena in vowels and consonants. Application of rhythmic law and its exceptions. Assimilation and its specific features in Slovak. Style, stylization – methods and demonstration of structure of text components.	
<b>Recommended literature:</b> Krátky slovník slovenského jazyka. Bratislava: Veda 1997. Slovník súčasného slovenského jazyka. Bratislava: Veda 2006. Slovník súčasného slovenského jazyka. Bratislava: Veda 2011. Pravidlá slovenského pravopisu. Bratislava: Veda 2000. KRÁĽ, Á.: Pravidlá slovenskej výslovnosti. Bratislava, SPN 1984; 1988. 632 s. ONDRUŠ, Š. – SABOL, J.: Úvod do štúdia jazykov. 3. vyd. Bratislava, SPN 1987. 343s. SABOL, J.- SLANČOVÁ, D. - SOKOLOVÁ, M.: Kultúra hovoreného slova. Prešov, FF UPJŠ 1989. SABOL, J. – BÓNOVÁ, I. – SOKOLOVÁ, M.: Kultúra hovoreného prejavu. Prešov: FF PU 2006. FINDRA, J.: Štylistika slovenčiny. Martin : Osveta, 2004. FINDRA, Ján: Štylistika slovenčiny v cvičeniach. Martin : Osveta, 2005. SLANČOVÁ, D.: Praktická štylistika. 2., upravené a doplnené vydanie. Prešov: Slovacontact 1996. 178 s. ISBN 80-901417-9-X.	

<b>Course language:</b>					
<b>Course assessment</b>					
Total number of assessed students: 57					
A	B	C	D	E	FX
17.54	33.33	24.56	17.54	7.02	0.0
<b>Provides:</b> PhDr. Iveta Bónová, PhD., PhDr. Lucia Jasinská, PhD., Mgr. Lena Ivančová, PhD.					
<b>Date of last modification:</b> 24.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/ ZCVU/04		<b>Course name:</b> Chemical Engineering					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present							
<b>Number of credits:</b> 5							
<b>Recommended semester/trimester of the course:</b> 2., 4.							
<b>Course level:</b> I., II., III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b>							
<b>Learning outcomes:</b>							
<b>Brief outline of the course:</b> General and Inorganic Engineering; Mineral raw materials; Raw materials processing, transport and holding; Chemical reactors; Chemical metallurgy – Fe, Al, Cu working; Inorganic acids manufacture (H <sub>2</sub> SO <sub>4</sub> , HNO <sub>3</sub> , HCl, HF, H <sub>3</sub> PO <sub>4</sub> ); Industrial electrochemistry; Industrial fertilizers; Silicate industry – cement manufacture, ceramics; Petrochemistry							
<b>Recommended literature:</b>							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 12							
A	B	C	D	E	FX	N	P
16.67	58.33	25.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Zuzana Vargová, Ph.D.							
<b>Date of last modification:</b> 26.02.2018							
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/ZMPPV/15		<b>Course name:</b> The Fundamentals of Pedagogico-Psychological Research Methodology			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> II.					
<b>Prerequisites:</b> KPPaPZ/PPgU/15 and KPE/PDU/15					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 381					
A	B	C	D	E	FX
15.49	23.62	25.2	21.52	13.91	0.26
<b>Provides:</b> Mgr. Mária Bačíková, PhD., PhDr. Anna Janovská, PhD.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ ZSP/15		<b>Course name:</b> Essentials of Special Education			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 279					
A	B	C	D	E	FX
44.8	32.26	15.77	5.73	1.43	0.0
<b>Provides:</b> Mgr. Katarína Petriková, PhD.					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ ZTOX/04		<b>Course name:</b> Basic Toxicology			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b> Goal of the course is to provide the students with a knowledge of types of toxic substances and their metabolism, safe and handling of toxic substances.					
<b>Brief outline of the course:</b> Historical aspects, types of toxic substances, types of exposure, dose-response relationship. Disposition of toxic compounds (absorption, distribution, excretion of toxic compounds). Metabolism of toxic compounds. Drugs as toxic substances, food additives and contaminants, environmental pollutants. Statement of chemistry laboratory policy. Safe and handling of toxic substances.					
<b>Recommended literature:</b> G. F. Fuhrman: Allgemeine Toxikologie fuer Chemiker, Teubner Verlag, Stuttgart 1984. V. E. Forbes, T. L. Forbe: Ecotoxicology in Theory and Practice, Chapman&Hall, London 1994. J. A. Timbrell: Introduction to Toxicology, Taylor&Francis, London 1994.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 303					
A	B	C	D	E	FX
20.46	27.39	25.08	17.82	7.92	1.32
<b>Provides:</b> RNDr. Miroslava Matiková-Maľarová, PhD.					
<b>Date of last modification:</b> 26.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ ZZP/12		<b>Course name:</b> Experiential Education			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 1 / 2 <b>Per study period:</b> 14 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 1., 3.					
<b>Course level:</b> II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 213					
A	B	C	D	E	FX
39.44	42.25	15.96	2.35	0.0	0.0
<b>Provides:</b> PaedDr. Renáta Orosová, PhD., Mgr. Katarína Petriková, PhD.					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚTVŠ/ ÚTVŠ/CM/13	<b>Course name:</b> Seaside Aerobic Exercise
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 36s <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Conditions for course completion: Attendance	
<b>Learning outcomes:</b> Learning outcomes: Students will be provided an overview of possibilities how to spend leisure time in seaside conditions actively and their skills in work and communication with clients will be improved. Students will acquire practical experience in organising the cultural and art-oriented events, with the aim to improve the stay and to create positive experiences for visitors.	
<b>Brief outline of the course:</b> Brief outline of the course: 1. Basics of seaside aerobics 2. Morning exercises 3. Pilates and its application in seaside conditions 4. Exercises for the spine 5. Yoga basics 6. Sport as a part of leisure time 7. Application of projects of productive spending of leisure time for different age and social groups (children, young people, elderly) 8. Application of seaside cultural and art-oriented activities in leisure time	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 33	
abs	n
12.12	87.88
<b>Provides:</b> Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.	
<b>Date of last modification:</b> 18.08.2017	

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová,  
CSc.Guaranteeprof. PhDr. Oľga Orosová, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> KSSFaK/ ČGUAP/15	<b>Course name:</b> Reading Literacy in Educational Process
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 18	
abs	n
100.0	0.0
<b>Provides:</b> doc. PaedDr. Ivica Hajdučková, PhD.	
<b>Date of last modification:</b> 28.08.2017	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Mária Ganajová, CSc.Guaranteeprof. PhD. Oľga Orosová, CSc.	