

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ ALP/06		<b>Course name:</b> Alternative Education			
<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.					
<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: 180					
A	B	C	D	E	FX
66.11	30.56	0.56	1.11	0.56	1.11
<b>Provides:</b> Mgr. Katarína Petriková, PhD.					
<b>Date of last modification:</b> 23.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ BDD/05		<b>Course name:</b> Biology of Children and Adolescents			
<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 / 0 <b>Per study period:</b> 28 / 0 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 4., 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Written test					
<b>Learning outcomes:</b> The aim of the subject is to gain the particular level of knowledge about human body and its development. It is necessary for the understanding of specific biological characteristics of children and adolescents linked to development.					
<b>Brief outline of the course:</b> Human ontogenesis. Postnatal development. Age specific features of skeletal and muscular, circulatory, respiratory, gastrointestinal and urinary systems. Reproductive system. Endocrine system. Nervous system. Age specifics of selected diseases and drug dependence arise. Human population and environment.					
<b>Recommended literature:</b> Drobný I., Drobná M.: Biológia dieťaťa pre špeciálnych pedagógov I. a II. Bratislava, PdF UK, 2000 Lipková V.: Somatický a fyziologický vývoj dieťaťa. Osveta Bratislava, 1980 Malá H., Klementa J.: Biológia detí a dorastu. Bratislava, SPN, 1989					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 1402					
A	B	C	D	E	FX
30.53	22.97	17.9	18.12	9.91	0.57
<b>Provides:</b> doc. RNDr. Monika Kassayová, CSc.					
<b>Date of last modification:</b> 21.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteeprof. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/ BKP/14	<b>Course name:</b> Bachelor Project
<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> 5.	
<b>Course level:</b> I.	
<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: 73	
abs	n
95.89	4.11
<b>Provides:</b>	
<b>Date of last modification:</b> 22.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ BKP/14	<b>Course name:</b> Bachelor Project
<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> 5.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Submission of the bachelor project based on the assignments of the supervisor and acceptance of its content by the supervisor.	
<b>Learning outcomes:</b> Bachelor project prepared as a design of a bachelor thesis, as an evidence that student is able to process knowledge available in different resources, cite correctly and keep the layout correctly, prepare a presentation and share the results in front of experts.	
<b>Brief outline of the course:</b> The bachelor project is aimed at the selected problem of physics. Based on the assignments student carries out the following activities: development of the project, formulation of the problem and methods, formal and graphical layout, correct citations and references, basic principles of presentation and its defence.	
<b>Recommended literature:</b> 1. Resources (literature, papers) based on the project assignments. 2. Regulations No. 1/2011 about final works (thesis for University of P.J. Šafárik.	
<b>Course language:</b> Slovak, English	
<b>Course assessment</b> Total number of assessed students: 5	
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. Guaranteeprof. RNDr. Zdenko Hochmuth, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ BLZ/18		<b>Course name:</b> Unmanned Aerial Vehicles			
<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> 5.					
<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: 20					
A	B	C	D	E	FX
35.0	20.0	40.0	5.0	0.0	0.0
<b>Provides:</b> doc. Mgr. Michal Gallay, PhD., doc. RNDr. Ján Kaňuk, PhD., Bc. Eduard Dvorný					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ BPO/14		<b>Course name:</b> Bachelor 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> 4					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> I.					
<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
35.78	30.28	16.51	10.09	7.34	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ BPO/14		<b>Course name:</b> Bachelor 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> 4					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Required number of credits gained basedon submitting the bachelor thesis.					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Presentation of the bachelor thesis results, answering questions of the reviewer and members of professional commission.					
<b>Recommended literature:</b>					
<b>Course language:</b> Slovak or English					
<b>Course assessment</b> Total number of assessed students: 28					
A	B	C	D	E	FX
92.86	3.57	3.57	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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ BSSM/15		<b>Course name:</b> Bachelor State Exam 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> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Answering questions concerning selected fields of the subjects of Bachelor state exam.					
<b>Learning outcomes:</b> Basic knowledge and overview of knowledge in the fields stated by the Bachelor state exam.					
<b>Brief outline of the course:</b> Exam in the field of knowledge in physics consisting of an overview of the following fields: <ul style="list-style-type: none"> <li>- Mechanics and molecular physics</li> <li>- Electricity and magnetism</li> <li>- Oscillations and waves, optics</li> <li>- Nuclear physics</li> <li>- General biophysics</li> <li>- Theoretical mechanics</li> <li>- Theory of electromagnetic field</li> <li>- Statistical physics</li> </ul>					
<b>Recommended literature:</b>					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 12					
A	B	C	D	E	FX
33.33	41.67	16.67	0.0	8.33	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guarantee prof. RNDr. Peter Kollár, DrSc. Guarantee doc. RNDr. Zdenko Hochmuth, CSc.					



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KFaDF/DF2p/03		<b>Course name:</b> History of Philosophy 2 (General Introduction)			
<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> 6.					
<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: 738					
A	B	C	D	E	FX
60.84	13.82	12.6	8.67	3.39	0.68
<b>Provides:</b> doc. PhDr. Pavol Tholt, PhD., mim. prof., Doc. PhDr. Peter Nezník, CSc., PhDr. Katarína Mayerová, PhD., doc. Mgr. Róbert Stojka, PhD.					
<b>Date of last modification:</b> 31.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚMV/ DGS/15	<b>Course name:</b> Students' Digital Literacy
<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> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> continuous assessment and final project	
<b>Learning outcomes:</b> To acquire an overview of the current possibilities of digital technology to develop skills and competencies with emphasis on the area of communication, social interaction and personal. To acquire basic digital skills for working with advanced technologies (mobile phone, tablet, laptop, social media, online webtechnologies). To understand the value of existing advanced technologies for better and more effective learning, work and active life in higher education, lifelong learning and further career prospects.	
<b>Brief outline of the course:</b> Introduction to the problems of current, commonly available digital technology. Tools for access to online information source (mobile applications for access to information systems, databases, data books). Tools for collecting, generating direct information and data and its subsequent analysis and visualization. Tools for providing and sharing of electronic content (cloud technology - Google Drive, Youtube, Google+, Skydrive, Dropbox). Tools for communication, discussion and collaborative activities. Legal work with digital technologies and resources, plagiarism, critical evaluation of digital resources. Security, privacy, digital ethics and etiquette, digital citizenship.	
<b>Recommended literature:</b> 1. Bruff, D. (2009). Teaching with classroom response systems: Creating active learning environments. San Francisco: Jossey-Bass. 2. Byrne, R. (2012). Google Drive and Docs for Teachers. Free Tech for Teachers. 3. Kawasaki, G. (2012). What the Plus! Google+ for the Rest of Us. Amazon igital Services. 4. Kolb, L. (2011). Cell Phones in the Classroom: A Practical Guide for Educators. International Society for Technology in Education.	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 147	

abs	n
96.6	3.4
<b>Provides:</b> doc. RNDr. Stanislav Lukáč, PhD., doc. RNDr. Jozef Hanč, PhD., doc. RNDr. Ľubomír Šnajder, PhD.	
<b>Date of last modification:</b> 23.08.2017	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚINF/EDS/15	<b>Course name:</b> Educational software
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 0 / 2 <b>Per study period:</b> 0 / 28 <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b> 5.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> 1 Preparation of interim assignments: a) Worksheet for student (with custom graphics) b) Multimedia educational presentation (with pictures, animations and sounds) c) Interactive educational quiz (with several types of quiz items) d) Methodological guidance on the use of interactive applications in teaching selected topic of chosen school subject. 2 Creation and presentation of final project on the use of educational software in education.	
<b>Learning outcomes:</b> 1. To acquire an overview of the educational software types and its exploitation in education. 2. To gain or enhance basic skills in working with: a) presentation software, programs for creation and editing images, animations, diagrams, sounds, concept maps, b) programs for creation of quizzes, questionnaires, voting, c) simulation and modeling software, d) selected subject-oriented educational programs, 3. To create and present a final project on the use of educational software in education.	
<b>Brief outline of the course:</b> Educational software types. Onlilne educational sources and tools. Multimedia processing. Tools for creation of teaching aids.	
<b>Recommended literature:</b> 1. Digitálna gramotnosť učiteľa : učebný materiál- modul 1 / Rastislav Adámek ... [et al.]. - Košice : Ústav informácií a prognóz školstva, 2009. - 80 s. - ISBN 9788080861193(brož.). 2. Moderná didaktická technika v práci učiteľa : učebný materiál modul 2 / Rastislav Adámek ... [et al.] ; recenzenti Viliam Fedák, Anton Lavrin. - Košice : Elfa, 2010. - 200 s. - ISBN 9788080861353 (brož.). 3. Web, Multimédia / Martin Homola ... [et al.]. - Bratislava : Štátny pedagogický ústav, 2010. - 68 s. - Č. projektu: ŠPVV ĎVUi 26120130001. - ISBN 9788081180514 (brož.).	
<b>Course language:</b>	
<b>Notes:</b>	

Content of lessons will be flexibly adapted to the field of study of learners. Language learners will be able to work more with pictures and sounds, physicists with simulation programs, mathematicians with mathematical software, etc.

**Course assessment**

Total number of assessed students: 30

A	B	C	D	E	FX
63.33	20.0	13.33	0.0	3.33	0.0

**Provides:** doc. RNDr. Ľubomír Šnajder, PhD.

**Date of last modification:** 23.08.2017

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ ELEM1/15		<b>Course name:</b> Electronics			
<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> 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/VF1b/03 or ÚFV/VFM1b/15					
<b>Conditions for course completion:</b> Exam					
<b>Learning outcomes:</b> To explain physical principles of classical electronic components and systems and technologies of their realization. To perform analysis of properties and functions of basic electronic elements, electronic circuits and information transmission and processing systems. To introduce student into basic elements and devices in area of nanoelectronics and to explain methods of their fabrication and principles of their functioning.					
<b>Brief outline of the course:</b> Structure, properties and physical principles of the activity of selected electronic elements. Analysis of functions and properties of basic analog and digital electronic circuits. Nanoelectronics and selected building components of nanoelectronics: graphene, carbon nanotubes, selected types of nanodevices their properties, fabrication and integration to functional systems.					
<b>Recommended literature:</b> 1. Brown P.B., Frantz G.N., Moraff H.: Electronics for the Modern Scientist. Elsevier, 1982. 2. Delaney C.F.G.: Electronics for the Physicist with Applications. John Willey & Sons, 1980. 3. Wolt E. L.: Quantum Nanoelectronics, An introduction to electronic nanotechnology and quantum computing, Wiley-VCh, 2009					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 152					
A	B	C	D	E	FX
25.0	25.0	28.95	9.21	4.61	7.24
<b>Provides:</b> Mgr. Vladimír Komanický, Ph.D., prof. RNDr. Peter Kollár, DrSc.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ELP1/01		<b>Course name:</b> Electronics Practical			
<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> 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/ELE1/07 or ÚFV/ELEM1/15					
<b>Conditions for course completion:</b> Debate with students during practice, trial preparation and processing of theoretical and experimental results of their defense. Summary evaluation of student activities while working on set topics of study practices.					
<b>Learning outcomes:</b> Practical work of students in the design, construction and properties of the measurements of electronic circuits and interpretation of the results obtained to verify and consolidate the theoretical knowledge acquired in lectures on the subject Electronics.					
<b>Brief outline of the course:</b> 1. Combinatorial logical circuits. 2.Logical memory circuits. 3. Logical sequence circuits. 4. Rectifiers, filters, stabilizers. 5. Amplifier with bipolar transistor. 6. Stabilized DC power supplies. 7. Generators of harmonic signals. 8. Operational amplifiers and operational network interfaces. 9. Digital-to-analog converters. 10. Analog-to-digital converters. 11 Reserve.					
<b>Recommended literature:</b> 1. Delaney C.F.G.: Electronics for the Physicist with Applications. John Willey & Sons, New York, 1980. 2. Zbar P.B., Malvino A.P., Miller M.A.: Basic Electronics: a Text-Lab Manual. Macmillan/McGraw – Hill, New York, 1994.					
<b>Course language:</b> slovak or english					
<b>Course assessment</b> Total number of assessed students: 35					
A	B	C	D	E	FX
97.14	0.0	2.86	0.0	0.0	0.0
<b>Provides:</b> RNDr. Vladimír Tkáč, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ EXFG/15		<b>Course name:</b> Physical Geography 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> 6d <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<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: 706					
A	B	C	D	E	FX
89.94	7.79	1.27	0.14	0.42	0.42
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., RNDr. Dušan Barabas, CSc., RNDr. Alena Gessert, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ EXHG1/15		<b>Course name:</b> Human Geography 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> 6d <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 5.					
<b>Course level:</b> I.					
<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: 674					
A	B	C	D	E	FX
82.94	8.75	5.64	1.04	0.89	0.74
<b>Provides:</b> prof. RNDr. Peter Spišiak, CSc., RNDr. Stela Csachová, PhD., Mgr. Marián Kulla, PhD., Mgr. Ladislav Novotný, PhD., RNDr. Janetta Nestorová-Dická, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ FDE/15		<b>Course name:</b> Physics in Demonstration Experiments			
<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> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Seminar work – a project dealing with hands-on experiments and their role in Physics teaching.					
<b>Learning outcomes:</b> The goal of the course is to get better the understanding of basic physical concepts and phenomena through demonstrational physical experiments.					
<b>Brief outline of the course:</b> The course is aimed at the conceptual understanding of basic physical concepts and phenomena with the help of selected demonstrational experiments. The experiments concern the content of the subject Introductory physics and their realization is based on students' active participation.					
<b>Recommended literature:</b> 1. D.Halliday, R.Resnick, J.Walker: Fyzika, VUTIUM, Brno, 2000 2.K.Cummings, P.W.Law, E.F.Redish, P.J.Cooney: Understanding Physics, John Wiley & Sons, Inc., 2004 3.P.G.Hewitt: Conceptual Physics, tenth edition, Pearson, Addison Wesley, 2006 4.L.Onderová, M.Kireš, Z.Ješková, J.Degro: Praktikum školských pokusov II, PF UPJŠ, 2004					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 16					
A	B	C	D	E	FX
81.25	6.25	6.25	6.25	0.0	0.0
<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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/FGS/15		<b>Course name:</b> Physical Geography of Slovakia			
<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> 5.					
<b>Course level:</b> I.					
<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: 431					
A	B	C	D	E	FX
20.42	29.47	30.86	12.99	4.18	2.09
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., RNDr. Alena Gessert, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ FYG1/18		<b>Course name:</b> Physical geography 1			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Hydrology of the running water, genesis and development of river basins, measuring of water and its flow. Genesis and the main types of lakes, temperatures, water movements. Sea and water currents, its chemical properties, relief of the sea-floor. Subsurface waters, glaciers. In the section of soil science and soil geography, physical and chemical nature of soils will be treated as well as actual and presently used systems of the soil classification. Distribution of different soil types in the world and Slovakia, principles of the soil zonality.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 686					
A	B	C	D	E	FX
2.33	4.96	19.1	28.28	38.05	7.29
<b>Provides:</b> RNDr. Dušan Barabas, CSc., RNDr. Alena Gessert, PhD., Mgr. Imrich Sládek, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ FYG2/05		<b>Course name:</b> Physical geography 2			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Atmospheric conditions and their physical origins, general planetary air circulation, most important climatic types and the climate of Slovakia. Measuring of the basic meteorological events will be done by students in the practical part of this course. In the study of biogeography we will focus on the biosphere as a part of the physical-geographic sphere. Further focus will be put on the function and position of organisms on the surface, as well as the main regularities of their distribution throughout the world. Phytogeographical and zoogeographical regions of the world and Slovakia. In the practical part students acquaint with the soil profiles and important kinds of plants in Slovakia.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 646					
A	B	C	D	E	FX
28.48	27.86	25.7	11.15	6.35	0.46
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., RNDr. Alena Gessert, PhD., Mgr. Imrich Sládek, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ GCR/12		<b>Course name:</b> Geography of the Czech Republic			
<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> 5.					
<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> Geological structure of the Czech Republic, main geological entities according to the newest classification. Geomorphological structure and the relief evolution, geomorphological entities and units. Climate, hydrography of the Czech Republic, underground waters and mineral waters. Soils, phytogeography and zoogeography, present landscape types. History of settlements in the Czech Republic from the historical perspective. National, linguistic and religious structure. Urban and rural settlements. Administrative division and its historical development. Economy of the country - natural resources, agriculture, industry, transport, education and tourism.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 218					
A	B	C	D	E	FX
50.0	31.65	15.14	3.21	0.0	0.0
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., Mgr. Marián Kulla, PhD.					
<b>Date of last modification:</b> 20.09.2017					
<b>Approved:</b> Guarantee prof. RNDr. Peter Kollár, DrSc. Guarantee doc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ GEE2/07		<b>Course name:</b> Geoecology			
<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>					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Focus will be put on the development of this discipline, different dimensions of the physical – geographic complexes, regularities of the space differentiation of the physical – geographic sphere, evolution, and dynamics of the physical – geographic complexes. Synthesis of the principles of landscape and landscape-ecological planning.					
<b>Recommended literature:</b> BEDRNA, Z., a kol. 1992: Analýza a čiastkové syntézy zložiek krajinnej štruktúry. Bratislava. Učebné texty, 95 s.. MIČIAN, Ľ., ZATKALÍK, F. 1984: Náuka o krajine a starostlivosť o životné prostredie. UK Bratislava skriptá, 137s. MIČIAN, Ľ. 1989: Pokus o novú definíciu krajinnej ekológie. Ekológia (ČSFR), 3,1,Veda, Bratislava, s. 7-12. MIČIAN, Ľ. 2008: Všeobecná geoekológia. Bratislava: Geo-grafika, 88 s. – Skriptá.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 648					
A	B	C	D	E	FX
5.09	12.5	20.22	24.23	35.65	2.31
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., RNDr. Dušan Barabas, CSc., Mgr. Imrich Sládek, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ GEM2/18		<b>Course name:</b> Geomorphology			
<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> 2.					
<b>Course level:</b> I.					
<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: 1173					
A	B	C	D	E	FX
9.72	21.48	20.97	16.37	21.14	10.32
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., RNDr. Alena Gessert, PhD., Mgr. Imrich Sládek, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ GEOM/15		<b>Course name:</b> Geography			
<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> I.					
<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: 113					
A	B	C	D	E	FX
15.93	19.47	26.55	17.7	20.35	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ GEP2/18		<b>Course name:</b> Fundamentals of Geology for Geographers			
<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> 1.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Courses have following objectives: firstly, to introduce the current theories of processes which occur in the Earth (global tectonics, species of magmatism), secondly, to describe the rock-forming minerals, taxology of intrusive rocks, taxology of sedimentary rocks and rocks which had overcome metamorphosis, basics of the regional geology of Slovakia, basics of the historical geology and paleontology.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 995					
A	B	C	D	E	FX
7.14	15.38	31.46	28.54	11.66	5.83
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., Ing. Katarína Bónová, PhD., Ing. Ján Bóna					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ GEX1/07		<b>Course name:</b> Geological 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> 3d <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.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Visiting of different localities in the Western Carpathian tectonic units - Flysh belt, Klippen belt, Central Western Carpathians. Visiting of several localities of mining in Slovakia and getting to know the process of manufacturing of the rocks.					
<b>Recommended literature:</b> Regionálne geologické mapy Slovenska (1:50 000) + Vysvetlivky. ŽEC, B. et al., 2005: Exkurzný sprievodca ku kongresu Slovenskej geologickej spoločnosti Zemplínska šírava - Medvedia hora. CompuGraph, Košice, 138s. BIELY, A. et al., 1996: Geologická mapa Slovenska, 1 : 500 000. MŽP SR, ŠGÚDŠ, Bratislava. MIŠÍK, M., 1976: Geologické exkurzie po Slovensku. SPN Bratislava, 276 s. NĚMEC, F., 1987: Kľúč na určovanie nerastov a hornín. SPN Bratislava, 240 s. PELLANT, CH., PELLANTOVÁ, H., 1994: Horniny a minerály. Osveta, Martin, 256 s.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 403					
A	B	C	D	E	FX
79.16	15.63	3.23	0.0	0.0	1.99
<b>Provides:</b> Ing. Katarína Bónová, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ GIS/15		<b>Course name:</b> Geographic Information Systems			
<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> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> The assessment is a combination of continual control during the practicals and the final exam in the examination period. The continual assessment is performed during the semester and it involves 1 written test in the mid-term of the semester and a project report generated according to the assignment and practical skills acquired during the practicals. The student can go for the final exam in case he or she acquired at least the E mark in the continual assessment. The final assessment mark is the result of the average of the marks received in the mid-term test, project report and final exam. The final exam is a written test. The credits are given in case the student had reached at least the E mark in continual assessment and final exam. The following marking scheme is applied in the assessment: A (100-90 points), B (80-89 points), C (70-79 points), D (60-69 points), E (50-59 points), FX (0-49 points).					
<b>Learning outcomes:</b> The student will understand the basics of the theory of geoinformation science, GIS, and Remote Sensing. The student will be able perform tasks in a GIS software, generate thematic maps and conduct basic spatial analyses such as spatial queries, attribute queries, terrain modelling, editing custom geodata, importing geodata.					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b> Slovak or Czech or English					
<b>Course assessment</b> Total number of assessed students: 317					
A	B	C	D	E	FX
30.28	24.92	25.87	12.3	6.62	0.0
<b>Provides:</b> doc. Mgr. Michal Gallay, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/ GMAP/13	<b>Course name:</b> Geomorphological mapping
<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., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> The evaluation of the subject consists of assesment of one main semestral work - geomorphological map of the area (50 points) and 2-3 partial works (50 points), the total amount of points is 100. The student has to aquire minimum of half points from each work. For successful graduation of the subject the student has to aquire 51 points and more.	
<b>Learning outcomes:</b> after the graduation of the subject the student should information applied to the praxis and be able to map area with the main aim of high quality map and the legenda.	
<b>Brief outline of the course:</b> The main of the subject is to understand the topic of the geomorphological mapping, geomorphological map and its importance. It deals with the history of the geomorphological mapping, maps in slovak and foreign literature, about theory and praxis of field works and maps compilation, creating of the geomorphological map legenda for different relief types. With help of graphical softwers we are working with morphometric and morphographic relief characeter, the morphogenetical nad morphodynamical interpretation of the geomorphological map. After the theoretical part of seminars there is practical field mapping in the scale of 1: 10 000 at the and of the semester.	
<b>Recommended literature:</b> DEMEK, J. (edit.), 1972: Manual of detailed geomorphological mapping. Academia, Brno, 344 s. MINÁR, J., 1995: Niektoré teoreticko-metodologické problémy geomorfológie vo väzbe na tvorbu komplexných geomorfologických máp. Acta Facultatis Rerum Naturalium Universitatis Comenianae, Geographica Nr. 36, Bratislava, 7-125. SMITH, M., PARON P., GRIFFITHS, J., 2011: Geomorphological mapping – methods and applications. School of Geography, Geology and the Environment, Kingston University, UK. 610 s. URBÁNEK, J., 1997: Geomorfologická mapa: niektoré problémy geomorfologického mapovania na Slovensku. Geografický časopis, 49, 3-4, 175-186. ZAŤKO, M. et al. 1986: Obecná geomorfologická mapa a jej legenda. In: Cvičenia z fyzickej geografie. Prírodovedecká fakulta Univerzity Komenského, Bratislava. 43-53.	
<b>Course language:</b>	

**Course assessment**

Total number of assessed students: 10

A	B	C	D	E	FX
90.0	0.0	10.0	0.0	0.0	0.0

**Provides:** RNDr. Alena Gessert, PhD.**Date of last modification:** 22.02.2018**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ HGS/15		<b>Course name:</b> Human Geography of Slovakia			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 6.					
<b>Course level:</b> I.					
<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: 431					
A	B	C	D	E	FX
3.71	9.51	18.56	35.27	28.31	4.64
<b>Provides:</b> prof. RNDr. Peter Spišiak, CSc., Mgr. Marián Kulla, PhD., RNDr. Janetta Nestorová-Dická, PhD., Mgr. Loránt Pregi, Mgr. Ladislav Novotný, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ HUG2a/05		<b>Course name:</b> Human geography (productive sphere)			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> Location theories, factors and methods of industry evaluation. Territorial industrial units and regionalisation of the industry in Slovakia. Geographical characteristics of selected types of industry. Relationship of industry and environment. Trends in development and problems of the world economy. Development of agriculture and regularities of distribution of agricultural lands. The agricultural countries and their typology. The land use map. Geography of forests and its typology.					
<b>Recommended literature:</b> FALKOWSKI, J., KOSTROWICKI, J., 2001: Geografia rolnictwa świata. PWN, Warszawa, 516 p. KNOX, P., L., et al. 2010: Human geography. Places and regions in Global Context. pearson International Edition., 513 p. KOREC, P. 1994: Humánna geografia 1. Prírodovedecká fakulta, Univerzita Komenského, Bratislava, 120 s. MIRVALD, S., 2002: Geografie dopravy II. ZČU Plzeň, 56 s. MIRVALD, S., 2002: Geografie dopravy III. ZČU Plzeň, 43 s. POPJAKOVÁ, D., 1997: Základné kapitoly z geografie priemyslu, Prešov: PU, 144 s. SPIŠIAK, P., 2005: Základy geografie poľnohospodárstva a lesného hospodárstva. Prírodovedecká fakulta, Univerzita Komenského, Bratislava. 140 s. TOUŠEK, V. a kol., 2008: Ekonomická a sociální geografie, Plzeň, 2008, 411 s.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 611					
A	B	C	D	E	FX
7.2	21.6	29.3	27.99	11.78	2.13
<b>Provides:</b> prof. RNDr. Peter Spišiak, CSc., Mgr. Marián Kulla, PhD., Mgr. Martina Magdošková					



<b>Date of last modification:</b> 22.02.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ HUGN/15		<b>Course name:</b> Human geography (Non-production Systems)			
<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> 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b> BOROVSKEÝ, J. a kol., 2008: Cestovný ruch, trendy a perspektívy. Iura Edition, 280 s. GOELDNER, CH.R., BRENT RICHIE, J.R., 2014: Cestovní ruch - principy, příklady, trendy. Biz books, 545 s. HALÁS, M., 2000: Zahraničný obchod SR s ČR. Geographical Studies 7, Constantine the Philosopher University Nitra, s. 98-107. HALL, C.M. - PAGE, S.J. 2002: The geography of tourism and recreation, 2. edition, London and New York, 399 p. HAVRLANT, J., 2007: Geografie cestovního ruchu I. Základy geografie cestovního ruchu, Ostravská univerzita, 41 s. MARIOT, P., 1983: Geografia cestovného ruchu. Veda, Bratislava, 224 s. OTRUBOVÁ, E., 2003: Humánna geografia II (Geografia zahraničného obchodu, Geografia cestovného ruchu). Prírodovedecká fakulta UPJŠ, Košice, 105 s. ŠTEPÁNEK, KOPAČKA, ŠÍP, 2001: Geografie cestovního ruchu, Vydalo Karolinum Praha, 228s.					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 435					
A	B	C	D	E	FX
15.17	23.22	28.05	21.15	11.26	1.15
<b>Provides:</b> Mgr. Marián Kulla, PhD., prof. RNDr. Peter Spišiak, CSc., Mgr. Martina Magdošková					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ HYP/15		<b>Course name:</b> Fieldwork in Hydrology			
<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> 4.					
<b>Course level:</b> I.					
<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: 62					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> RNDr. Dušan Barabas, CSc.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ INP/17		<b>Course name:</b> Inclusive Pedagogy			
<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> 5.					
<b>Course level:</b> I.					
<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>					
<b>Date of last modification:</b> 05.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/ KAG/15	<b>Course name:</b> Cartography and Geoinformatics
<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> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> During the semester it is necessary to pass out the work outputs from the exercises. The knowledge gained on the exercises will be verified by continuous written examinations. The number of work outputs and written examinations will be announced at the beginning of the semester. It is possible to obtain 30% of the assessment criteria for the exercise (work outputs and written examinations). The resulting assessment from the exercise is based on the method fulfilled/not fulfilled. The final evaluation of the study subject is based on the combination of the evaluation conditions from the exercise and the final exam. The final exam may be enrolled by a student who has fulfilled the requirements for attending the exercises. The final assessment is the weighted average of the exercise assessment (30%) and the final exam (70%). Credits are awarded only to a student who achieves rating at least at the grade level of the grade E. Credits will not be awarded to a student who does not meet the requirements of the exercise and the exam is rated FX.	
<b>Learning outcomes:</b> The main learning outcomes include theoretical and practical skills in cartography and geoinformatics. Students understand cartographic and GIS terminology, students can apply cartographic approaches and methods using GIS, projections and define the content and composition of maps in GIS.	
<b>Brief outline of the course:</b> Cartography - the branch of science, position in the system of sciences, the history of cartography, topographic mapping in Slovakia; Cartographic projects, cartographic interpretation; Description maps, geographical names, cartographic generalization, State map series; Cartometry and morphometry; Mathematical cartography (reference area map projection and distortion). Geoinformatics – the branch of science, elements of GIS, digital representation of landscape, raster and vector data, data collection and processing data for GIS, geospatial database, visualization and cartographic representation using GIS, applications of GIS.	
<b>Recommended literature:</b> HOFIERKA, J., J. KAŇUK, M. GALLAY, 2014. Geoinformatika. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach. ISBN 978-80-8152-178-2. HOJOVEC, V. et al., 1987. Kartografie. Praha: Geodetický a kartografický podnik v Praze. ISBN 29-621-87.	

<p> LONGLEY, P.A., M. GOODCHILD, D. J. MAGUIRE, D. W. RHIND, 2010. Geographic Information Systems and Science. 3rd ed. Hoboken: Wiley &amp; Sons, ISBN 978-0-470-72144-5.  PRAVDA, J., D. KUSEDOVÁ, 2004. Počítačová tvorba tematických máp. Bratislava: Univerzita Komenského v Bratislave. ISBN 80-223-2011-0.  ROBINSON, A. H. et al., 1995. Elements of Cartography. 6th ed. Hoboken: Wiley &amp; Sons. ISBN 0-471-55579-7.  VOŽENÍLEK, V. et al., 2011. Metody tematické kartografie - Vizualizace prostorových jevů. Olomouc: Univerzita Palackého v Olomouci. ISBN 978-80-24427-90-4. </p>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 345					
A	B	C	D	E	FX
11.59	23.19	21.16	17.97	21.16	4.93
<b>Provides:</b> prof. Ing. Vladimír Sedlák, PhD., Mgr. Ján Šašak, Mgr. Katarína Onačillová					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ KAR/05		<b>Course name:</b> Basics of Karstology and Speleology			
<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.					
<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: 222					
A	B	C	D	E	FX
77.48	15.32	5.41	0.0	1.8	0.0
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., RNDr. Alena Gessert, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ KMG/17		<b>Course name:</b> Quantitative Methods in Geography			
<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> 3					
<b>Recommended semester/trimester of the course:</b> 2., 4.					
<b>Course level:</b> I.					
<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: 121					
A	B	C	D	E	FX
28.93	19.01	18.18	19.01	14.88	0.0
<b>Provides:</b> RNDr. Janetta Nestorová-Dická, PhD., prof. Mgr. Jaroslav Hofierka, PhD., Mgr. Jozef Šupinský					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, 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. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/KRS/08	<b>Course name:</b> Complex geographic characteristics of selected world regions
<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> 6.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> At the beginning of semester, students will be told the topics to be drawn up as written report and presented in a slideshow. This part is 50 % of total grading. The results of tests written during the semester constitute another 50 % of total grading. To obtain A grade, weighted average of the both parts of examination must reach at least 90%, To obtain B it is 80%, for C it is 70%, for D 60% and for E 50%. Credits shall not be granted to a student who obtain less than 50 % from any of both parts of examination.	
<b>Learning outcomes:</b> Understanding of causal relations between individual geographic phenomena in spatial and temporal context of individual regions; extended knowledge about selected regions.	
<b>Brief outline of the course:</b> Geographic location, geologic history and structure, orography and shapes of coast, climate, hydrology, soils and biogeography, protection of nature, current landscape and its transformation, historical and political development, population and sites, economy and integration groupings in selected regions of the world.	
<b>Recommended literature:</b> DE BLIJ, H. J. et al: 2013: The World Today - Concepts and Regions in Geography, 6th edition. New York (Wiley), 528 p. HOBBS, J. J. 2010: Fundaments of World Regional Geography, 2nd edition. Belmont (Brooks/Cole), 438 p. WEIGHTMAN, B. 2010: Dragons and Tigers – A Geography of South, East and Southeast Asia, 3rd edition. Hoboken (Wiley), 523 p. BAAR, V. 2002: Národy na prahu 21. století. Emancipace nebo nacionalismus? Ostrava (Ostravská univerzita), 416 s. BRADSHAW, W. et al. 2012: Contemporary World Regional Geography, 4th edition. New York (McGrawHill), 620 p.	
<b>Course language:</b> Slovak and English	
<b>Course assessment</b> Total number of assessed students: 476	

A	B	C	D	E	FX
27.94	36.34	21.85	8.4	4.83	0.63
<b>Provides:</b> Mgr. Ladislav Novotný, PhD.					
<b>Date of last modification:</b> 20.09.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/ KUL/12	<b>Course name:</b> Cultural geography
<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> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> - presentation of paper on the assignment theme, concluding test – minimum of success rate is 60 %	
<b>Learning outcomes:</b> - deeping and gaining a new knowldiges): - about research object and subject of cultural geography and incorporation of cultural geography in the context of human geographical events, - about cultural develompent on the Earth, - about development and basic feature of civilisation), - about globalization in culture and her trends, etc.).	
<b>Brief outline of the course:</b> 1. Cultural geography, object and subject of resarch and incorporation of cultural geography in the context of human geographically events 2. Cultural geography, object and subject of resarch and incorporation of cultural geography in the context of human geographically events 3. Helping events of cultural geography - history, archaeology, ethnology, ... etc. 4. Cultural development of mankind – its manifestations, artefacts and geographically differentiation 5. Fire paces of world civilization, its origin and genesis. Fundamental characteristics and manifestations, contribution for the present 6. Ethnic, nationality and religion differentiation of world population 7. Cultural landscape, its attributes, components and elements 8. Cultural manifestations mankind in the rural and urban landscape – agriculture, ..., fine art, architecture (styles and its geographical distribution 9. Cultural regions of world - in opinion of various conceptions and authors 10. Cultural regions of Slovakia 11. Educational excursion on the selected theme – for example Jews in the Slovakia – exposition in Prešov, Jews in Košice, etc	
<b>Recommended literature:</b> ANĎEL. J. (1998): Kultúrní geografie. UJEP Ústí nad Labem, 146 s. BARŠA, P. Politická teorie multikulturalismu, CDK, 1999. BEŇUŠKOVÁ, Z. et al. Tradičná kultúra regiónov Slovenska.	

BERGMAN, E. F. (1995): Human Geography. Cultures, Connections and Landscapes. Prentice Hall, Engewood Cliffs.

BONNEMAISON, J. (2005): Culture and Space. I. B. Tauris.

COSGROVE, D., JACKSON, P. (1987): New direction in cultural geography. Area, 19, 95-101.

DOSTÁL, P. (1999): Ethnicity, mobilization and territory: an overview of recent experiences. Acta UC, Geographica, XXXIV, 1, s. 45-58. (KgaRR č. 2937)

HEŘMANOVÁ, E., CHROMÝ, P. a kol.(2009). Kulturní regiony a geografie kultury. 1. vyd. Praha: ASPI, a. s., 292-301. ISBN 978-80-7357-339-3.

KRUPA, V., GENZOR, J. (1996): Jazyky sveta v priestore a čase. Veda, SAV Bratislava, 356 s. ISBN 80-224-0459-4, s. 27-43.

MACDONALD, F., MASON, A. (2009): Kultúra Ľudstva. Ottova encyklopédia. Ottovo nakladateľství, s. r. o. Praha, 256 s. ISBN 978-80-7360-469-1

MIKLÓŠ, L. et al. 1996 Prírodné podmienky a kultúra využitia krajiny, Kult.-historické krajinné-ekologické podmienky rozvoja B. Štiavnice, Sv. Jura a Lipt. Tepličky, B. Štiavnica

MURRAY, W. E. (2006): Geographies of Globalization. Routledge Contemporary Human Geography. Routledge Taylor & Francis Group London and New York, 32 s.

NEUE KULTURGEOGRAPHIE. Petermanns Geographische Mitteilungen, 2/2003. Themenheft PGM. ISBN 3-623-08102-7

ROGERS, A. (1994): Lidé a kultúry. Nakladatelský dům Praha, 256 s.

**Course language:**

Slovak

**Course assessment**

Total number of assessed students: 480

A	B	C	D	E	FX
55.42	31.25	9.79	3.13	0.42	0.0

**Provides:** prof. RNDr. Peter Spišiak, CSc., Mgr. Marián Kulla, PhD.

**Date of last modification:** 22.02.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ KVM/15		<b>Course name:</b> Quantum Mechanics 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> 3 / 2 <b>Per study period:</b> 42 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b> To become familiar with elementary principles of quantum mechanics and to illustrate its possible applications on selected examples.					
<b>Brief outline of the course:</b> A subject matter, experimental and theoretical foundations of quantum mechanics (QM). Basic axioms of QM. Schrödinger equation and its solution for a square potential well, harmonic oscillator and spherically symmetric potentials. Tunnel effect and over-barrier reflection. Spin and Pauli matrices. Systems of identical particles, bosons, fermions and Pauli exclusion principle.					
<b>Recommended literature:</b> 1. Ľ. Tóth, M. Tóthová, Kvantová a štatistická fyzika I, Rektorát Univerzity P. J. Šafárika, 1982. (in Slovak language) 2. Ľ. Skála, Úvod do kvantovej mechaniky, Academia, Praha, 2005. (in Czech language) 3. J. Pišút, L. Gomolčák, Úvod do kvantovej mechaniky, Bratislava 1983. (in Slovak language) 4. W. Greiner, Quantum Mechanics, 4th edition, Springer, Berlin, 2000. 5. A. C. Philips, Introduction to Quantum Mechanics, Wiley, Weinheim, 2003. 6. D. J. Griffiths, Introduction to Quantum Mechanics, Prentice Hall, New Jersey, 1995.					
<b>Course language:</b> EN - english					
<b>Course assessment</b> Total number of assessed students: 14					
A	B	C	D	E	FX
28.57	7.14	28.57	21.43	0.0	14.29
<b>Provides:</b> doc. RNDr. Jozef Strečka, PhD.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, 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. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/LOS/18		<b>Course name:</b> Linux and open source GIS			
<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> 3.					
<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: 22					
A	B	C	D	E	FX
68.18	31.82	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. Mgr. Michal Gallay, PhD., prof. Mgr. Jaroslav Hofierka, PhD., Mgr. Štefan Kolečanský					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

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

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/ MG/18	<b>Course name:</b> Geography of mining
<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> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> The evaluation is based on a combination of continuous and final control. The continuous control is carried out during the teaching part by written test with a share of 30 % of the final evaluation. The final control is written and constitutes 70 % of the final evaluation. The resulting evaluation is a weighted average of the continuous (30 %) and final (70 %) controls. Credits will be awarded only to student who achieves the evaluation at the minimum level of the mark E in every part of the evaluation.	
<b>Learning outcomes:</b> To acquaint students with basic facts and knowledge of the history of mining science from the view of geographic aspect to obtain information overview of the history of world and Slovak mining for geographic purposes.	
<b>Brief outline of the course:</b> Historical foundations of the global mining industry, mining oldest written records of mining heyday in the Middle Ages, the first mining maps, Slovak ore mining in the Austro-Hungarian Empire, First World Mining Academy in Banská Štiavnica mining and migration of the population, the world "gold rush", salt roads Europe, coal mining and electrification of industry, environmental consequences of mining devastation, mining open-air museums in Slovakia and Europe and their importance for the promotion of tourism.	
<b>Recommended literature:</b> Odporúčaná literatúra: Ježek, B. a Hummel, J., 2006: Georgius Agricola, Dvanásť kníh o baníctve a hutníctve. Preklad z českého originálu: Petr, K. a Petrová, M., Ostrava: Montanex a.s., 2006, 546s., ISBN 80-7225-218-6. Puzder, J., 2000: Samuel Mikovíni, život a dielo. Košice: FBERG TU Košice, 115s. Vozár, J., 2000: Zlatá kniha baníctva. Košice: Tibor Turčan/Banská agentúra, 2000, 263s., ISBN 80-968421-4-5. Vozár, J., 2002: Kódex mestského a banského práva Banskej Štiavnice. Košice: Tibor Turčan/Banská agentúra, 2002, 71s., ISBN 80-968621-2-X. Zícha, Z., 2005: Back to the past. The history of technology and manpower in the mining is a legacy which cannot be forgotten. Ústí nad Labem: CDL Design s.r.o., 2005, 98p., ISBN 80-902278-9-9.	

<b>Course language:</b> Slovak					
<b>Notes:</b> without notices					
<b>Course assessment</b> Total number of assessed students: 6					
A	B	C	D	E	FX
66.67	16.67	16.67	0.0	0.0	0.0
<b>Provides:</b> prof. Ing. Vladimír Sedlák, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ MHG1/07		<b>Course name:</b> Fieldwork in Human Geography			
<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> 4d <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 6.					
<b>Course level:</b> I.					
<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: 529					
A	B	C	D	E	FX
95.46	0.95	1.51	1.51	0.57	0.0
<b>Provides:</b> prof. RNDr. Peter Spišiak, CSc., RNDr. Stela Csachová, PhD., Mgr. Marián Kulla, PhD., RNDr. Janetta Nestorová-Dická, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/MIK/15	<b>Course name:</b> Microgeography
<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> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Účasť na cvičení, vypracovanie a prezentácia semestrálnej práce, absolvovanie záverečného testu. Kredity sa neudelia študentovi, ktorý nebude mať úspešne spracovanú a odprezentovanú semestrálnu prácu a neabsolvuje záverečný test min. na 50%. Semestrálna práca musí byť spracovaná podľa pokynov vyučujúceho, týkajúcich sa rozsahu, štruktúry a mapových príloh. Výsledná známka je daná váženým priemerom podľa kľúča: 2x známka za semestrálnu prácu + 1x známka z testu/3 = výsledná známka.	
<b>Learning outcomes:</b> Ability of synthesis and analysis of selected micro-region for the needs of local government.	
<b>Brief outline of the course:</b> 1. The micro-region and the local region in the context of regional taxonomic levels. 2. Theory and Methodology, collection of information (data collection). 3. Differentiation landscape sphere and cultural landscapes of the example chosen region (Location - Geology - Relief - Climate - Rivers - Soils - Flora - Fauna - Population (population dynamics, forecasts, Statistical offices) - Settlements (change in the function of settlements, place in the settlement system, land use map, questionnaires, mapping) - Primary sector - Secondary sector - Tertiary Sector. 4. Regionalization – branch, complex, land use. 5. TUR - MUSES - USES - RUSES. 6. Complex presentation of the research territory at the Municipal Office.	
<b>Recommended literature:</b> DUBCOVÁ, A. 2012: Mikrogeografia – krajina okolo nás, UKF Nitra, 185 s. HASPROVÁ, M. 2006: Geografia miestnej krajiny v edukačnom procese, UKF Nitra, 203 s. KANDRÁČOVÁ, V., MICHAELI, E. 1996: Mikrogeografia v edukácii, výskume a pre prax. In: Krajina východného Slovenska v odborných a vedeckých prácach. Prešov: KGG PdF UPJŠ, 1997, s. 265 – 285. KANDRÁČOVÁ, V., MICHAELI, E. 1998: Ľubotice. OÚ Ľubotice. 116 s. KOLEKTÍV, 1977: Vlastivedný slovník obcí na Slovensku diely I-II, Veda Bratislava. 528 s., 519 s. KOLEKTÍV, 1978: Vlastivedný slovník obcí na Slovensku diely III, Veda Bratislava. 533 s. LUKNIŠ, M. 1946: Jakubiany. In: Sborník prác PriF Slovenskej univerzity v Bratislave – Práce Geografického ústavu. Bratislava, PriF SU, 1946, zväzok XIV., č. 2, 67 s. LUKNIŠ, M., 1977: Geografia krajiny Jura pri Bratislave. UK, Bratislava. 211 s.	



MICHALOVÁ, J., MICHAL, P. 1980: Geografia okresu Veľký Krtíš, Osveta, Bratislava, 288 s.  
 MLÁDEK, J. et al. 1993: Región Poprad, geografické štruktúry socioekonomických aktivít. UK, Bratislava, 205 s.  
 ŠIŠÁK, J. 1970: Geografia Rožňavskej kotliny a jej horskej obruby. OBZOR, Bratislava, 319 s.

**Course language:**

Slovak

**Course assessment**

Total number of assessed students: 61

A	B	C	D	E	FX
49.18	39.34	9.84	1.64	0.0	0.0

**Provides:** prof. RNDr. Peter Spišiak, CSc., Mgr. Imrich Sládek, PhD.

**Date of last modification:** 22.02.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/MMKV/17		<b>Course name:</b> Multiculturalism and Multicultural Education			
<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.					
<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
31.25	27.08	37.5	2.08	2.08	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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

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

F. Close : The Cosmic Onion, 1990 Cindy Schwarz :A Tour of the Subatomic Zoo, 1997 Frank Close, Michael Marten, Christine Sutton : The Particle Odyssey- A Journey to the Heart of Matter, 2002 <a href="http://vk.upjs.sk/~epog/2006/">http://vk.upjs.sk/~epog/2006/</a> Scientific journals	
<b>Course language:</b> english	
<b>Course assessment</b> Total number of assessed students: 10	
abs	n
100.0	0.0
<b>Provides:</b> Dr.h.c. prof. RNDr. Alexander Feher, DrSc.	
<b>Date of last modification:</b> 01.03.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚMV/ MTFa/15		<b>Course name:</b> Mathematics I for physicists			
<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> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Two written tests and one homework with exercises from the whole semester. The final evaluation is given according to the results from the semester and in view of the results of the written final test.					
<b>Learning outcomes:</b> To obtain basic knowledge on functions of one variable and their properties; to be able to apply the theory in concrete exercises.					
<b>Brief outline of the course:</b> Functions, basic properties. Elementary functions. Continuous functions. Limits. Derivation and its geometric applications. Theorems about continuous functions. Behaviour of functions. Indefinite integrals, basic methods of integration. Definite integral and its applications.					
<b>Recommended literature:</b> S. Lang: A First Course in Calculus, Springer Verlag, 1998					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 312					
A	B	C	D	E	FX
8.33	8.33	14.1	19.55	29.49	20.19
<b>Provides:</b> doc. RNDr. Roman Soták, PhD., RNDr. Erika Vojtková					
<b>Date of last modification:</b> 27.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc. Guaranteeprof. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚMV/MTFb/15		<b>Course name:</b> Mathematics II for physicists			
<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> I.					
<b>Prerequisites:</b> ÚMV/MTFa/15					
<b>Conditions for course completion:</b> Two written tests and one homework with excercises from the whole semester, final test. According to the results from the semester and in view of the results of the written final test.					
<b>Learning outcomes:</b> To develop acquired knowledge of mathematical analysis with knowledge on linear algebra and functions of more variables. To learn to solve basic types of differential equations and know how to use them to model real-world phenomena. To learn to solve problems about infinite series.					
<b>Brief outline of the course:</b> System of linear algebraic equations, determinants. Functions of more variables, continuity and limits, partial derivations, local extremes of functions of two variables. Some types of differential equations. Series, functional series, Taylor and MacLaurin series.					
<b>Recommended literature:</b> 1. S. Lang: A First Course in Calculus, Springer Verlag, 1998 2. Huťka V., Benko E., Ďurikovič V.: Matematika, Alfa, Bratislava 1991. 3. Došlá, Z.: Matematika pro chemiky, 1.díl. Masarykova univerzita, Brno, 2010.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 178					
A	B	C	D	E	FX
11.24	16.29	12.36	25.84	29.21	5.06
<b>Provides:</b> doc. RNDr. Stanislav Lukáč, PhD., RNDr. Anton Hovana					
<b>Date of last modification:</b> 27.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, 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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/OBY2/18	<b>Course name:</b> Geography of population and settlements
<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> 3.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Evaluation of student performance is carried out by combining ongoing review during the term of examination for the period of the semester. Continuous control consists of min. 80 % of the active participation of students in teaching and successfully solving assignments. If a student does not reach required active participation of teaching and successfully does not solve the given problem can not log on to the test.	
<b>Learning outcomes:</b> The student will acquire theoretical and methodological basis of Geography of Population and Settlements. Students will acquire a basic spatial differentiation of population and settlements in the world according to basic characteristics.	
<b>Brief outline of the course:</b> Population geography as a science discipline; Trends and forecasts of the world population; Distribution of population; Natural and mechanical movement of population (natality, mortality, balance natural movement of the population, model of demographic cycle, population migration); Population structure on the basis of biological, cultural and economic characteristics; Geography settlements as a scientific discipline; Settlement development and settlement systems; Geographical location of settlements; The structure of settlements by size, dynamics and morphology; Urban geography (definition of city, creation of city and functions cities); The hierarchy of settlements and Gravity; Urbanization (basic concepts, indicators, aspects and methods of research); Rural settlement systems (compact and scattered rural settlements and their geographical interpretation). Seminars Seminars during the semester are oriented to problem solving in order to practice, resp. demonstrate phenomena studied in different regional units of Slovakia, Europe or Worldwide.	
<b>Recommended literature:</b> BAŠOVSKÝ, O., MLÁDEK, J. 1989: Geografia obyvateľstva a sídel. Prírodovedecká fakulta UK, Bratislava, 221. CHALUPA, P., TARABOVÁ, Z. 1990: Geografie obyvateľstva, demografie, geografie sídel. MU, Brno. MATLOVIČ, R. 2001: Geografia relígií. Fakulta humanitných a prírodných vied Prešovskej univerzity v Prešove. Prešov, 375.	



MLÁDEK, J. 1992: Základy geografie obyvatel'stva. SPN Bratislava, 230.  
 MLÁDEK, J. a kol. 2006: Atlas obyvatel'stva Slovenska. UK Bratislava, 168.  
 MLÁDEK, J., KUSEDOVÁ, D., MARENČÁKOVÁ, J., PODOLÁK, P., VAŇO, B. 2006: Demogeografická analýza Slovenska. UK Bratislava, 222.  
 PAVLÍK, Z., RYCHTAŘÍKOVÁ, J., ŠUBRTOVÁ, A. 1986: Základy demografie. Academia Praha.  
 VOTRUBEC, C. 1980: Lidská sídla, jejich typy a rozmístnění ve světě. Academia Praha.  
 SHORT, J. R. 1994: Lidská sídla. Velká geografická encyklopedie světa. Nakladatelský dům OP Praha

**Course language:**

Slovak

**Course assessment**

Total number of assessed students: 772

A	B	C	D	E	FX
8.81	13.73	22.15	23.58	27.98	3.76

**Provides:** prof. RNDr. Peter Spišiak, CSc., RNDr. Janetta Nestorová-Dická, PhD.

**Date of last modification:** 22.02.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KGER/OJPV1/07		<b>Course name:</b> Specialised German Language - Natural Sciences 1			
<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.					
<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: 136					
A	B	C	D	E	FX
21.32	22.79	25.0	22.06	8.09	0.74
<b>Provides:</b> Mgr. Andreas Schiestl					
<b>Date of last modification:</b> 25.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ OLŠ/15		<b>Course name:</b> School Administration and Legislation			
<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., 5.					
<b>Course level:</b> I.					
<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: 168					
A	B	C	D	E	FX
35.71	30.36	22.02	8.33	2.98	0.6
<b>Provides:</b> PaedDr. Renáta Orosová, PhD.					
<b>Date of last modification:</b> 23.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> KOP/OPaPDV/14	<b>Course name:</b> Civil Law and Intellectual Property Rights
<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> 4	
<b>Recommended semester/trimester of the course:</b> 3., 5.	
<b>Course level:</b> I., N	
<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: 67	
abs	n
94.03	5.97
<b>Provides:</b> doc. JUDr. Renáta Bačárová, PhD., LL.M., prof. JUDr. Peter Vojčík, CSc.	
<b>Date of last modification:</b> 18.01.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> CJP/ PFAJ4/07	<b>Course name:</b> English Language of Natural Science
<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> 4.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Active participation in class and completed homework assignments. Students are allowed to miss 2 classes at the most. Continuous assessment: 2 credit tests (presumably in weeks 6 and 13) and academic presentation in English. In order to be admitted to the final exam, a student has to score at least 65 % as a sum of both credit tests. The exam test results represent 50% of the final grade for the course, continuous assessment results represent the other 50% of the final grade. The final grade for the course will be calculated as follows: A 93-100, B 86-92, C 79-85, D 72-78, E 65-71, FX 64 and less.	
<b>Learning outcomes:</b> Enhancement of students' language skills (speaking, writing, reading and listening comprehension) in English for specific purposes and development of students' language competence (familiarization with selected phonological, lexical and syntactic phenomena), improvement of students' pragmatic competence (familiarization with selected language functions) and improvement of presentation skills at B2 level (CEFR) with focus on terminology of English for natural science.	
<b>Brief outline of the course:</b> <b>ANGLICKÝ JAZYK PRE GEOGRAFOV:</b> Veda a výskum. Odbor geografia. Planéta Zem. Naša slnečná sústava. Zemetrasenia, Sopečná činnosť. Svetové oceány a ľadovce. Životné prostredie a geografia. Počasie a klíma. <b>ANGLICKÝ JAZYK PRE EKOLÓGOV:</b> Veda a výskum. Odbor ekológia. Životné prostredie. Znečistenie a dôsledky. Sopečná činnosť, zemetrasenia. Great Pacific Garbage Patch.	

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

**Recommended literature:**

study materials provided by the course instructor  
Royds-Irmak, D.E. Beginning Scientific English. Nelson, 1975.  
Velebná, B. English for Chemists. [ffweb.ff.upjs.sk/vyuka/](http://web.ff.upjs.sk/vyuka/)  
Redman, S.: English Vocabulary in Use, Pre-intermediate, Intermediate. Cambridge University Press, 2003.

Powel, M.: Dynamic Presentations. CUP, 2010.  
 Armer, T.: Cambridge English for Scientists. CUP, 2011.  
 Wharton J.: Academic Encounters. The Natural World. CUP, 2009.  
 Murphy, R.: English Grammar in Use. Cambridge University Press, 1994.  
 Redman, S.: English Vocabulary in Use, Pre-intermediate, Intermediate. Cambridge University Press, 2003.  
 P. Fitzgerald : English for ICT studies. Garnet Publishing, 2011.  
<https://worldservice/learningenglish>, <https://spectator.sme.sk>

**Course language:**

**Course assessment**

Total number of assessed students: 2443

A	B	C	D	E	FX
34.55	25.83	17.6	10.89	8.8	2.33

**Provides:** Mgr. Zuzana Naďová, Mgr. Lenka Klimčáková

**Date of last modification:** 06.02.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, 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. Zdenko Hochmuth, 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. Zdenko Hochmuth, 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. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PKŽ/15		<b>Course name:</b> Psychology of Everyday Life			
<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> I.					
<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: 116					
A	B	C	D	E	FX
43.1	14.66	30.17	8.62	2.59	0.86
<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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚFV/POF1a/99		<b>Course name:</b> Computational 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 / 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> 6.							
<b>Course level:</b> I.							
<b>Prerequisites:</b> ÚFV/NUM/10							
<b>Conditions for course completion:</b> Continuous evaluation is based on students' activity in the classroom and work on assignments. Examination and assignments submitted electronically with the attached computer code.							
<b>Learning outcomes:</b> To teach students to use computer as a tool of modeling of physical reality.							
<b>Brief outline of the course:</b> Introduction to dynamical systems. Numerical solution of ordinary differential equations (ODE) with initial value. Boundary value problems for ODE. Discrete schemes for partial differential equations (PDE). Numerical solution of PDE. Finite difference methods, consistency, convergence, stability. Elliptic and parabolic PDE. Introduction to Monte Carlo (MC) method and applications in statistical physics. MC simulations of lattice spin systems and stochastic processes.							
<b>Recommended literature:</b> 1. C. Pozrikidis: Num. Comp. in Science and Engineering, Oxford Univ. Press, 1998. 2. A.L. Garcia: Numerical Methods for Physics, Prentice-Hall, 1994. 3. D. P. Landau, K. Binder: A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge Univ. Press, 2000. 4. B. A. Berg: Introduction to Markov Chain Monte Carlo Simulations and Their Statistical Analysis, <a href="http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf">http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf</a> 5. W. Janke: Lectures on Ising model, <a href="http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html">http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html</a>							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 106							
A	B	C	D	E	FX	N	P
33.02	17.92	9.43	17.92	14.15	2.83	0.0	4.72
<b>Provides:</b> doc. RNDr. Milan Žukovič, PhD.							
<b>Date of last modification:</b> 23.02.2018							

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth,  
CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ POL1/18		<b>Course name:</b> Political geography and geopolitics			
<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> 5					
<b>Recommended semester/trimester of the course:</b> 4.					
<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: 285					
A	B	C	D	E	FX
43.16	31.58	16.14	6.67	2.11	0.35
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., RNDr. Stela Csachová, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PP/15		<b>Course name:</b> Positive Psychology			
<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., 6.					
<b>Course level:</b> I.					
<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: 165					
A	B	C	D	E	FX
97.58	1.21	0.61	0.0	0.61	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. Zdenko Hochmuth, CSc.					



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ PPFM/15		<b>Course name:</b> Computer-Based Physical Measurement			
<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.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> active participation at all labworks written laboratory records with data analysis					
<b>Learning outcomes:</b> Students is able to measure physical quantities and gains skills important for measuring and data processing with the help of computer. The result is deeper conceptual understanding of physical phenomena involved in the labworks that is connected mainly with the content of courses General Physics I,II,III.					
<b>Brief outline of the course:</b> The content of the course involves labworks in physics aimed at selected problems of General Physics I,II,III. Student learns about different methods of measurement of physical quantities, he gains skills concerning measurement and data processing with the help of computer. The set of labworks involves analysis of different phenomena followed by the data processing and written report.					
<b>Recommended literature:</b> 1. Halliday, Hajko, V., Daniel-Szabó, J.: Základy fyziky, Veda Bratislava 1983 2. Veis, Š., Maďar, J., Martišovits, V.: Všeobecná fyzika 1, Alfa, Bratislava, 1987 3. Hlavička, A. a kol.: Fyzika pre pedagogické fakulty, SPN Praha, 1971 4. Halliday, D., Resnick, R., Walker, J.: Fyzika, part1-4, VUT Brno, 2000					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 17					
A	B	C	D	E	FX
64.71	11.76	23.53	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD.					
<b>Date of last modification:</b> 01.03.2018					

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth,  
CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/PUDB/15		<b>Course name:</b> Drug Addiction Prevention in University Students			
<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., 5.					
<b>Course level:</b> I.					
<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: 256					
A	B	C	D	E	FX
77.34	20.31	2.34	0.0	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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ PVS/18		<b>Course name:</b> Population growth in Slovakia			
<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> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> The evaluation of student's performance is implemented through a combination of current, random control during the term and the examination part within a particular period of the semester. This type of continuous control includes at least 80% of students' active participation in teaching and successful solutions of given assignments. If a student does not follow and fulfill these two conditions, i. e. compulsory active learning part of the course, together with active participation and in addition will not solve assigned tasks successfully cannot register, assign for the examination (oral/written). If the student receives more than 51% in the written form may proceed to the oral form. If a student does not demonstrate particular knowledge during the oral examination student has to take both forms of the examination once again.					
<b>Learning outcomes:</b> The Student shall acquires deeper knowledge of the population of Slovakia in terms of time and 3-D.					
<b>Brief outline of the course:</b> Development of the population and its spatial differentiation, population Dynamics (natural, migration, the total movement); Reproduction of the population; Migration for work, Foreign and internal migration; The ageing of the population; The specificities of the Roma population in Slovakia; The educational structure of the population; Economic, social, according to the marital status of the population structure; Ethnic and religions structure of the population ; Slovakia in the EU in terms of population processes; The demographic future of Slovakia. Seminars Workshops during the semester are focused on filling the solution of tasks in order to practice or demonstrate the phenomena studied in the different regional units.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 119					
A	B	C	D	E	FX
64.71	5.04	10.92	7.56	8.4	3.36

<b>Provides:</b> prof. RNDr. Peter Spišiak, CSc., RNDr. Janetta Nestorová-Dická, PhD.
<b>Date of last modification:</b> 22.02.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/ Pg/15		<b>Course name:</b> Pedagogy			
<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., 5.					
<b>Course level:</b> I.					
<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: 406					
A	B	C	D	E	FX
20.94	18.97	26.11	19.46	13.55	0.99
<b>Provides:</b> Mgr. Katarína Petriková, PhD.					
<b>Date of last modification:</b> 23.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPPaPZ/Ps/15		<b>Course name:</b> Psychology			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <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., 3., 5.					
<b>Course level:</b> I.					
<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: 318					
A	B	C	D	E	FX
16.04	11.01	24.53	23.9	20.75	3.77
<b>Provides:</b> prof. PhDr. Oľga Orosová, CSc., PhDr. Anna Janovská, PhD., 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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ SBP1/13		<b>Course name:</b> Seminar for Bachelor Thesis I.			
<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> 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Verification of acquired basic methodologic and formal procedures of the final thesis creation by presentation (70% of rating) and written examination (30%). To obtain A grade, weighted average of the both parts of examination must reach at least 90%, To obtain B it is 80%, for C it is 70%, for D 60% and for E 50%. Credits shall not be granted to a student who obtain less than 50% from any of both parts of examination.					
<b>Learning outcomes:</b> Mastering basic theoretical, methodological and formal scientific procedures of bachelor thesis creation.					
<b>Brief outline of the course:</b> The content and form of selected parts of thesis writing (abstract, introduction, conclusion, etc.) Ethics and culture of writing diploma thesis, citations and references, types of sources (printed, electronic, etc.). Formal aspects of the thesis. Linguistic adjustment (terminology, stylistics, syntax, grammar, typography). Rules of presentation of the thesis. Presentation of current results and state of diploma thesis.					
<b>Recommended literature:</b> HOVORKA, D., KOMÁREK, K., CHRAPAN, J. 2011: Ako písať a komunikovať. Martin (Vydavateľstvo Osveta), 247 s. KATUŠČÁK, D. 2008: Ako písať záverečné a kvalifikačné práce. Nitra (Enigma), 162 s. ÚTVAR REKTORA UPJŠ (2011): Smernica č. 1/2011, Dostupné na internete: < <a href="http://www.upjs.sk/public/media/2438/smernica-1-2011.pdf">http://www.upjs.sk/public/media/2438/smernica-1-2011.pdf</a> >, 25 s.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 368					
A	B	C	D	E	FX
94.84	3.8	0.54	0.0	0.82	0.0
<b>Provides:</b> prof. Mgr. Jaroslav Hofierka, PhD., Mgr. Ladislav Novotný, PhD.					



<b>Date of last modification:</b> 22.02.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ SBP2/13		<b>Course name:</b> Seminar for Bachelor Thesis II.			
<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> 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Verification of acquired methodological and formal procedures of the creation of bachelor thesis by the presentation of current thesis creation by presentation of own bachelor thesis (100% of rating). To obtain A grade, the rating of student's presentation must reach at least 90%, To obtain B it is 80%, for C it is 70%, for D 60% and for E 50%. Credits shall not be granted to a student who obtain rating less than 50%.					
<b>Learning outcomes:</b> Acquired skills to apply theoretical, methodological and formal scientific procedures of diploma thesis creation.					
<b>Brief outline of the course:</b> The seminary is focused to the topics of individual bachelor thesis. Students present current state of their thesis, its content and its particular parts. Each bachelor thesis is discussed at scientific level.					
<b>Recommended literature:</b> HOVORKA, D., KOMÁREK, K., CHRAPAN, J. 2011: Ako písať a komunikovať. Martin (Vydavateľstvo Osveta), 247 s. KATUŠČÁK, D. 2008: Ako písať záverečné a kvalifikačné práce. Nitra (Enigma), 162 s. ÚTVAR REKTORA UPJŠ (2011): Smernica č. 1/2011, Dostupné na internete: < <a href="http://www.upjs.sk/public/media/2438/smernica-1-2011.pdf">http://www.upjs.sk/public/media/2438/smernica-1-2011.pdf</a> >, 25 s.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 334					
A	B	C	D	E	FX
71.56	20.36	6.59	0.6	0.3	0.6
<b>Provides:</b> prof. Mgr. Jaroslav Hofierka, PhD., Mgr. Ladislav Novotný, PhD.					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guarantee prof. RNDr. Peter Kollár, DrSc. Guaranteed doc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ SDFM1/15		<b>Course name:</b> Methods of Data Processing in Physics			
<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> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Five tasks in Matlab/Octave. Exam interview - 60%, tasks - 40%.					
<b>Learning outcomes:</b> Methods of data processing in physics.					
<b>Brief outline of the course:</b> 1. Numerical methods. 2. Regression analysis. 3. Computational physics.					
<b>Recommended literature:</b> Buchanan J. L., Turner P. R.: Numerical Methods and Analysis. McGraw-Hill, Inc., New York, 1992. Siegel A. F.: Statistics and Data Analysis. An Introduction. J. Wiley&Sons, NY, 1988.					
<b>Course language:</b> slovak, basics of english					
<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> doc. RNDr. Erik Čižmár, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPO/ SPKVV/15		<b>Course name:</b> Social and Political Context of 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> 4., 6.					
<b>Course level:</b> I.					
<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: 11					
A	B	C	D	E	FX
9.09	0.0	45.45	36.36	9.09	0.0
<b>Provides:</b> Dr.h.c. prof. PhDr. Marcela Gbúrová, CSc.					
<b>Date of last modification:</b> 23.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/STA1N/15		<b>Course name:</b> Statistical Physics			
<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> 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/KVM/08 or ÚFV/KVM/15					
<b>Conditions for course completion:</b> Written test - maximum 30 points. Oral exam . maximum 70 points					
<b>Learning outcomes:</b> To acquaint students with basic principles of statistical mechanics and to illustrate possibilities of its applications in selected cases.					
<b>Brief outline of the course:</b> Basic laws of thermodynamics. The phase space, statistical ensemble, distribution function, canonical invariance of the phase volume. Liouville theorem, the ergodic problem and Tolman hypothesis. Microcanonical, canonical and grandcanonical ensembles. The virial and equipartition theorem. Applications of statistical physics.					
<b>Recommended literature:</b> 1) L. Reichl, A modern Course in Statistical Mechanics, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim (2009). 2.) R.K. Pathria, Statistical Mechanics, Butterworth.Heinemann, Oxford (2001).					
<b>Course language:</b> Slovak, English					
<b>Course assessment</b> Total number of assessed students: 20					
A	B	C	D	E	FX
30.0	20.0	25.0	15.0	10.0	0.0
<b>Provides:</b> prof. RNDr. Michal Jaščur, CSc., RNDr. Jana Čisárová, PhD.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/SVG/04		<b>Course name:</b> Student Scientific Conference in Geography			
<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> 6.					
<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> After choosing a topic suggested by supervisors implying a geographical problem, the students will work on the topic, write a thesis and defense it before the committee.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 160					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., prof. RNDr. Peter Spišiak, CSc., RNDr. Dušan Barabas, CSc., RNDr. Alena Gessert, PhD., RNDr. Janetta Nestorová-Dická, PhD., Mgr. Marián Kulla, PhD., Ing. Katarína Bónová, PhD., RNDr. Stela Csachová, PhD.					
<b>Date of last modification:</b> 20.09.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ SVL1/03		<b>Course name:</b> Structure and Properties of Solids			
<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> 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> 50% maintained output, written test 50% final exam					
<b>Learning outcomes:</b> To explain basic problems of Solid State physics. The course is mainly oriented on fundamental type of lattices, symetry and crystal structure, X.ray diffractometry, Thermal properties, mechanical properties and conductivity of solids. The course allows to continue education in specialized topis of Condensed Matter like: Magnetic properties, Low temperature physics, Experimental methods of CM, Semiconductors atc.					
<b>Brief outline of the course:</b> Periodic array of atoms. Fundamental type of lattices. Index systems for crystal planes. Simple crystal structure. Symetry and crystal structure. Point and space groups. Crystal binding and elastic constants. Wave diffraction and the reciprocal lattice. X.ray diffractometry. Brag's law, Laue conditions, scatering of x-rays, Neutrons and neutron scattering, CW - diffractometer, Ewald's sphere, Diffraction on powder samples, Structure factor, Ocupation factor, Atomic displacement factor. Thermal properties. Phonon heat capacity, thermal conductivity. Free electron Fermi gas. Energy bands. Semiconductor crystals. Superconductivity.					
<b>Recommended literature:</b> 1. Ch. Kittel, Solid State Physics, Springer, 1985. 3. Fundamentals of Powder Diffraction and Structural Characterization of Materials, Vitalij K. Pecharsky & Peter Y. Zavalij , Kluwer Academic Publishers, 2003. 4. Structure Determination from Powder Diffraction Data, Edited by W.I.F. David, K. Shankland, L.B. McCusker, C. Bärlocher, Oxford University Press, 2006					
<b>Course language:</b> english					
<b>Course assessment</b> Total number of assessed students: 44					
A	B	C	D	E	FX
45.45	18.18	18.18	13.64	2.27	2.27

<b>Provides:</b> prof. RNDr. Pavol Sovák, CSc.
<b>Date of last modification:</b> 01.03.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/TEP1/03		<b>Course name:</b> Theory of the Electromagnetic Field			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/VFM1b/15 or ÚFV/VF1b/03					
<b>Conditions for course completion:</b> Two tests to deal with specific tasks theory of the electromagnetic field. Examination.					
<b>Learning outcomes:</b> To acquaint students with principles of a theory of the electromagnetic field.					
<b>Brief outline of the course:</b> Maxwell equations in vacuum. Scalar and vector potentials. Conservation laws. Electrostatic field. Static magnetic field. Maxwell equations in macroscopic media. Quasistatic electromagnetic field. Electromagnetic waves. Radiation of electromagnetic waves.					
<b>Recommended literature:</b> 1. Jackson J.D.: Classical Electrodynamics, John Wiley, New York, 1975. 2. Rao N.N.: Basic Electromagnetics with Applications, Prentice-Hall, New Jersey, 1972. 3. Greiner W.: Classical Electrodynamics, Springer-Verlag, New York, 1998.					
<b>Course language:</b> 1. Slovak, 2. English					
<b>Course assessment</b> Total number of assessed students: 279					
A	B	C	D	E	FX
27.6	7.89	16.49	23.3	16.49	8.24
<b>Provides:</b> prof. RNDr. Andrej Bobák, DrSc., RNDr. Tomáš Lučivjanský, PhD.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/TMEU/15		<b>Course name:</b> Theoretical Mechanics			
<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> I.					
<b>Prerequisites:</b> ÚFV/VF1a/12 or ÚFV/VFM1a/15					
<b>Conditions for course completion:</b> Two tests to deal with specific tasks mechanics. Final examination.					
<b>Learning outcomes:</b> To acquaint students with principles of the theoretical mechanics.					
<b>Brief outline of the course:</b> Mechanics of particle system with constraints. Principle of virtual work and d'Alembert's principle. Lagrange's function and Lagrange's equations of motion. Hamilton's principle, Hamilton's function and Hamilton's canonical equations of motion. Mechanics of rigid body. Kinematics and dynamics of rigid body.					
<b>Recommended literature:</b> 1. Meirovitch L.: Methods of Analytical dynamics, McGraw-Hill, New York, 1970. 2. Taylor T.T.: Mechanics: Classical and Quantum, Pergamon Press, Oxford, 1976. 3. Strelkov S.P.: Mechanics, Mir Publishers, Moscow, 1985. 4. Greiner W.: Classical Mechanics, Springer-Verlag, Berlin, 2010. 5. Goldstein H.: Classical Mechanics, Addison-Wesley, London, 1970. 6. Barger V., Olsson M.: Classical Mechanics: A Modern Perspective, McGraw-Hill, London, 1973.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 18					
A	B	C	D	E	FX
33.33	11.11	11.11	33.33	0.0	11.11
<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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/TMK/15	<b>Course name:</b> Generation of 3D landscape models
<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> 4.	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> During the semester, students will need to hand in the outputs of the practicals. The resulting assessment is based on the final practical skills verification and delivery of the outputs of practicals. From the practical skills verification, students must obtain at least 90 points to get the A mark, at least 80 points to get B, at least 70 points to get C, at least 60 points to get D, at least 50 points to get E. The credits shall not be granted to a student who does not hand in one or more outputs of the practicals or he/she will get less than 50 points out of 100.	
<b>Learning outcomes:</b> The main learning outcomes include theoretical and practical skills in collection and processing of 3D data and generation of 3D city models.	
<b>Brief outline of the course:</b> City GML concept, methods of collection of 3-D geospatial data, processing of 3D data and generation of virtual 3D city model, interoperability of 3D data and migration of 3D data from CAD to GIS environment, applications of 3D city models and modelling of 3D landscape phenomena, 3D cadaster.	
<b>Recommended literature:</b> ROBINSON, A. H. et al. 1995: Elements of Cartography. Wiley & Sons. 674 s. ArcGIS 10 Web Help. ArcGIS Resource Center. Environmental Research Institute. Dostupné na: <a href="http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html">http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html</a> LONGLEY, P. A., GOODCHILD, M. F., MAGUIRE, D. J., RHIND, D. W. 2001: Geographic Information Systems and Science. John Wiley & Sons. VOSSELMAN, G., DIJKMAN, D. (2001): 3D building model reconstruction from point clouds and ground plans. In International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, volume 34, part 3/W4, pages 37–43, Annapolis, MA, USA, 2001.	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 34	

A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Ján Kaňuk, PhD.					
<b>Date of last modification:</b> 20.09.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KPE/TVE/08		<b>Course name:</b> Theory of Education			
<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., 6.					
<b>Course level:</b> I.					
<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: 378					
A	B	C	D	E	FX
27.25	36.77	23.81	7.41	1.85	2.91
<b>Provides:</b> Mgr. Katarína Petriková, PhD.					
<b>Date of last modification:</b> 23.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, 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. Zdenko Hochmuth, 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. Zdenko Hochmuth, 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:</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> 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. Guarantee doc. RNDr. Zdenko Hochmuth, 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. Zdenko Hochmuth, CSc.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ UAS/13		<b>Course name:</b> Introduction to Astronomy			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <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> 3					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> 2 tests during term. Each test for 15 points. Minimal amounts of points for an exam is 20. Oral examination and test.					
<b>Learning outcomes:</b> Acquaint students with basic astronomy and astrophysic concepts, celestial coordinates, Solar system, formation and evolution of stars and galaxies					
<b>Brief outline of the course:</b> Subject of astronomy, celestial coordinates and their transformations, time and calendar, problem of 2 bodies, Astronomical telescopes, Solar system, radiation of stars and spectrum, properties of stars and their evolution, galaxies.					
<b>Recommended literature:</b> 1. Čeman, R., Pittich, E., 2002, Vesmír 1 - Slnečná sústava, MAPA Slovakia 2. Čeman, R., Pittich, E., 2003, Vesmír 2 - Hviezdy - Galaxie, MAPA Slovakia 3. Grygar, J., Horský, Z., Mayer, P., 1979, Vesmír, Mladá fronta 4. Kleczek, J., 2002, Velká encyklopedie vesmíru, Academia 5. Pittich, E., Kalmančok, D., 1981, Obloha na dlani, Obzor 6. Vanýsek, V.: 1980, Základy astronomie a astrofyziky, Academia					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 32					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. Mgr. Štefan Parimucha, PhD.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚGE/ UGIS/15	<b>Course name:</b> Introduction to Geographic Information Systems
<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> 2.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> During the semester, students will need to hand in the outputs of the practicals. The resulting assessment is based on the final practical skills verification and delivery of the outputs of practicals. From the practical skills verification, students must obtain at least 90 points to get the A mark, at least 80 points to get B, at least 70 points to get C, at least 60 points to get D, at least 50 points to get E. The credits shall not be granted to a student who does not hand in one or more outputs of the practicals or he/she will get less than 50 points out of 100.	
<b>Learning outcomes:</b> The main learning outcomes include understanding of GIS terminology, practical skills in basic geodata processing in GIS software. In particular, the skills involve data editing and creation of map layouts.	
<b>Brief outline of the course:</b> <ul style="list-style-type: none"> <li>- Basic GIS terminology (eg. geodata layer, geodata formats, structure of GIS, graphics map elements, attribute table, structure of relational databases)</li> <li>- Basic control elements of GIS software (add and configure a data layer and properties, zooming, adjusting color data layer, display and basic work with attribute tables)</li> <li>- Prepare and connect an external database with the data layer</li> <li>- Set the legend (selection of cartographic methods of spatial information)</li> <li>- Creating map layouts and advanced graphics tools for creating map layouts</li> </ul>	
<b>Recommended literature:</b> BOLTÍŽIAR M. 2008: Geografické informačné systémy pre geografov I. Univerzita Konštantína Filozofa v Nitre, Fakulta Prírodných vied. 120 s. BOLTÍŽIAR, M. VOJTEK M. 2009. Geografické informačné systémy pre geografov II. Univerzita Konštantína Filozofa v Nitre, Fakulta Prírodných vied. 140 s. MICHAEL D. KENNEDY. 2013: Introducing Geographic Information Systems with ArcGIS: A Workbook Approach to Learning GIS, 3rd Edition. Wiley. 672 p. LAW M, COLLINS A. 2013: Getting to Know ArcGIS for Desktop. Edition 3. Esri Press. 768 p.	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 806	

A	B	C	D	E	FX
11.54	12.53	26.67	24.69	22.08	2.48
<b>Provides:</b> doc. Mgr. Michal Gallay, PhD., doc. RNDr. Ján Kaňuk, PhD., Mgr. Ján Šášak					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/UGP/18		<b>Course name:</b> Introduction to Geography and Planetary Geography			
<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> I.					
<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: 370					
A	B	C	D	E	FX
37.84	21.08	19.46	14.59	6.76	0.27
<b>Provides:</b> prof. Mgr. Jaroslav Hofierka, PhD., prof. Ing. Vladimír Sedlák, PhD., Mgr. Štefan Kolečanský					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, 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/USPV/13	<b>Course name:</b> Introduction to Study of Sciences
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 12s / 3d <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.	
<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: 1356	
abs	n
88.86	11.14
<b>Provides:</b>	
<b>Date of last modification:</b> 19.02.2018	
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.	



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ UVF/05		<b>Course name:</b> Introduction to General Physics			
<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> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Active presentation during the lessons twice a year Solved assignments Positive results at two written tests					
<b>Learning outcomes:</b> Conceptual understanding of the key concepts of the topics of Mechanics and Molecular Physics gained with the help of problem solving, physical experiments and multimedial support that is inevitable precondition for the further study at University level. At the end of this course the student will be able to follow with the courses proceeding from the course General Physics I.					
<b>Brief outline of the course:</b> The subject is a supportive subject to the course General physics 1 - Mechanics and Molecular Physics. The content involves key concepts in mechanics and molecular physics with the help of school experiments, interactive multimedial teaching materials and physical tasks and problems. The aim is to help students to overcome difficulties connected with knowledge gained during the previous study towards the conceptual understanding of the University course content.					
<b>Recommended literature:</b> 1. Sutton, R.M., Demonstration Experiments in Physics, AAPT, 2003 2. Pizzo, J.: Interactive Physics demonstration, AAPT, 2001 3. Cunningham, J, Herr, N.: Hands on Physics Activities, Jossey-Bass A Wiley Imprint, 1994 4. Halliday D., Resnick R., Walker J.: Fyzika. Část 1- 5., Vysokoškolská učebnica fyziky, VUTIUM, Brno, 2000 5. Walker, J.: The Flying Circus of Physics with answers, John Wiley&Sons, 2005 6. Hajko, V., Daniel-Szabó, J. a kol. Fyzika v príkladoch, Alfa, 1983					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 249					
A	B	C	D	E	FX
36.95	18.47	23.29	14.86	6.02	0.4

<b>Provides:</b> doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD.
<b>Date of last modification:</b> 01.03.2018
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ UVF2/07		<b>Course name:</b> Introduction to General Physics 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.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Active presentations duringf the lessons twice a year Solved assignments Postive results at two written tests.					
<b>Learning outcomes:</b> Conceptual understanding of the key concepts of the topics of Electricity and Magnetism with the help of problem solving, physical experiments and multimedial support that is inevitable precondition for the further study at University level. At the end of the course the studnet will be able to follow with the courses, proceeding from the course General physics II.					
<b>Brief outline of the course:</b> The subject is a supportive subject to the course General Physics 2 - Electricity and Magnetism. The content involves key concepts of electricity and magntism with the help of school experiments, interactive multimedial teaching materials and physical tasks and problems. The aim is to help students to overcome difficulties connected with knowledge gained during the previous study towards the conceptual understanding of the University course content.					
<b>Recommended literature:</b> 1. Sutton, R.M., Demonstration Experiments in Physics, AAPT, 2003 2. Pizzo, J.: Interactive Physics demonstration, AAPT, 2001 3. Cunningham, J, Herr, N.: Hands on Physics Activities, Jossey-Bass A Wiley Imprint, 1994 4. Halliday D., Resnick R., Walker J.: Fyzika. Část 1- 5., Vysokoškolská učebnica fyziky, VUTIUM, Brno, 2000 5. Walker, J.: The Flying Circus of Physics with answers, John Wiley&Sons, 2005					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 206					
A	B	C	D	E	FX
40.78	19.42	21.84	8.74	9.22	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. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ VBFM1/15	<b>Course name:</b> General Biophysics 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> 3.	
<b>Course level:</b> I.	
<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. D.G. Nichols and S.J. Ferguson, Bioenergetics 3, Academic Press, Elsevier Science Ltd., 2002. 7. D. T. Haynie, Biological thermodynamics, Cambridge University Press, 2001.	

<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 6					
A	B	C	D	E	FX
16.67	33.33	50.0	0.0	0.0	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. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ VFM1a/15	<b>Course name:</b> General 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> 4 / 2 <b>Per study period:</b> 56 / 28 <b>Course method:</b> present	
<b>Number of credits:</b> 6	
<b>Recommended semester/trimester of the course:</b> 1.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Monitoring tests during the calculus lessons 1. in the 6th week 2. in the 12th week Final assessment is based on the results of : - oral examination assessment of the calculus lessons (written tests, overall performance during the lessons)	
<b>Learning outcomes:</b> Basic knowledge about the mechanics, molecular physics and thermodynamics.	
<b>Brief outline of the course:</b> Basic knowledge of the calculus, vector algebra. Standards and units. Kinematics. Dynamics. The principle of relativity in the classical mechanics. Gravitation. Mechanics of many-particle systems. The motion of rigid bodies. Deformation, elasticity. Mechanics of fluids and gases. Laws of ideal gases. Kinetic theory. The thermodynamic laws. Statistical character of the second law. Entropy. Molecular phenomena in liquids and solids. Phase transitions.	
<b>Recommended literature:</b> Hajko V., Daniel-Szabó J.: Základy fyziky, VEDA, Bratislava 1983. Veis Š., Maňar J., Martišovits V.: Všeobecná fyzika I., Mechanika a molekulová fyzika, ALFA Bratislava, 1987. Fuka J., Šíroká M.: Obecná fyzika I / skriptum /, PF Univ. Palackého, Olomouc 1983. Hlavička A., a kol.: Fyzika pre pedagogické fakulty, SPN, Praha 1971. Hajko V., a kol.: Fyzika v príkladoch, ALFA Bratislava 1983. Ilkovič D.: Fyzika, SVTL Bratislava, 1962. Slaviček V., Wagner J.: Fyzika pro chemiky, SNTL Praha 1971. Krempaský J.: Fyzika, ALFA Bratislava 1982.	
<b>Course language:</b> Slovak	
<b>Course assessment</b> Total number of assessed students: 188	

A	B	C	D	E	FX
28.19	17.55	19.15	12.23	19.68	3.19
<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. Zdenko Hochmuth, CSc.					



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/VFM1b/15		<b>Course name:</b> General 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> 4 / 2 <b>Per study period:</b> 56 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/VF1a/12 or ÚFV/VFM1a/15					
<b>Conditions for course completion:</b> Test. Oral examination.					
<b>Learning outcomes:</b> To obtain a general view on basic electric magnetic phenomena and ability to solve basic problems of this subject.					
<b>Brief outline of the course:</b> Electric field in the free space. Work of the forces in the electrostatic field. Electrostatic field and steady current. Current in electrolytes, semiconductors, gasses and vacuum. Thermoelectric effects. Magnetic field in the free space. The interaction of moving charges with the electric current. Quasi steady electric field. Electromagnetic induction. Energy of magnetic field. AC current and circuits with ac current. Multiphase AC current. Rotating magnetic field. Electric effects in the substances. Magnetic properties of the substances. Magnetic polarization. Diamagnetism and paramagnetism, Magnetic ordering. Ferromagnetism.					
<b>Recommended literature:</b> I. S. Grant, W.R. Phillips, Electromagnetism, John Wiley&Sons, Ltd, England, 1990					
<b>Course language:</b> english					
<b>Course assessment</b> Total number of assessed students: 24					
A	B	C	D	E	FX
33.33	8.33	29.17	4.17	4.17	20.83
<b>Provides:</b> prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Adriana Zelenáková, PhD., doc. RNDr. Erik Čižmár, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/VFM1c/15		<b>Course name:</b> General Physics III			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 4 / 2 <b>Per study period:</b> 56 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/VF1b/03 or ÚFV/VFM1b/15					
<b>Conditions for course completion:</b> Exam+ 2 succesfull test from seminars					
<b>Learning outcomes:</b> The objective is to acquaint the students with the basis of oscilations, waves and optics.					
<b>Brief outline of the course:</b> Undamped oscilations, Mathematical, Physical and Torsional pendulum, Damped oscilations, Fourier transformation, Forced oscilations. Waves, their generation, waves equation. Interference. Huyghens principle. Reflection, diffraction. Doppler effect. Waves speed in materials. Acoustics. Geometrical optics. Mirrors, lens. Fotometry. Light as electromagnetic wave. Dispersion, absorption, interference, diffraction, polarization. Photon's theory of light. Law of emision and absorption, Planck's law of radiation. Lasers.					
<b>Recommended literature:</b> 1. A. Hlavička et al., Fyzika pro pedagogické fakulty, SPN, 1971 2. R.P. Feynman et al., Feynmanove prednášky z Fyziky I,II,III, ALFA, 1985 3. D. Halliday et al.,Fyzika-Vysokoškolská učebnice obecné fyziky, VUTIUM, 2010 4. J. Fuka, B. Havelka, Optika a atómová fyzika, SPN,1961 5. A. Štrba, Všeobecná Fyzika 3 – Optika, ALFA, 1979					
<b>Course language:</b> slovak					
<b>Course assessment</b> Total number of assessed students: 57					
A	B	C	D	E	FX
36.84	19.3	26.32	12.28	5.26	0.0
<b>Provides:</b> prof. RNDr. Rastislav Varga, DrSc.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/VFM1d/15		<b>Course name:</b> General Physics IV			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 4 / 2 <b>Per study period:</b> 56 / 28 <b>Course method:</b> present					
<b>Number of credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/VF1c/10 or ÚFV/VF1c/12 or ÚFV/VFM1c/15					
<b>Conditions for course completion:</b> written tests exam					
<b>Learning outcomes:</b> Basic knowledge about the atomic structure and spectra and nuclei, and elementary particles. Basic experimental methods in nuclear physics and passage of nuclear radiation through media.					
<b>Brief outline of the course:</b> Wave character of particles. De Broglie waves. Experimental evidence for de Broglie waves. Structure and models of atoms. Atomic spectra. Magnetic properties of atoms. X-ray spectra. Basic characteristics of the atomic nuclei. Nuclear forces and models. Radioactivity. Applications of radioactivity. Nuclear reactions. Elementary particles, basic properties and classification. Types of interactions. Resonances. Cosmic rays. Passage of particles through matter. Detectors. Accelerators.					
<b>Recommended literature:</b> 1. Beiser A., Úvod do moderní fyziky, Praha, 1975. 2. Vanovič J.: Atómová fyzika, Bratislava, 1980. 3. Griffiths D. , Introduction to Elementary Particles, WILEY, 1987. 4. Úlehla I., Suk M., Trka Z.: Atómy, jadra, částice, Praha, 1990. 5. Síleš E., Martinská G.: Všeobecná fyzika IV, skriptá PF UPJŠ, 2. vydanie, Košice, 1992. 5. Hajko V. and team of authors, Physics in experiments, Bratislava, 1997. 6. Nosek D., Jádra a částice (Řešené příklady), Matfyzpress, MFF UK, Praha 2005, 7. Brandt S., The harvest of a century, Discoveries of modern physics in 100 episodes, Oxford, 2009.					
<b>Course language:</b> slovak and english					
<b>Course assessment</b> Total number of assessed students: 16					
A	B	C	D	E	FX
81.25	6.25	12.5	0.0	0.0	0.0

**Provides:** prof. RNDr. Stanislav Vokál, DrSc., doc. RNDr. Janka Vrláková, PhD., doc. RNDr. Adela Kravčáková, PhD.

**Date of last modification:** 22.02.2018

**Approved:** Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> KFaDF/VKFV/07		<b>Course name:</b> Selected Topics in Philosophy of Education (General Introduction)			
<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., 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> KFaDF/DF1/05					
<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> doc. PhDr. Pavol Tholt, PhD., mim. prof.					
<b>Date of last modification:</b> 23.08.2017					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ ZAE1/18		<b>Course name:</b> International Excursion 1			
<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> 10d <b>Course method:</b> present					
<b>Number of credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<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
20.0	0.0	40.0	20.0	20.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚFV/ ZFP1a/03	<b>Course name:</b> Physics Practical 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> 3	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> The active work during semester and hand in all reports. Vindication of reports.	
<b>Learning outcomes:</b> Developing proper laboratory habits, skills and verify their theoretical knowledge.	
<b>Brief outline of the course:</b> The goal of this laboratory exercises is to familiarize the students with measurement methods, with kinds and calculus of mistakes, with measured results processing, and with presentation of results. The students gain practical skills, and verify their theoretical knowledge of first semester introductory physics course. They develop proper laboratory habits. Laboratory assignment: <ol style="list-style-type: none"> <li>1. Density measurements of liquids and solids.</li> <li>2. Radius measurements of spherical cap. Measurements of surface using planimeter.</li> <li>3. Gravitational acceleration measurements using mathematical and physical pendulum.</li> <li>4. Moment of inertia measurement using physical and torsion pendulum.</li> <li>5. Measurements of Young's modulus.</li> <li>6. Measurement of coefficient of viscosity.</li> <li>7. Measurement of the speed of sound.</li> <li>8. Measurements of general gas constant and Boltzmann constant.</li> <li>9. Measurements of thermal expansivity of air.</li> <li>10. Measurements of thermal capacity of matter.</li> <li>11. Measurement of the surface tension.</li> </ol>	
<b>Recommended literature:</b> Degro, J., Ješková, Z., Onderová, L., Kireš, M.: Základné fyzikálne praktikum I. (Basic physical measurements I), Ed. PF UPJŠ Košice 2007. Standards STN ISO 31. Slovenský inštitút normalizácie v Bratislave (Slovak institute of technical standards in Bratislava), 1997.	

Ješková, Z.: Computer based experiments in thermodynamics using IP COACH,ed. PF UPJŠ in Košice, 2004.					
<b>Course language:</b> english					
<b>Course assessment</b> Total number of assessed students: 224					
A	B	C	D	E	FX
58.04	25.0	12.05	4.02	0.89	0.0
<b>Provides:</b> doc. RNDr. Adriana Zelenáková, PhD., doc. RNDr. Marián Kireš, PhD., doc. RNDr. Ján Füzér, PhD., doc. RNDr. Jozef Hanč, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ ZFP1b/03		<b>Course name:</b> Physics Practical 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> 3.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚFV/ZFP1a/03					
<b>Conditions for course completion:</b> Measuring of experimental tasks, their appreciation in the form of a written report, defending. Further evaluation is also a good theoretical preparation for the measurement of the task.					
<b>Learning outcomes:</b> The objectives of the laboratory are: a. To gain some physical insight into some of the concepts presented in the lectures. b. To gain some practice in data collection, analysis and interpretation of results. c. To gain experience and report writing presentation and results.					
<b>Brief outline of the course:</b> Students on practical exercises are working in pairs experimental tasks in the field of electrical, electromagnetic and magnetic properties of matters.					
<b>Recommended literature:</b> Tumanski S, Handbook of magnetic measurements, CRC press, 2011. Fiorillo F, Characterization and Measurement of Magnetic Materials, Elsevier, 2004.					
<b>Course language:</b> Slovak					
<b>Course assessment</b> Total number of assessed students: 190					
A	B	C	D	E	FX
63.16	21.58	13.16	1.58	0.0	0.53
<b>Provides:</b> doc. RNDr. Adriana Zeleňáková, PhD., doc. RNDr. Ján Füzér, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guarantee prof. RNDr. Peter Kollár, DrSc. Guaranteed doc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ ZFP1c/14		<b>Course name:</b> Physics Practical 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> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Measurements of experimental tasks, their evaluation in the form of a written report, which must be defended. As a part of evaluation there is also a good theoretical preparation for the measurement of the task.					
<b>Learning outcomes:</b> To gain some physical inside into some of the concepts presented in the lectures. b. To gain some practice in data collection, analysis and interpretation of resumance. c. To gain experience and report writing presentation and results.					
<b>Brief outline of the course:</b> Oscilations. Pendulum. Composition and decomposition of oscillations. Resonance. The speed of sound. Refractive index. Lense's focal length. Interference. Diffraction. Diffraction and reflection of waves. Polarization. The speed of light. Quantum optics.					
<b>Recommended literature:</b> Degro,J., Ješková, Z., Onderová,E., Kireš,M.: Základné fyzikálne praktikum I, PF UPJŠ Košice, 2006 P. Kollár a kol. Základné fyzikálne praktikum II, PF UPJŠ Košice, 2006 J. Brož Základy fyzikálných měření, SPN Praha, 1981.					
<b>Course language:</b> slovak or english					
<b>Course assessment</b> Total number of assessed students: 42					
A	B	C	D	E	FX
83.33	9.52	2.38	2.38	2.38	0.0
<b>Provides:</b> doc. RNDr. Marián Kireš, PhD., doc. RNDr. Ján Füzér, PhD.					
<b>Date of last modification:</b> 01.03.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ ZFP1d/14		<b>Course name:</b> Physics Practical IV			
<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> 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> good theoretical preparation for measurement of the tasks, written tests, measurements of the experimental tasks, written reports of measurements					
<b>Learning outcomes:</b> Practice in nuclear physics.					
<b>Brief outline of the course:</b> Introduction to measurements. Dosimetry measurements. Analysing power of coincidence circuit by random coincidences. Statistic distribution of measured quantities. Measurement time scale selection. Absorption of beta rays. Backward scattering of beta rays. Scintillation gamma spectrometer. Determination of <sup>60</sup> Co preparat activity using beta-gamma coincidences. Emulsion detector. Franck Hertz experiment. Beta - spectroscopy. Energy dependence of the gamma-absorption coefficient.					
<b>Recommended literature:</b> 1. J.Vrláková, S.Vokál: Základné fyzikálne praktikum III, skriptá PF UPJŠ, Košice, 2012, dostupné na <a href="http://www.upjs.sk/public/media/5596/Zakladne-fyzikalne-praktikum-III.pdf">http://www.upjs.sk/public/media/5596/Zakladne-fyzikalne-praktikum-III.pdf</a>					
<b>Course language:</b> slovak					
<b>Course assessment</b> Total number of assessed students: 50					
A	B	C	D	E	FX
86.0	10.0	2.0	2.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Janka Vrláková, PhD., doc. RNDr. Adela Kravčáková, PhD., RNDr. Filoména Sopková					
<b>Date of last modification:</b> 22.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, CSc.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ ZMF/17		<b>Course name:</b> Introduction to Mathematics for Physicists			
<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> 3					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> I.					
<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: 227					
A	B	C	D	E	FX
41.41	18.94	18.5	10.57	10.57	0.0
<b>Provides:</b> RNDr. Tomáš Lučivjanský, PhD., doc. RNDr. Jozef Hanč, PhD.					
<b>Date of last modification:</b> 23.02.2018					
<b>Approved:</b> Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteedoc. RNDr. Zdenko Hochmuth, 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. Zdenko Hochmuth,  
CSc.