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## 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 ECTS 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> Combined method of teaching (classroom/distance) Active classroom participation, assignments handed in on time, 2 absences tolerated 1 test (10th week), no retake. (in classroom, in case of distance learning due to worsened epidemiological situation – online) Presentation on chosen topic (in case of distance learning - online thorough MS Teams) Final evaluation- average assessment of test (40%), essay (30%) and presentation (30%). Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less					
<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>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 379					
A	B	C	D	E	FX
33.77	22.16	15.3	10.03	6.6	12.14
<b>Provides:</b> Mgr. Viktória Mária Slovenská					
<b>Date of last modification:</b> 17.09.2020					

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ ANCHU/03		<b>Course name:</b> Analytical Chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚCHV/VCHU/14 and leboÚCHV/VCHU/15 and leboÚCHV/VCHU/10 and leboÚCHV/VACH/10					
<b>Conditions for course completion:</b> 3x test of analytical calculations. Examination					
<b>Learning outcomes:</b> Survey of basic principles and tasks of analytical chemistry and applications of analytical methods in research and practice.					
<b>Brief outline of the course:</b> Subject and role of analytical chemistry. General principles and procedures - sampling, sample pre-treatment. Preparation of solutions. Evaluation of the results. Classification of analytical reactions. Qualitative analysis of cations and anions. Basic principles of organic analysis. Methods of quantitative analysis. General principles of gravimetry. Volumetric analysis. Instrumental methods of analytical chemistry (basic principles, instrumentation and applications) - electroanalytical, optical and separation methods.					
<b>Recommended literature:</b> Skoog D.A.: Principles of Instrumental Analysis. Saunders Col. Publishing, New York 1985. D.Harvey: Modern Analytical Chemistry. McGraw Hill, Boston, 2000.					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 702					
A	B	C	D	E	FX
17.38	19.37	24.93	24.64	9.69	3.99
<b>Provides:</b> doc. RNDr. Taťána Gondová, CSc.					
<b>Date of last modification:</b> 03.05.2015					

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ FZ1/10		<b>Course name:</b> Animal Physiology			
<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 / 3 <b>Per study period:</b> 42 / 42 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 7					
<b>Recommended semester/trimester of the course:</b> 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚBEV/HIS1/15 and leboÚBEV/HISE1/15					
<b>Conditions for course completion:</b> Written testing from practicals and oral examination					
<b>Learning outcomes:</b> To provide students with basic knowledge about physiological processes in organisms of animals and man.					
<b>Brief outline of the course:</b> The physiology of blood and hemopoietic organs. Physiology of respiration. Heart and circulatory physiology. Physiology of the gastrointestinal tract. The functions of liver. Energetic metabolism and physiology of nutrition. Water and mineral household of the organism. Physiology of the endocrine secretion. Physiology of reproduction. Physiology of excretion. General neurophysiology. Functions of neurons and neuronal networks. Sensory and motoric functions of CNS. Associative functions of CNS. Functions of the vegetative nervous system. Physiology of muscle contraction and active motion. Work physiology. Sensory physiology					
<b>Recommended literature:</b> Ganong, W. F.: Review of medical physiology. Prentice-Hall, Appleton & Langer, 1993 Varder, A. J., Sherman, J. H., Luciano, D. S.: The mechanisms of body functions, McGraw-Hill, 1990 Schmidt, R. F., Thews, G.: Human Physiology, Springer-Verlag, 1989 R.W.Hill, R.Wyse, M.Anderson : Animal Physiology, Sinauer Assoc., 2008					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1332					
A	B	C	D	E	FX
7.88	15.54	21.7	24.62	24.1	6.16

**Provides:** doc. RNDr. Monika Kassayová, CSc., prof. RNDr. Beňadik Šmajda, CSc., doc. RNDr. Bianka Bojková, PhD., RNDr. Vlasta Demečková, PhD., RNDr. Terézia Kisková, PhD., RNDr. Natália Pipová, PhD.

**Date of last modification:** 03.05.2015

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚBEV/ SBPa/15	<b>Course name:</b> Bachelor Thesis Seminar
<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 ECTS credits:</b> 4	
<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>Notes:</b>	
<b>Course assessment</b> Total number of assessed students: 139	
abs	n
99.28	0.72
<b>Provides:</b>	
<b>Date of last modification:</b>	
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚBEV/ SBPb/15	<b>Course name:</b> Bachelor Thesis Seminar
<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 ECTS credits:</b> 4	
<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>Notes:</b>	
<b>Course assessment</b> Total number of assessed students: 118	
abs	n
93.22	6.78
<b>Provides:</b>	
<b>Date of last modification:</b>	
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ 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 ECTS credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 5., 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>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 217					
A	B	C	D	E	FX
51.61	25.81	17.51	3.69	1.38	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 02.12.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚMV/ SMP/10		<b>Course name:</b> Basic statistics for sciences			
<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 ECTS 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> Given on the basis of partial examination and written exam.					
<b>Learning outcomes:</b> Understanding basics of descriptive statistics used in sciences.					
<b>Brief outline of the course:</b> <ul style="list-style-type: none"> <li>• Data types. Frequencies.</li> <li>• Measures of location and variability. Quantiles.</li> <li>• Basic probability distributions.</li> <li>• Point and interval estimators.</li> <li>• Testing of basic statistical hypotheses. Power of tests.</li> <li>• Measuring the strength of a dependence.</li> </ul>					
<b>Recommended literature:</b> <ul style="list-style-type: none"> <li>• Wonnacott, Wonnacott: Introductory Statistics, Wiley 1977</li> <li>• Statsoft's <a href="http://www.statsoft.com/Textbook">Electronic Statistics Textbook</a>, 2014</li> </ul>					
<b>Course language:</b> Slovak					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 144					
A	B	C	D	E	FX
7.64	9.72	13.19	19.44	35.42	14.58
<b>Provides:</b> prof. RNDr. Ivan Žežula, CSc.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ MIN1/14		<b>Course name:</b> Basis of Mineralogy			
<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 ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚCHV/VCH/10 and leboÚCHV/VCHU/10 and leboÚCHV/ZAC2/10 and leboÚCHV/VACH/10 and leboÚCHV/CHG/09 and leboÚCHV/ZCF/03 and leboÚCHV/VCHU/15					
<b>Conditions for course completion:</b> Verification of theoretical knowledge and recognizing minerals. Semester project, practical test from recognizing of minerals, optional oral examination.					
<b>Learning outcomes:</b> To recognize the beauty of nature and to obtain basic knowledge from mineralogy. To familiarize students with properties of usual minerals and to recognize these minerals.					
<b>Brief outline of the course:</b> Basic terms and definitions, origin of minerals in nature. Basis of morphological and structural crystallography: characteristic properties of crystals, crystallographic laws, crystal structure, unit cells and their parameters, crystallographic systems with examples of minerals. Crystallochemistry: types of bonds and structures and their effect on the properties of minerals. Physical properties of minerals and their utilize in minerals classification. Basis of genetic and systematic mineralogy. Structure of silicates.					
<b>Recommended literature:</b> M. Košuth: Mineralógia. Elfa, s.r.o. Košice, 2001 V. Radzo: Mineralógia, Alfa Bratislava, 1987.					
<b>Course language:</b> Slovak					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 85					
A	B	C	D	E	FX
88.24	8.24	1.18	1.18	0.0	1.18
<b>Provides:</b> doc. RNDr. Ivan Potočný, PhD.					
<b>Date of last modification:</b> 27.03.2020					

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ BCHU/03	<b>Course name:</b> Biochemistry
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week: 3 Per study period: 42</b> <b>Course method:</b> present	
<b>Number of ECTS credits:</b> 5	
<b>Recommended semester/trimester of the course:</b> 5.	
<b>Course level:</b> I.	
<b>Prerequisites:</b> ÚCHV/VCHU/10 and leboÚCHV/VCHU/15 and leboÚCHV/VACH/10 and leboÚCHV/VCHU/14	
<b>Conditions for course completion:</b> test + oral examination	
<b>Learning outcomes:</b> The aim of biochemistry teaching is to acquire knowledge in the field of living organisms on the basis of their molecular structure and metabolism.	
<b>Brief outline of the course:</b> 1. Protein Structure and Function, Exploring proteins 2. DNA and RNA and the Flow of Genetic Information, Exploring genes 3. Enzymes: Basic Concepts and Kinetics, Catalytic Strategies and Regulatory Strategies 4. Carbohydrates (Monosaccharides, Disaccharides, Polysaccharides – Functions and Properties) 5. Lipids and Cells Membranes, Membrane Channels and Pumps 6. Metabolis: Basic Concepts and Design, Signal-Transduction Pathways 7. Glycolysis and Gluconeogenesis, Glycogen Metabolism 8. The Citric Acid Cycle and Glyoxylate Cycle 9. Oxidative Phosphorylation, The Light Reactions of Photosynthesis 10. The Calvin Cycle and the Pentose Phosphate Pathway 11. Fatty Acids Metabolism, Urea Cycle 12. DNA Replication, Transcription (RNA Synthesis) 13. Protein Synthesis & Degradation, the Integration of Metabolism	
<b>Recommended literature:</b> Škárka: Biochémia. Alfa, 1992 Voet a Voetová: Biochemie. Victoria Publishing, Praha, 1994 Stryer, L.: Biochemistry, W.H. Freeman and Company, New York, 1988	
<b>Course language:</b>	
<b>Notes:</b>	

<b>Course assessment</b>					
Total number of assessed students: 1221					
A	B	C	D	E	FX
19.66	16.87	20.88	20.88	19.08	2.62
<b>Provides:</b> doc. RNDr. Erik Sedlák, DrSc., RNDr. Nataša Tomášková, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ PBCHU/03		<b>Course name:</b> Biochemistry Practical			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 4 <b>Per study period:</b> 56 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚCHV/BCHU/03					
<b>Conditions for course completion:</b> Protocols + 75 % continuous evaluation.					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b> The most important biochemical laboratory methods. The qualitative tests for amino acids and proteins. Time-dependent course of enzyme-catalyzed reaction: determination of enzymatic activity, determination of the first order rate constant, calculations of math models (examples), effect of a substrate concentration on initial rate of reaction, determination of $K_m$ and $V_{max}$ for urease. Isolation and detection of nucleic acids.					
<b>Recommended literature:</b> <a href="http://kosice.upjs.sk/~kbch/">http://kosice.upjs.sk/~kbch/</a>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 287					
A	B	C	D	E	FX
57.49	24.04	13.24	2.44	2.09	0.7
<b>Provides:</b> doc. RNDr. Mária Kožurková, CSc., RNDr. Nataša Tomášková, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD., RNDr. Eva Konkoľová, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ BAC1/04		<b>Course name:</b> Bioinorganic Chemistry 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 ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 5.					
<b>Course level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Test or seminar works examination					
<b>Learning outcomes:</b> The basic knowledges about biometal interactions with biomolecules, biomaterials, biominerals, biocatalysis, metals in biology and medicine, metal-based drugs, toxic metals for biosystems and metals in the environment.					
<b>Brief outline of the course:</b> Metalic and non-metalic elements and their roles in biological systems (biometals, bulk biological elements, essential trace elements). Biocoordination compounds, bioligands. Biocatalyzers. Oxygen carriers and oxygen transport proteins. Photochemical process. Catalysis and regulation processes. Calcium biominerals and biomineralization. Toxic metals. Application of knowledge of bioinorganic chemistry in pharmacy, chemotherapy (e.g. platinum complexes in cancer therapy) radiodiagnostics, mineral biotechnology, ecology and in other branches of life.					
<b>Recommended literature:</b> 1. Shriver D. F., Atkins P. W., Overton T. L., Rourke J.P., Weller M.T., Amstrong F.A.: Shiver & Atkins. Inorganic Chemistry. Oxford University Press, Oxford 2006. 2. Kaim W., Schwederski B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life. Wiley, Chichester 1998. 3. Wilkins P. C., Wilkins R. G.: Inorganic Chemistry in Biology. OCP, Oxford 1997.					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 304					
A	B	C	D	E	FX
41.12	28.29	18.75	5.92	5.59	0.33
<b>Provides:</b> doc. RNDr. Zuzana Vargová, Ph.D.					

**Date of last modification:** 03.05.2015

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ BO1/03		<b>Course name:</b> Botany I			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 5					
<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> Introduction to biology of lower plants.					
<b>Brief outline of the course:</b> Morphology, cytology, ecology, evolution and taxonomy of all main groups of lower plants. Cyanobacteria and algae (Cyanophyta, Prochlorophyta, Glaucophyta, Rhodophyta, Heterocontophyta, Haptophyta, Cryptophyta, Dinophyta, Euglenophyta, Chlorarachniophyta, Chlorophyta). Slime moulds (Plasmodiophoromycota, Dictyosteliomycota, Acrasiomycota, Labyrinthulomycota). Fungi (Oomycota, Hyphochytriomycota, Chytridiomycota, Zygomycota, Ascomycota, Basidiomycota). Lichens. Bryophytes. Literature: Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd.					
<b>Recommended literature:</b> Bačkor, M.: Základy systému nižších rastlín I. (sinice, riasy a slizovky). UPJŠ, Košice 2002; Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd. Van den Hoek, C. a kol. 1995: Algae, an introduction to phycology, Záhorovská E. a kol.: Systém a evolúcia nižších rastlín. UK Bratislava 1998					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1760					
A	B	C	D	E	FX
13.92	19.49	25.4	20.06	18.64	2.5
<b>Provides:</b> prof. RNDr. Martin Bačkor, DrSc., RNDr. Michal Goga, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚBEV/ BOT1/03	<b>Course name:</b> Botany II
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present	
<b>Number of ECTS credits:</b> 5	
<b>Recommended semester/trimester of the course:</b> 4., 6.	
<b>Course level:</b> I.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Practical and theoretical exam.	
<b>Learning outcomes:</b> To obtain of survey in knowledge and methods in systematics of tracheophytes.	
<b>Brief outline of the course:</b> History and present time of plant systematics. Approaches to plant classification. Principles of cladistics and molecular taxonomy. Tracheophytes, clades of lycophytes, ferns and allies. Seed plants. Gymnosperms and their evolution: cycads, ginkgos, conifers, gnetophytes. Angiosperms. Evolution and general description. Basal clades and Magnoliid clade. Monocots. "Basal tricolpates" and Caryophyllid clade. Rosid and asterid clades of tricolpates. Practices are devoted to study of the most important families of tracheophytes. Fossil evidence of ferns and allies from Palaeozoic age. Tropical a subtropical flora. Ferns. Practical study of conifers. Selected families of angiosperms. (<i>Magnoliaceae, Araceae, Liliaceae, Amaryllidaceae, Cyperaceae, Poaceae, Ranunculaceae, Papaveraceae, Caryophyllaceae, Euphorbiaceae, Violaceae, Fabaceae, Rosaceae, Betulaceae, Brassicaceae, Boraginaceae, Plantaginaceae, Lamiaceae, Apiaceae, Asteraceae</i>). Study of other seed plants, plant identification according to key.	
<b>Recommended literature:</b> Mártonfi P.: Systematika cievnatých rastlín, 2. vydanie. - ES UPJŠ, Košice, 2006. Mártonfi P.: Systematika cievnatých rastlín. - ES UPJŠ, Košice, 2003. Judd W. S., Campbell Ch. S., Kellogg E. A. & Stevens P. F., Donoghue M. J.: Plant Systematics. A phylogenetic Approach, 2nd ed. - Sinauer Associates, Sunderland, 2002. Dostál J., Červenka M.: Veľký kľúč na určovanie rastlín I. a II. - SPN, Bratislava, 1991 a 1992.	
<b>Course language:</b>	
<b>Notes:</b>	

<b>Course assessment</b>					
Total number of assessed students: 1510					
A	B	C	D	E	FX
11.13	12.72	17.75	19.8	23.97	14.64
<b>Provides:</b> prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčík, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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 ECTS 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> 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 final evaluation of the exercises is determined by the instructor of the subject based on the completion of tasks in the exercises during the semester. 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 and who achieves a rating of at least minimum 16 % in evaluation in 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 E, i.e. he achieves the rating of at least 51 %. Credits will not be awarded to a student who does not meet the requirements of the exercise and the exam is rated FX. Rating scale: A (100-91%), B (81-90%), C (71-80%), D (61-70%), E (51-60%).	
<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. The student masters the design, use and evaluation of the properties of cartographic representations in various geoinformatics applications.	
<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.  
 LONGLEY, P.A., M. GOODCHILD, D. J. MAGUIRE, D. W. RHIND, 2010. Geographic Information Systems and Science. 3rd ed. Hoboken: Wiley & 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 & 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.

**Course language:**

Slovak

**Notes:**

withot notes

**Course assessment**

Total number of assessed students: 421

A	B	C	D	E	FX
14.73	21.62	21.14	19.48	18.29	4.75

**Provides:** prof. Ing. Vladimír Sedlák, PhD., Mgr. Ján Šašak, Mgr. Katarína Onáčillová, doc. RNDr. Ján Kaňuk, PhD.

**Date of last modification:** 28.09.2020

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ CHV1/99		<b>Course name:</b> Chemical calculations			
<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 ECTS 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> Short written tests. Written test.					
<b>Learning outcomes:</b> To teach students how to calculate material balances in the systems with or without chemical processes and how to calculate examples concerning the chemical equilibrium.					
<b>Brief outline of the course:</b> Expression of the clear matter amount and the system composition. Stoichiometric formula. Material balances for preparation, dissolving and mixing of solutions, and for separating of mixtures. Material balances for combined processes. Chemical equations and material balances in the systems with chemical processes. Acid-Base equilibrium and the pH calculations. The solubility product and solubility.					
<b>Recommended literature:</b> Potočňák I.: Chemické výpočty vo všeobecnej a anorganickej chémii (skriptum), PF UPJŠ, Košice, 2006.					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1437					
A	B	C	D	E	FX
22.55	19.42	24.15	20.18	12.94	0.77
<b>Provides:</b> RNDr. Martin Vavra, PhD., RNDr. Miroslav Almáši, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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: 2 Per study period: 28</b> <b>Course method:</b> combined, present	
<b>Number of ECTS 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. Online teaching (MS Teams), in case of an improved epidemiological situation = on-site teaching. 2 credit tests (presumably in weeks 6/7 and 12/13) and a short oral presentation in English. The tests will be taken online (MS Teams) during online teaching and in class in case of on-site classes. The presentation will be sent to the course instructor as a video recording. Final evaluation consists of the scores obtained for the 2 tests (70%) and the presentation (30%). Final grade will be calculated as follows: A 93-100 %, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64 % and less.	
<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	

<p>Životné prostredie a ekológia  Výnimky zo slovosledu  Frázové slovesá a ich použitie  Charakteristiky neformálneho diškurzu</p>					
<p><b>Recommended literature:</b>  www.bbclearningenglish.com  McCarthy M., O'Dell F.: English Vocabulary in Use, Upper-Intermediate. CUP, 1994.  Misztal M.: Thematic Vocabulary. SPN, 1998.  Fictumova J., Ceccarelli J., Long T.: Angličtina, konverzace pro pokročilé. Barrister and Principal, 2008.  Peters S., Gráf T.: Time to practise. Polyglot, 2007.  Jones L.: Communicative Grammar Practice. CUP, 1985.  Alexander L.G.: Longman English Grammar. Longman, 1988.</p>					
<p><b>Course language:</b>  English language, B2 level according to CEFR</p>					
<p><b>Notes:</b></p>					
<p><b>Course assessment</b>  Total number of assessed students: 241</p>					
A	B	C	D	E	FX
38.59	22.41	19.5	9.54	6.64	3.32
<p><b>Provides:</b> Mgr. Barbara Mitriková</p>					
<p><b>Date of last modification:</b> 11.02.2021</p>					
<p><b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.</p>					

## 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 ECTS 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> Vince M.: Macmillan Grammar in Context, Macmillan, 2008 McCarthy, O'Dell: English Vocabulary in Use, CUP, 1994 C. Oxengen, C. Latham-Koenig: New English File Advanced, Oxford 2010 Misztal M.: Thematic Vocabulary, Fragment, 1998 <a href="http://www.bbclearningenglish.com">www.bbclearningenglish.com</a> <a href="http://ted.com/talks">ted.com/talks</a>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 406					
A	B	C	D	E	FX
39.66	18.97	16.75	8.62	5.91	10.1
<b>Provides:</b> Mgr. Lenka Klimčáková					
<b>Date of last modification:</b> 14.09.2019					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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 ECTS 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>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 54					
A	B	C	D	E	FX
59.26	11.11	9.26	3.7	9.26	7.41
<b>Provides:</b> Mgr. Blanka Jenčíková					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ PMZ/10		<b>Course name:</b> Comparative Animal Morphology			
<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 ECTS credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Lectures and practical exercises, original drawing of some parts of animal body or its derivatives, examination.					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b> Kardong, K. V., 2002: Vertebrates. Comparative anatomy, function, evolution. 3rd ed., Mc-Graw-Hill, New York. Pough, F. H., Janis, Ch. M., Heiser, J. B., 2008: Vertebrate Life. Prentice Hall, Inc., 752 pp. 8th edition. Ruppert, E. E., Fox, R. S., & Barnes, R. D., 2004: Invertebrate zoology: a functional evolutionary approach. Belmont, CA: Thomas-Brooks/Cole.					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1969					
A	B	C	D	E	FX
17.37	18.84	24.78	21.79	12.29	4.93
<b>Provides:</b> RNDr. Andrej Mock, PhD., RNDr. Andrea Parimuchová, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ OPR/12		<b>Course name:</b> Conservation Biology			
<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 ECTS credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Examination.					
<b>Learning outcomes:</b> The main goal of the subject is to introduce term biodiversity, principal threats and conservation of species, populations, communities and ecosystems.					
<b>Brief outline of the course:</b> Fundamental and origin of conservation biology. Different levels of biodiversity, biodiversity hotspots on Earth. Economic value of biodiversity as the principal argument of nature conservation. Factors leading to biodiversity threats. Extinctions and problems of small populations. Conservation of populations and species, conservation programs and strategies. Classification and management of protected areas, conservation outside the protected areas. Sustainable development, education to conservation of nature.					
<b>Recommended literature:</b> Primack R.B., 2010: Essentials of conservation biology. Sinauer Associates, 1-603					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 694					
A	B	C	D	E	FX
74.78	14.55	7.2	2.31	0.43	0.72
<b>Provides:</b> prof. RNDr. Ľubomír Kováč, CSc.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ CYT1/15		<b>Course name:</b> Cytology			
<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 ECTS 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> Practicals graduation (without absence); Two written tests graduation (min. 70 % fruitfulness of each); Oral examination					
<b>Learning outcomes:</b> To provide the students with knowledge of basic principles of cell microscopic and submicroscopic structure and function.					
<b>Brief outline of the course:</b> Levels of living system organization. Characteristics and comparison of prokaryotic and eukaryotic plant and animal cells. Microscopic, submicroscopic and molecular structure and function of individual cell components. Nucleus and cell division.					
<b>Recommended literature:</b> Alberts, B.: Molecular Biology of the Cell. Garland Science, 2014					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 752					
A	B	C	D	E	FX
11.44	19.95	32.71	20.08	15.16	0.66
<b>Provides:</b> RNDr. Rastislav Jendželovský, PhD., RNDr. Zuzana Jendželovská, PhD.					
<b>Date of last modification:</b> 29.01.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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 ECTS 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> Distant form of study (Online through MS teams) - based on the syllabus Active participation in class and completed homework assignments. Students are allowed to miss 2 classes at the most (in case of online form - not attending online class/ assignments not handed in) Continuous assessment: 2 credit tests taken thorough MS Teams online(presumably in weeks 6 and 13) and academic presentation in English given through MS Teams online. In order to be admitted to the final exam, a student has to score at least 65 % as a sum of both credit tests. The exam test results represent 50% of the final grade for the course, continuous assessment results represent the other 50% of the final grade. The final grade for the course will be calculated as follows: A 93-100, B 86-92, C 79-85, D 72-78, E 65-71, FX 64 and less.	
<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> 1. Introduction to studying language 2. Selected aspects of scientific language 3. Talking about academic study 4. Discussing science 5. Defining scientific terminology and concepts 6. Expressing cause and effect 7. Describing structures 8. Explaining processes 9. Comparing objects, structures and concepts 10. Talking about problem and solution 11. Referencing authors	

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

**Recommended literature:**

study materials provided by the course instructor

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

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

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

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

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

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

[www.isllibrary.com](http://www.isllibrary.com)

**Course language:**

**Notes:**

**Course assessment**

Total number of assessed students: 2605

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

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

**Date of last modification:** 14.02.2021

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚBEV/ TCZ/03	<b>Course name:</b> Fieldwork from zoology
<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> 5d <b>Course method:</b> present	
<b>Number of ECTS 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>	
<b>Learning outcomes:</b> Practical observation of morphology of vertebrates.	
<b>Brief outline of the course:</b> Systematic and phylogenetic relationships of vertebrate. Review of important groups of fishes, amphibians, reptiles, birds and mammals - observation, and laboratory work.	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Notes:</b>	
<b>Course assessment</b> Total number of assessed students: 868	
abs	n
99.31	0.69
<b>Provides:</b> RNDr. Peter Luptáčík, PhD., doc. RNDr. Ľubomír Panigaj, CSc., RNDr. Andrej Mock, PhD.	
<b>Date of last modification:</b> 03.05.2015	
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚBEV/ TCB1/03	<b>Course name:</b> Fieldworks from Botany
<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> 5d <b>Course method:</b> present	
<b>Number of ECTS 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> Study of methods for identification and determination of common central-europaeen plants.	
<b>Brief outline of the course:</b> Plant identification in different habitats. Plant determination. Floristic records.	
<b>Recommended literature:</b> Dostál J., Červenka M.: Veľký kľúč na určovanie rastlín I. a II. - Veda, Bratislava 1991 a 1992. Kubát K. (ed.): Klíč ke květeně České republiky. - Academia, Praha, 2002. Marhold K. a Hindák F. (eds.): Zoznam nižších a vyšších rastlín Slovenska. Checklist of non-vascular and vascular plants of Slovakia. - Veda, Bratislava 1998. Krejča J. (ilustr.): Velká kniha rostlín. - Bratislava (various editions).	
<b>Course language:</b>	
<b>Notes:</b>	
<b>Course assessment</b> Total number of assessed students: 1193	
abs	n
99.92	0.08
<b>Provides:</b> prof. RNDr. Pavol Mártonfi, PhD., prof. RNDr. Martin Bačkor, DrSc., Mgr. Vladislav Kolarčík, PhD.	
<b>Date of last modification:</b> 03.05.2015	
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.	

## 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 ECTS credits:</b> 6					
<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> 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>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1075					
A	B	C	D	E	FX
7.07	16.0	32.0	27.81	11.26	5.86
<b>Provides:</b> doc. RNDr. Zdenko Hochmuth, CSc., doc. Ing. Katarína Bónová, PhD., Ing. Ján Bóna					
<b>Date of last modification:</b> 28.08.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ VACH/10		<b>Course name:</b> General and Inorganic Chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of ECTS 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>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 367					
A	B	C	D	E	FX
20.16	25.61	28.61	18.8	5.99	0.82
<b>Provides:</b> doc. RNDr. Mária Reháková, CSc., doc. RNDr. Zuzana Vargová, Ph.D.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ VB1/01		<b>Course name:</b> General botany			
<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 ECTS credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚBEV/CYT1/15					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b> This subject enables to understand the structure and function of plant cells, tissues and organs and to enhance student's ability to describe the biological role of plants for life on earth.					
<b>Brief outline of the course:</b> The structure and function of plant cells and tissues. Plant organs, their structure, function, shape and organization. Plant reproduction and grounding in embryology. Basic information and terms that are necessary for understanding of relationship between internal structure and functions of organs and functions plant organism en bloc.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 978					
A	B	C	D	E	FX
17.48	27.3	28.83	15.95	7.67	2.76
<b>Provides:</b> prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčík, PhD., PaedDr. Andrea Lešková, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ GEE1/03		<b>Course name:</b> Genetics			
<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 ECTS credits:</b> 7					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> written tests oral examination					
<b>Learning outcomes:</b> To provide the students with knowledge of basic genetic principles of inheritance.					
<b>Brief outline of the course:</b> Mendel's principles of inheritance. Gene interactions. Sex-linked traits. Cytogenetics, mutations and mutagenesis. Structure and function of DNA, mRNA, tRNA and rRNA. Genetic code. Mechanism of replication, transcription and translation. Post-transcriptional and post-translational modifications. Regulation of gene expression. Genetic mechanisms at subcellular level. Genetics of bacteria. Cytogenetics and mutations. Basis of human genetics. Population genetics. Quantitative traits. Human genome project.					
<b>Recommended literature:</b> Darnell, J., Lodish, H., Baltimore, D.: Molecular Cell Biology. Scientific American, New York, 1992 Lewin, B.: Genes IV. Oxford University Press, Oxford, 1990 Loewy, A. G., Ciekewitz, P., Menninger, J. R., Gallant, J. A. N.: Cell Structure and Function. Saunders College Publ., Philadelphia, 1991 Russell, P. J.: Genetics. Harper Collins Publ., New York, 1992 Van Dam-Mieras, M. C. a kol.: Genome Management in Eukaryotes. Butterworth-Heinemann Ltd., Oxford, 1993					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 191					
A	B	C	D	E	FX
11.52	6.81	18.32	18.85	29.32	15.18

<b>Provides:</b> prof. RNDr. Eva Čellárová, DrSc., RNDr. Katarína Bruňáková, PhD.
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<b>Date of last modification:</b> 01.12.2020
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<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.
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## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ HISE1/15		<b>Course name:</b> Histology			
<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 ECTS credits:</b> 6					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚBEV/CYT1/15					
<b>Conditions for course completion:</b> Oral examination					
<b>Learning outcomes:</b> To provide the students with knowledge of basic morphology of tissues of animals.					
<b>Brief outline of the course:</b> Epithelium and glands. Connective tissue. Cartilage. Bone. Muscle. Nervous Tissue. Blood and hemopoiesis. Circulatory system. Lymphoid system. Endocrine system. Integument. Respiratory system. Digestive system. Urinary system. Female reproductive system. Male reproductive system. Nervous system. Special senses.					
<b>Recommended literature:</b> Gartner, L.P., Hiatt, J.L.: Color Textbook of Histology. W.B. Saunders Company, Philadelphia, 1997 Juanqueira, L.C., Carneiro, J., Kelley, R.O.: Basic Histology. Prentice Hall International Inc., Apleton & Lange, 1992 Michel H. Ross, Wojciech Pawlina: Histology, Lippincott Williams & Wilkins, 2011					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 410					
A	B	C	D	E	FX
12.44	14.88	15.85	20.24	24.15	12.44
<b>Provides:</b> doc. RNDr. Zuzana Daxnerová, CSc., RNDr. Juraj Ševc, PhD., RNDr. Anna Alexovič Matiašová, PhD.					
<b>Date of last modification:</b> 16.02.2021					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ ACL/03		<b>Course name:</b> Human Anatomy			
<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 ECTS 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> Written examination					
<b>Learning outcomes:</b> Anatomic systems of man.					
<b>Brief outline of the course:</b> Anatomic terminology, skeleton and muscles, gastrointestinal system, respiratory system, circulatory and lymphatic system, urogenital system, sensory organs, nervous system, ontogenesis of man.					
<b>Recommended literature:</b> Kahle, W., Leonhardt, H., Platzer, W. : Color Atlas and Textbook of Human Anatomy in 3 Volumes : Volume 1 : Locomotor System, Volume 2: Internal Organs and Volume 3: Nervous System and Sensory Organs Thieme Medical Publishers, Inc. New York, 1993 Anne M. R. Agur : Grant's atlas of anatomy. Williams et Wilkins, USA, 1991					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1817					
A	B	C	D	E	FX
5.01	16.57	27.68	25.59	22.12	3.03
<b>Provides:</b> RNDr. Juraj Ševc, PhD., RNDr. Anna Alexovič Matiašová, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ HDR1/99		<b>Course name:</b> Hydrobiology			
<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 ECTS credits:</b> 3					
<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> Abiotic and biotic factors of water environment; typology and characteristics of freshwater habitats; eutrophication, pollution saprobity and evaluation of habitats with relation to abiotic factors.					
<b>Recommended literature:</b> Horn, A., Goldman, C.: Limnology. Mc Graw Hill. 2nd Edition, 1994 Wetzel, R.G.: Limnological analyses. Springer Verl., 3rd Edition, 2000					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 212					
A	B	C	D	E	FX
39.62	21.23	18.4	19.34	1.42	0.0
<b>Provides:</b> RNDr. Andrej Mock, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ IMACHU/03		<b>Course name:</b> Instrumental Methods of Analytical Chemistry			
<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 ECTS 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>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 107					
A	B	C	D	E	FX
70.09	19.63	7.48	1.87	0.93	0.0
<b>Provides:</b> prof. Mgr. Vasil' Andruch, DSc., RNDr. Jana Šandrejová, PhD., RNDr. Lívia Kocúrová, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ VEK1/03		<b>Course name:</b> Introduction to Ecology			
<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 ECTS 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> Fundamental parameters and relations in ecological science.					
<b>Brief outline of the course:</b> Ecological factors and relations in environment (air, water, soil); influence of ecological factors on individuals (morphological adaptations, behavioral reactions); populations and communities; ecosystems (impact assessment); conservation and biodiversity.					
<b>Recommended literature:</b> Begon, M., Harper, J. L., Townsend, C. L.: Ecology: individuals, populations, and communities. Blackwell Sci. Publ., 1990					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1655					
A	B	C	D	E	FX
20.54	16.74	24.65	17.7	12.15	8.22
<b>Provides:</b> RNDr. Natália Raschmanová, PhD.					
<b>Date of last modification:</b> 07.02.2019					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

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

<b>Course assessment</b>					
Total number of assessed students: 216					
A	B	C	D	E	FX
49.54	20.83	15.28	8.33	6.02	0.0
<b>Provides:</b> doc. RNDr. Andrea Straková Fedorková, PhD.					
<b>Date of last modification:</b> 20.09.2017					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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 ECTS 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>Notes:</b>	
<b>Course assessment</b>	
Total number of assessed students: 1731	
abs	n
86.48	13.52
<b>Provides:</b>	
<b>Date of last modification:</b> 25.09.2019	
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚGE/ KRE1/03		<b>Course name:</b> Landscape ecology			
<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 ECTS 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> 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.					
<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.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 189					
A	B	C	D	E	FX
6.88	11.11	17.99	23.28	39.15	1.59
<b>Provides:</b> RNDr. Dušan Barabas, CSc., doc. Mgr. Michal Gallay, PhD.					
<b>Date of last modification:</b> 19.08.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚMV/ MTB/13	<b>Course name:</b> Mathematics for biologists
<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 ECTS credits:</b> 5	
<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> Short introduction to mathematics, mathematical problem solving strategies and their applications to solving problems in biology and other sciences.	
<b>Brief outline of the course:</b> <ol style="list-style-type: none"> <li>1. Basic terms</li> <li>2. Geometry in the plane (vectors, lines in the plane and their representations)</li> <li>3. Systems of linear equations (linear equation and inequality, system of linear equations, Gaussian elimination)</li> <li>4. Functions (monotonicity, local extrema, function composition, inverse function, elementary functions and their properties)</li> <li>5. Combinatorics (binomial theorem, combinations and permutations without / with repetition, inclusion-exclusion principle)</li> <li>6. Sequences and series (monotonicity and boundedness, recurrent sequence, geometric series)</li> <li>7. Limit (limit of a sequence, limit of function, convergence, divergence, methods for computing limits, continuity)</li> <li>8. Derivatives (sum, product, quotient and chain rule, derivatives of elementary functions, Taylor polynomial, analysis of functions)</li> <li>9. Integrals (indefinite integral, integration methods: by substitution, by parts, by partial fractions; definite integral)</li> <li>10. Ordinary differential equations (first order separable ODE, first order linear ODE)</li> </ol>	
<b>Recommended literature:</b> E. Bohl, <i>Mathematik in der Biologie</i> , Springer, Berlin Heidelberg, 2006. D. Studenovská, T. Madaras, S. Mockovčiak: <i>Zbierka úloh z matematiky pre nematematické odbory</i> , UPJŠ 2006. D. Studenovská, T. Madaras: <i>Matematika pre nematematické odbory</i> , UPJŠ 2006.	
<b>Course language:</b> Slovak	
<b>Notes:</b>	

<b>Course assessment</b>					
Total number of assessed students: 456					
A	B	C	D	E	FX
10.53	11.62	16.23	18.42	32.68	10.53
<b>Provides:</b> RNDr. Igor Fabrici, Dr., RNDr. Anton Hovana, PhD., RNDr. Katarína Čekanová					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ GLP/12		<b>Course name:</b> Methodology of experiment. Fundamentals.			
<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 ECTS 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> On the basis of prepared seminary works, and the elaborated final written project. On the basis of continuous assessment, written and oral examination.					
<b>Learning outcomes:</b> Correct and theoretically based processing and evaluation of the results in the experimental practice. Evaluation of measurement uncertainties.					
<b>Brief outline of the course:</b> Introduction and basics of statistical evaluation of experimental results. The basic formulas used in the processing of the results of the chemical and biological experiments. Distribution of the results of measurements, measures of central tendency and spread. Assessment of the precision, of accuracy, and reliability of the results. Uncertainties and errors of measurements. Calibration in analytical chemistry. Evaluation of analytical methods. Solving of the typical examples in the frame of the practical lectures.					
<b>Recommended literature:</b> Brereton R. G.: Chemometrics, Wiley, 2003 Harvey D.: Modern Analytical Chemistry, McGraw-Hill, 2000 J.N. Miller, J.C. Miller: Statistics and Chemometrics for Analytical Chemistry, Pearson Education Limited, 2010					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 17					
A	B	C	D	E	FX
23.53	29.41	17.65	0.0	29.41	0.0
<b>Provides:</b> doc. Ing. Viera Vojteková, PhD.					

**Date of last modification:** 31.03.2021

**Approved:** doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ MKV/15		<b>Course name:</b> Mikrobiológia a základy virológie			
<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 ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 3., 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚBEV/CYT1/15					
<b>Conditions for course completion:</b> Attendance of practicals (at least 90%), 2 written examinations during semester, final oral examination					
<b>Learning outcomes:</b> Students will obtain a basic informations on viruses, prokaryotic and eukaryotic microorganisms, their cytology, physiology, genetics, ecology, classification, and importance . Information on basic methods for studying microorganisms will be provided.					
<b>Brief outline of the course:</b> Viruses, prokaryotic and eukaryotic microorganisms, their cytology, physiology, genetics, ecology, classification. The importance of microorganisms for humans and environment.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1406					
A	B	C	D	E	FX
22.4	13.58	18.28	19.63	21.76	4.34
<b>Provides:</b> doc. RNDr. Peter Pristaš, CSc., RNDr. Mariana Kolesárová, PhD., RNDr. Lenka Maliničová, PhD., RNDr. Mária Píknová, PhD.					
<b>Date of last modification:</b> 02.02.2021					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ MB1/01		<b>Course name:</b> Molecular Biology			
<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 ECTS 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> Oral examination.					
<b>Learning outcomes:</b> To provide the students with knowledge of molecular basis of inheritance and control of gene expression and development.					
<b>Brief outline of the course:</b> Structure and properties of information macromolecules. Molecular mechanisms of DNA replication and repair, transcription and translation. Prokaryotic and eukaryotic genome. Control of gene expression in prokaryotes and eukaryotes. Control of cell cycle.					
<b>Recommended literature:</b> Lodish, H., Baltimore, D., Berk, A. et al.: Molecular Cell Biology. Sci. Amer. Books Inc., W.H. Freeman and Company, New York, 1995 Myers, R.A.: Molecular Biology and Biotechnology. VCH Publishers Inc., New York, 1995					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 973					
A	B	C	D	E	FX
6.47	11.61	17.99	18.81	32.37	12.74
<b>Provides:</b> doc. RNDr. Peter Pristaš, CSc.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ OCHU/03	<b>Course name:</b> Organic chemistry
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present	
<b>Number of ECTS credits:</b> 6	
<b>Recommended semester/trimester of the course:</b> 2.	
<b>Course level:</b> I.	
<b>Prerequisites:</b> ÚCHV/VCHU/15 and leboÚCHV/VCHU/14 and leboÚCHV/VCHU/10 and leboÚCHV/VACH/10	
<b>Conditions for course completion:</b> Two tests at lecture in 7 and 14th week. Test max 50 points. At least 25 points required. Written exam, 100 points. At least 49% of points required. Final evaluation: A 90-100 pts, B 80-89 pts, C 70-79 pts, D 60-69 pts, E 50-59 pts, FX 0-49 pts	
<b>Learning outcomes:</b> Basic organic chemistry course.	
<b>Brief outline of the course:</b> Chemical bonding Hybridization and Bonding Covalent bonds Double bonds and Triple Bonds Structural Formulas of Organic Molecules Polar Covalent Bonds and Electronegativity Constitutional Isomers Alkenes Electrophilic Additions Strong Br&#248;nsted Acids Lewis Acids (non-Proton Electrophiles) Electrophilic Halogen Reagents Other Electrophilic Reagents Reduction Oxidation Radical Additions Allylic Substitution Alkynes Addition Reactions Hydrogenation Electrophiles Hydration & Tautomerism Hydroboration Nucleophilic Addition & Reduction Acidity of Terminal Alkynes (Substitution of H) Alkyl Halides General Reactivity Substitution(of X) SN2 Mechanism SN1 Mechanism Elimination (of HX) Summary of Substitution vs. Elimination Substitution by Metals Elimination Reactions of Dihalides Alcohols Reactions of Alcohols Substitution of the Hydroxyl H Substitution of the Hydroxyl Group Elimination of Water Oxidation of Alcohols Reactions of Phenols Acidity of Phenols Ring Substitution of Phenols Oxidation to Quinones Aromatic compounds Electrophilic Substitution A Substitution Mechanism Reactions of Substituted Benzenes Reaction Characteristics Reactions of Disubstituted Rings Reactions of Substituent Groups Nucleophilic Substitution, Elimination & Addition Reactions Amines Basicity of Nitrogen Compounds Acidity of Nitrogen Compounds Important Reagent Bases Reactions of Amines Electrophilic Substitution at Nitrogen Preparation of 1°-Amines Preparation of 2° & 3°-Amines Reactions with Nitrous Acid Reactions of Aryl Diazonium Intermediates Elimination Reactions of Amines Oxidation States of Nitrogen Basic information: Aldehydes & Ketones Carboxylic Acids Carboxylic Derivatives Natural products	
<b>Recommended literature:</b> 1. on-line ppt presentation in MOODLE, moodle science.upjs.sk 2. Organic Chemistry, Clayden, Greeves Warren & Wothers, Oxford University Press, 2010	

3. Organic Chemistry, Solomon, Willey, 2009					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b>					
Total number of assessed students: 757					
A	B	C	D	E	FX
3.17	7.0	13.34	23.38	47.42	5.68
<b>Provides:</b> prof. RNDr. Jozef Gonda, DrSc., RNDr. Slávka Hamul'aková, PhD., doc. RNDr. Miroslava Martinková, PhD.					
<b>Date of last modification:</b> 27.03.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ POCHU/03		<b>Course name:</b> Organic chemistry - Lab.			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 4 <b>Per study period:</b> 56 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 3.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚCHV/OCHU/03					
<b>Conditions for course completion:</b> Two tests 2x25 p., twelve reports 12x2 p., laboratory skills 12 p., short quizzes and questions 14 p. A 100 p. in total. Grades: A: 91-100b, B: 81-90b, C: 71-80b, D: 61-70b, E: 51-60b, Fx: 0-50b. Based on continuous evaluation.					
<b>Learning outcomes:</b> Students will become familiar with the basic isolation and purification methods used in a synthetic laboratory. Students should master basic laboratory technique and be able to apply the theoretical knowledge from the basic course of organic chemistry in simple synthetic projects.					
<b>Brief outline of the course:</b> Preparation, isolation, purification and identification of organic compounds. The emphasis is on gaining the experimental skills in synthesis of organic compounds, distillation, extraction, crystallization, sublimation and thin-layer chromatography.					
<b>Recommended literature:</b> 1. Handout with experimental procedures <a href="http://kekule.science.upjs.sk/pochu">http://kekule.science.upjs.sk/pochu</a> . 2. Organic chemistry lectures.					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 292					
A	B	C	D	E	FX
33.22	26.37	22.26	12.67	5.48	0.0
<b>Provides:</b> RNDr. Slávka Hamul'aková, PhD., RNDr. Martin Walko, PhD., RNDr. Mária Vilková, PhD., RNDr. Ladislav Janovec, PhD., RNDr. Ján Elečko, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚBEV/ PAR1/03		<b>Course name:</b> Parasitology I.					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present							
<b>Number of ECTS credits:</b> 6							
<b>Recommended semester/trimester of the course:</b> 5.							
<b>Course level:</b> I., II., III.							
<b>Prerequisites:</b> ÚBEV/ZOM/04 and leboÚBEV/ZO1/03 and leboÚBEV/ZO1/04							
<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>Notes:</b>							
<b>Course assessment</b> Total number of assessed students: 439							
A	B	C	D	E	FX	N	P
52.16	20.05	12.76	10.48	3.19	0.68	0.0	0.68
<b>Provides:</b> RNDr. Viktória Majláthová, PhD., RNDr. Igor Majláth, PhD.							
<b>Date of last modification:</b> 03.05.2015							
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ FCHU/10		<b>Course name:</b> Physical Chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 2 <b>Per study period:</b> 42 / 28 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚCHV/VCHU/14 and leboÚCHV/VCHU/10 and leboÚCHV/VACH/10 and leboÚCHV/VCHU/15					
<b>Conditions for course completion:</b> Two partial tests from computational seminars. Examination.					
<b>Learning outcomes:</b> To provide the students with basic knowledge of physical chemistry.					
<b>Brief outline of the course:</b> Fundamental concepts of thermodynamics, thermochemistry, chemical equilibrium, phase equilibria and diagrams, laws for ideal gas and reals gases, liquids, solutions, solutions of electrolytes. Electrochemistry: ionics and electrodicts. Electrodes and electrochemical cells, corrosion. Chemical kinetics, catalysis. Adsorption.					
<b>Recommended literature:</b> T. Engel, P. Reid: Physical Chemistry, Pearson Educat. Inc., San Francisco 2006 P.W. Atkins: Physical Chemistry, Oxford University Presss, Oxford 1986, 1990, 1996 W.J. Moore: Physical Chemistry, Longman, London 1972 and newer editions					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 285					
A	B	C	D	E	FX
32.28	19.65	14.74	17.19	12.63	3.51
<b>Provides:</b> prof. RNDr. Renáta Oriňaková, DrSc., RNDr. Andrea Morovská Turoňová, PhD., Mgr. Ján Macko, PhD., RNDr. Ivana Šišoláková, PhD.					
<b>Date of last modification:</b> 27.03.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚFV/ FPB/13		<b>Course name:</b> Physics for Biologists			
<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 ECTS 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> Participation at the lectures and trainings. Test.					
<b>Learning outcomes:</b> Completing the course students will get knowledge about the fundamental physical laws and will understand their relation to biologically oriented scientific fields.					
<b>Brief outline of the course:</b> Physics. Describing motion. Newton's law: explaining motion. Energy and oscillations. Momentum and impulse. Rotational motion of solid objects. Behavior of fluids. Electrostatic phenomena. Mechanical waves. Light waves and color. Light and image formation.					
<b>Recommended literature:</b> 1. pdf presentation 2. A. Giambattista, B. M. Richardson, R. C. Richardson, Physics, McGraw-Hill, New York, 2010. 3. W. T. Griffith, J. W. Brossing, The physics of everyday phenomena, McGraw-Hill, New York, 2009. 4. D. Halliday, R. Resnick, J. Walker, Fyzika, Vutium a Prometheus, Praha, 2006.					
<b>Course language:</b> Slovak					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 817					
A	B	C	D	E	FX
14.69	17.5	26.44	22.52	17.5	1.35
<b>Provides:</b> RNDr. Gabriela Fabriciová, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ FG1/03		<b>Course name:</b> Phytogeography			
<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 ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 5.					
<b>Course level:</b> I., II.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Written work. Exam.					
<b>Learning outcomes:</b> To obtain theoretical and practical knowledge from phytogeography.					
<b>Brief outline of the course:</b> History of phytogeography. Plants and environment. Chorology, area, area disjunctions, relics, endemites, vicariancy, floral elements. Main course of florogenesis since paleozoic to quaternary ages. Postglacial evolution of Slovak vegetation. Regional phytogeography of Earth. Vegetation geography: from tropical rainforests to tundras. Changes of earth vegetation and their study. Geographical origin of cultivated plants. Practices: Fieldworks. Preparing of maps. Phytogeographical division of Slovakia. Students seminar works on phytogeography.					
<b>Recommended literature:</b> Hendrych R.: Fytogeografie. - SPN, Praha 1984. Brown J. H., Lomolino M. V.: Biogeography. - Sinauer Associates, Sunderland, 1998.					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 374					
A	B	C	D	E	FX
39.04	22.46	21.12	8.29	8.29	0.8
<b>Provides:</b> prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčík, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ FR1/10		<b>Course name:</b> Plant Physiology			
<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 / 3 <b>Per study period:</b> 28 / 42 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 6					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚBEV/VB1/01					
<b>Conditions for course completion:</b> Active participation on practicals. Oral examen					
<b>Learning outcomes:</b> Overview of all important physiological processes in plant organisms.					
<b>Brief outline of the course:</b> Water in plan, mineral nutrition, photosynthesis, pholem transport, respiration, lipid biosynthesis, heterotrophy, metabolism of macronutrients, secondary metabolism, growth and development, plant hormones, photoreceptors, dormancy, germination, flowering, plant movements, stress physiology Lab practicals: Measurements of water potential, Quantitative analyses of nutrients in dust. Separation of assimilation pigments by TLC. Quantitative analyses of chlorophyll a and b. Biotest of cytokinins. Qualitative and quantitative analyses of sugars. HPLC separation of glucose and fructose. Measurements of respiration by selective electrode. Measurement of total nitrogen by Kjeldahl method. Qualitative analyses of proteins. Activity of some enzymes in potato and pea. Colour of anthocyanins at different pH. Measurement of silica level by distillation method. Germination of seeds.					
<b>Recommended literature:</b> Hopkins W.G. Huner N.P.A., Introduction to plant physiology. 3rd ed., Wiley, New York 2004					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1719					
A	B	C	D	E	FX
15.36	13.32	15.71	13.73	23.04	18.85
<b>Provides:</b> doc. RNDr. Peter Paľove-Balang, PhD.					
<b>Date of last modification:</b> 26.03.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ PACHU/03		<b>Course name:</b> Practical from Inorganic Chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 4 <b>Per study period:</b> 56 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚCHV/VCHU/14 and leboÚCHV/VCHU/15 and leboÚCHV/VCHU/10 and leboÚCHV/VACH/10					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b> The practical acquirements at preparation and study of inorganic compounds and their physico-chemical properties by common laboratory techniques.					
<b>Brief outline of the course:</b> The utilization of common laboratory techniques for preparation of elements (H <sub>2</sub> , O <sub>2</sub> , Cu, Ni), oxides(CO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> ·xH <sub>2</sub> O), nitrides(Mg <sub>3</sub> N <sub>2</sub> ), acids (HNO <sub>3</sub> , H <sub>3</sub> BO <sub>3</sub> ), salts((NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> , KMnO <sub>4</sub> ), binary salts(NH <sub>4</sub> )Fe(SO <sub>4</sub> ) <sub>2</sub> ·12H <sub>2</sub> O), halides (CuCl, CuCl <sub>2</sub> ·2H <sub>2</sub> O, SnI <sub>4</sub> , CuBr <sub>2</sub> ) and coordination compounds ([Cr <sub>2</sub> (CH <sub>3</sub> COO) <sub>4</sub> (H <sub>2</sub> O) <sub>2</sub> ], [CoCl <sub>2</sub> (en) <sub>2</sub> ]Cl, [Cu(NH <sub>3</sub> ) <sub>4</sub> ]SO <sub>4</sub> ·H <sub>2</sub> O, K <sub>3</sub> [Al(C <sub>2</sub> O <sub>4</sub> ) <sub>3</sub> ]·3H <sub>2</sub> O).					
<b>Recommended literature:</b> Z. Vargová, J. Kuchár: Praktikum z anorganickej chémie, Košice, 2008 M. Reháková, M. Dzurillová, V. Zeleňák, V. Urvichiarová: Laboratórna technika, PF UPJŠ, Košice, 1999					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 533					
A	B	C	D	E	FX
51.97	27.77	14.63	2.63	2.06	0.94
<b>Provides:</b> doc. RNDr. Juraj Kuchár, PhD., RNDr. Martin Vavra, PhD., RNDr. Miroslava Matiková Maľarová, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ PAEC/03		<b>Course name:</b> Practical in Analytical Chemistry			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 4 <b>Per study period:</b> 56 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 4					
<b>Recommended semester/trimester of the course:</b> 4.					
<b>Course level:</b> I.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b> Assessment					
<b>Learning outcomes:</b> Application of theoretical knowledge of qualitative and quantitative analytical chemistry into analytical laboratory practise					
<b>Brief outline of the course:</b> Practical in qualitative and quantitative analysis. Qualitative analysis, separation by selective precipitation. Quantitative methods. Gravimetry, general principles of method. Volumetric methods. Preparation of accurate solutions. Indication of equivalency point. Titration curves, calculations in volumetric analysis. Acidimetry, alkalimetry. Manganometry. Iodometry. Complexometry. Argentometry. Selected instrumental methods.					
<b>Recommended literature:</b> D.Harvey: Modern Analytical Chemistry. McGraw Hill, Boston, 2000. D.A. Skoog: Principles of Instrumental Analysis. Saunders Col. Publishing, New York 1985. E.Prichard: Quality in the Analytical Chemistry Laboratory, Wiley, 1995					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 109					
A	B	C	D	E	FX
39.45	44.04	13.76	1.83	0.0	0.92
<b>Provides:</b> RNDr. Rastislav Serbin, PhD., RNDr. Lívia Kocúrová, PhD., RNDr. Jana Šandrejová, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ PFCU/03		<b>Course name:</b> Practical in Physical Chemistry			
<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 ECTS 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> Approved laboratory reports. Assessment.					
<b>Learning outcomes:</b> Theoretical principles, description of each technique and appropriate physical chemistry experiments.					
<b>Brief outline of the course:</b> Experimental verification of theoretical knowledge on thermodynamics, thermochemistry, chemical equilibria (determination of enthalpy, phase diagrams), colligative properties (cryoscopy, ebullioscopy), adsorption. Experimental verification of theoretical knowledge on electrochemistry (conductivity, dissociation constants, activity coefficients, electromotive force of galvanic cell, Daniell cell, potentials, polarography) and chemical kinetics (determination of rate constants).					
<b>Recommended literature:</b> B.P. Levitt: Findlay's Practical Physical Chemistry, Longman, London 1973 W.J. Moore: Physical Chemistry, Longman, London 1972 P.W. Atkins: Physical Chemistry, Oxford University Press, Oxford, New York 2002					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 349					
A	B	C	D	E	FX
73.64	20.92	4.58	0.57	0.29	0.0
<b>Provides:</b> RNDr. František Kaľavský, RNDr. Andrea Morovská Turoňová, PhD.					
<b>Date of last modification:</b> 29.03.2021					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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> combined, present	
<b>Number of ECTS 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>Notes:</b>	
<b>Course assessment</b>	
Total number of assessed students: 41	
abs	n
12.2	87.8

<b>Provides:</b> Mgr. Agata Horbacz, PhD.
<b>Date of last modification:</b> 15.03.2019
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ VS/02		<b>Course name:</b> Selected seminar			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 1 <b>Per study period:</b> 14 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 1					
<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>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 12					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> prof. RNDr. Igor Hudec, CSc.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ ASM/03	<b>Course name:</b> Separation Methods
<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 ECTS credits:</b> 5	
<b>Recommended semester/trimester of the course:</b> 6.	
<b>Course level:</b> I.	
<b>Prerequisites:</b> (ÚCHV/ANCHU/03 and leboÚCHV/ANCHE/09 and leboÚCHV/ANCH1b/03), (ÚCHV/PAEC/03 and leboÚCHV/PANCH/06 and leboÚCHV/PANCHE/09 and leboÚCHV/ PACU/03)	
<b>Conditions for course completion:</b> Examination	
<b>Learning outcomes:</b> Survey of basic principles, theoretical background and applications of separation methods in research and analytical practice.	
<b>Brief outline of the course:</b> Basic principles, classification, theory and applications of separation methods. Extraction - LLE, SPE, SPME. Chromatographic methods - theory, classification. Gas chromatography, retention mechanisms, stationary phases and their selection. Instrumentation, detectors in GC. Data evaluation - qualitative and quantitative analysis. High-performance liquid chromatography, principles, classification. Stationary and mobile phases in LC, instrumentation. Applications. Comparison of GC and HPLC methods. Planar chromatographic methods - TLC, HPTLC, PC. Electrophoretic techniques - CE, ITP, HPCE. MEKC - micellar electrokinetic capillary chromatography. Lab-on-a-Chip (LOC), TAS, electrophoresis on a chip, principles and applications.	
<b>Recommended literature:</b> Krupčík, J.: Separáčné metódy, SVŠT CHTF, Bratislava 1983. Skoog D. A., Leary J. J.: Principles of instrumental analysis. Saunders College Publishing, New York 1997. Pawliszyn J., Lord H. L.: Handbook of sample preparation, Wiley 2010. Churáček J., Jandera P.: Úvod do vysokoúčinné kapalínové chromatografie, SNTL, Praha 1984.	
<b>Course language:</b>	
<b>Notes:</b>	

<b>Course assessment</b>					
Total number of assessed students: 460					
A	B	C	D	E	FX
27.61	25.0	26.09	13.04	5.87	2.39
<b>Provides:</b> doc. RNDr. Taťána Gondová, CSc.					
<b>Date of last modification:</b> 03.02.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ ASC1/99		<b>Course name:</b> Separation Methods Practicals			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week: 5 Per study period: 70</b> <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚCHV/ASM/03					
<b>Conditions for course completion:</b> Laboratory reports, test. Assessment					
<b>Learning outcomes:</b> To obtain practical experiences for applications of separation methods in analytical practice.					
<b>Brief outline of the course:</b> Application of gas chromatography, high-performance liquid chromatography and thin-layer chromatography methods in analysis. Application of electrophoretic methods. Spectrophotometric determination of selected analytes after extraction treatment of sample. Application of ion-exchange chromatography in analytical practice.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 125					
A	B	C	D	E	FX
88.0	11.2	0.8	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Katarína Reiffová, PhD., doc. RNDr. Taťána Gondová, CSc.					
<b>Date of last modification:</b> 03.02.2020					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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> combined, present	
<b>Number of ECTS 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 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>Notes:</b>	

<b>Course assessment</b>							
Total number of assessed students: 14050							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.48	0.07	0.0	0.0	0.0	0.04	7.51	3.9
<b>Provides:</b> Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
<b>Date of last modification:</b> 18.03.2019							
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.							

## 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> combined, present	
<b>Number of ECTS 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>Notes:</b>	

<b>Course assessment</b>							
Total number of assessed students: 11330							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.75	0.56	0.02	0.0	0.0	0.05	9.87	3.75
<b>Provides:</b> Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
<b>Date of last modification:</b> 18.03.2019							
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.							

## 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> combined, present							
<b>Number of ECTS 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>Notes:</b>							
<b>Course assessment</b> Total number of assessed students: 8383							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
90.11	0.05	0.01	0.0	0.0	0.02	4.04	5.76
<b>Provides:</b> Mgr. Marcel Čurgali, Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
<b>Date of last modification:</b> 03.05.2015							
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.							

## 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> combined, present							
<b>Number of ECTS 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>Notes:</b>							
<b>Course assessment</b> Total number of assessed students: 5101							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.2	0.29	0.04	0.0	0.0	0.0	6.76	7.7
<b>Provides:</b> Mgr. Marcel Čurgali, Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD.							
<b>Date of last modification:</b> 03.05.2015							
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ SVK/01		<b>Course name:</b> Student Scientific Conference			
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present					
<b>Number of ECTS 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>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 277					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚCHV/ SVK/00		<b>Course name:</b> Students Scientific Conference (Presentation)			
<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 ECTS 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>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 35					
A	B	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## 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> combined, present	
<b>Number of ECTS 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>Notes:</b>	

<b>Course assessment</b>	
Total number of assessed students: 153	
abs	n
45.75	54.25
<b>Provides:</b> Mgr. Dávid Kaško, PhD.	
<b>Date of last modification:</b> 18.03.2019	
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.	

## 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> combined, present	
<b>Number of ECTS 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>Notes:</b>	

<b>Course assessment</b>	
Total number of assessed students: 393	
abs	n
44.53	55.47
<b>Provides:</b> MUDr. Peter Dombrovský, Mgr. Marek Valanský	
<b>Date of last modification:</b> 15.03.2019	
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ VeB/15		<b>Course name:</b> Všeobecná ekológia			
<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 ECTS credits:</b> 4					
<b>Recommended semester/trimester of the course:</b>					
<b>Course level:</b> I.					
<b>Prerequisites:</b> (ÚBEV/VEK1/03,ÚBEV/OZP1/07,ÚGE/KRE1/03) and lebo(ÚBEV/ VEK1/03,ÚCHV/ANCHU/03,ÚCHV/UECH/03)					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 15					
A	B	C	D	E	FX
40.0	20.0	13.33	26.67	0.0	0.0
<b>Provides:</b>					
<b>Date of last modification:</b> 23.02.2016					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚBEV/ ZOG1/03	<b>Course name:</b> Zoogeography
<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 ECTS credits:</b> 6	
<b>Recommended semester/trimester of the course:</b> 5.	
<b>Course level:</b> I., II.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Active participation in seminars. Preparation of oral presentation to selected topic. Semestral written test. Oral examination.	
<b>Learning outcomes:</b> The main goal of the subject is to get knowledge on the basic reasons of recent distribution of the animals on the Earth, zoogeographic regionalization of the Earth's surface and human influence on the faunal distribution in the history.	
<b>Brief outline of the course:</b> This course will review our current understanding of the patterns of animal distribution and the processes that influence distributions of species and their attributes. Zoogeography will integrate information on the historical and current ecology, genetics, and physiology of animals and their interaction with environmental processes (continental drift, climate) in regulating geographic distributions. The course will emphasize descriptive and analytical approaches useful in hypothesis testing in zoogeography and will illustrate applied aspects of zoogeography (e.g. refuge design in conservation).	
<b>Recommended literature:</b> Buchar, J., 1983: Zoogeografie. SPN Praha Darlington, P.J., 1998: Zoogeography: The geographical distribution of animals. Krieger, USA Lomolino M.V., Brown J.H., Riddle B. R., 2005: Biogeography. Sinauer Associates, 1-845 Plesník, P., Zatkalík, F., 1996: Biogeografia. Vysokoškolské skriptá, PríFUK Bratislava	
<b>Course language:</b>	
<b>Notes:</b>	

<b>Course assessment</b>					
Total number of assessed students: 944					
A	B	C	D	E	FX
24.05	23.41	24.36	18.43	7.94	1.8
<b>Provides:</b> prof. RNDr. Ľubomír Kováč, CSc.					
<b>Date of last modification:</b> 05.10.2017					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ ZO1/03		<b>Course name:</b> Zoology I			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 3., 5.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚBEV/PMZ/10					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b> Basis of Invertebrata taxonomy- Importance and function of chosen individual taxons. Phylogenetic relations.					
<b>Brief outline of the course:</b> Anatomy, morphology and development of separate groups of Invertebrates – especially Porifera, Cnidaria, Plathelminthes, Nematelminthes, Mollusca, Anelida, Arthropoda, Echinodermata. Characteristic species.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 1169					
A	B	C	D	E	FX
8.04	15.4	22.16	21.9	23.78	8.73
<b>Provides:</b> doc. RNDr. Ľubomír Panigaj, CSc., RNDr. Peter Ľuptáčik, PhD.					
<b>Date of last modification:</b> 14.11.2016					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> ÚBEV/ ZOO1/03		<b>Course name:</b> Zoology II			
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present					
<b>Number of ECTS credits:</b> 5					
<b>Recommended semester/trimester of the course:</b> 4., 6.					
<b>Course level:</b> I.					
<b>Prerequisites:</b> ÚBEV/PMZ/10					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b> Fundamental information on taxonomy and morphology of vertebrates					
<b>Brief outline of the course:</b> Systematic and phylogenetic relationships of vertebrate. Review of important groups of fishes, amphibians, reptiles, birds and mammals.					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Notes:</b>					
<b>Course assessment</b> Total number of assessed students: 973					
A	B	C	D	E	FX
22.51	28.16	18.91	15.93	10.07	4.42
<b>Provides:</b> doc. RNDr. Marcel Uhrin, PhD., RNDr. Peter Ľuptáčik, PhD.					
<b>Date of last modification:</b> 03.05.2015					
<b>Approved:</b> doc. RNDr. Marcel Uhrin, PhD.					