CONTENT

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJAKA/07	**Course name:** Academic English

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: combined, present

Number of ECTS credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
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 thorugh 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

Learning outcomes:

Brief outline of the course:

Recommended literature:
Seal B.: Academic Encounters, CUP, 2002
T. Armer :Cambridge English for Scientists, CUP 2011
M. McCarthy M., O´Dell F. - Academic Vocabulary in Use, CUP 2008
Zemach, D.E, Rumisek, L.A: Academic Writing, Macmillan 2005
Olsen, A. : Active Vocabulary, Pearson, 2013
www.bbclearningenglish.com
Cambridge Academic Content Dictionary, CUP, 2009

Course language:
English language, level B2 according to CEFR.

Notes:

Course assessment
Total number of assessed students: 380

A	B	C	D	E	FX
33.68	22.11	15.53	10.0	6.58	12.11

Provides: Mgr. Viktória Mária Slovenská

Date of last modification: 17.09.2020

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ANCH3/03	**Course name:** Analytical Chemistry

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Oral Examination

Learning outcomes:
Fundamentals of Analytical Chemistry for biologists.

Brief outline of the course:
What is the Analytical Chemistry? Basic principles, classification and selection of analytical methods. 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 equvivalency point. Titration curves, calculations in volumetric analysis. Acidimetry, alkalimetry. Manganometry. Iodometry. Complexometry. Argentometry. Instrumental methods of analytical chemistry (basic principles, instrumentation and applications) - electroanalytical, optical and separation methods. Chromatographic and electrophoretic methods.

Recommended literature:
1.D.Harvey: Modern Analytical Chemistry. McGraw Hill, Boston, 2000.
2.D.A.Skoog: Principles of Instrumental Analysis. Saunders Col. Publishing, New York 1985.
3.E.Prichard: Quality in the Analytical Chemistry Laboratory, Wiley, 1995

Course language:

Notes:

Course assessment
Total number of assessed students: 385

A	B	C	D	E	FX
28.05	31.95	27.01	8.05	4.16	0.78

Provides: doc. RNDr. Katarína Reiffová, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/BZj/19	**Course name:** Animal Biology
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 4	
Recommended semester/trimester of the course:	
Course level: I.	
Prerequisities: ÚBEV/CYT1/15,ÚBEV/PMZ/10,ÚBEV/FZ1/10,ÚBEV/ZO1/03,ÚBEV/ZOO1/03,ÚBEV/HIS1/15	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment

Total number of assessed students: 10

A	B	C	D	E	FX
10.0	20.0	30.0	20.0	20.0	0.0

Provides:
Date of last modification: 10.02.2020
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/FZ1/10	**Course name:** Animal Physiology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 3 **Per study period:** 42 / 42
Course method: present

Number of ECTS credits: 7

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚBEV/HIS1/15 and leboÚBEV/HISE1/15

Conditions for course completion:
Writen testing from practicals and oral examination

Learning outcomes:
To provide students with basic knowledge about physiological processes in animals on different levels of phylogenesis and with the principles of their control, aimed to secure the inner integrity of the animal and to its adaptation to the environment.

Brief outline of the course:
The physiology of blood and hemopoietic organs. Physiology of respiration. Heart and circulatory physiology. Physiology of the gastrointestinal tract. The functions of liver. Energetic metabolism and physiology of nutrition. Water and mineral household of the organism. Physiology of the endocrine secretion. Physiology of reproduction. Physiology of excretion.General neurophysiology. Functions of neurons and neuronal networks. Sensory and motoric functions of CNS. Associative functions of CNS. Functions of the vegetative nervous system. Physiology of muscle contraction and active motion. Work physiology. Sensory physiology

Recommended literature:
Varder, A. J., Sherman, J. H., Luciano, D. S.: The mechanisms of body functions, McGraw-Hill, 1990
Schmidt, R. F., Thews, G.: Human Physiology, Springer-Verlag, 1989
R.W.Hill, R.Wyse, M.Anderson : Animal Physiology, Sinauer Assoc., 2008

Course language:

Notes:

Course assessment
Total number of assessed students: 1408

A	B	C	D	E	FX
8.52	16.26	22.09	24.29	23.01	5.82

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: 29.06.2021
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/ SBPa/15	**Course name:** Bachelor Thesis Seminar
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 4	
Recommended semester/trimester of the course: 5.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 144	

abs	n
99.31	0.69

Provides:
Date of last modification:
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/ SBPb/15	**Course name:** Bachelor Thesis Seminar
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 4	
Recommended semester/trimester of the course: 6.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 144	

abs	n
94.44	5.56

Provides:
Date of last modification:
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BPO/14	**Course name:** Bachelor Thesis and its Defence

Course type, scope and the method:
Course type:
Recommended course-load (hours):
Per week: Per study period:
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course:

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 270

A	B	C	D	E	FX
50.0	28.15	15.93	3.7	1.85	0.37

Provides:

Date of last modification: 02.12.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ SMP/10	**Course name:** Basic statistics for sciences

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 1 / 2 **Per study period:** 14 / 28
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Given on the basis of partial examination and written exam.

Learning outcomes:
Understanding basics of descriptive statistics used in sciences.

Brief outline of the course:
• Data types. Frequencies.
• Measures of location and variability. Quantiles.
• Basic probability distributions.
• Point and interval estimators.
• Testing of basic statistical hypotheses. Power of tests.
• Measuring the strength of a dependence.

Recommended literature:
• Wonnacott, Wonnacott: Introductory Statistics, Wiley 1977
• Statsoft's Electronic Statistics Textbook, 2014

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 144

A	B	C	D	E	FX
7.64	9.72	13.19	19.44	35.42	14.58

Provides: prof. RNDr. Ivan Žežula, CSc.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ BCHU/03	**Course name:** Biochemistry
Course type, scope and the method: **Course type:** Lecture **Recommended course-load (hours):** **Per week:** 3 **Per study period:** 42 **Course method:** present	
Number of ECTS credits: 5	
Recommended semester/trimester of the course: 3.	
Course level: I.	
Prerequisities: ÚCHV/VCHU/10 and leboÚCHV/VCHU/15 and leboÚCHV/VACH/10 and leboÚCHV/VCHU/14	
Conditions for course completion: test + oral examination	
Learning outcomes: The aim of biochemistry teaching is to acquire knowledge in the field of living organisms on the basis of their molecular structure and metabolism.	
Brief outline of the course: 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 Photosyntesis 10. The Calvine 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	
Recommended literature: Škárka: Biochémia. Alfa, 1992 Voet a Voetová: Biochemie. Victoria Publishing, Praha, 1994 Stryer, L.: Biochemistry, W.H. Freeman and Company, New York, 1988	
Course language:	
Notes:	

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

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ PBC2/99	**Course name:** Biochemistry Practical

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 4 **Per study period:** 56
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
2 written tests
Protocols + 75 % continuous evaluation.

Learning outcomes:
To allow students to get practical experience in experimental techniques and methods, currently used in a biochemical research: UV/VIS spectrophotometry, thin layer chromatography (TLC), gel electrophoresis, isolation of macromolecules and substances from biological materials and their quantitative and qualitative determination.

Brief outline of the course:
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 Km and Vmax for urease. Isolation and detection of nucleic acids.

Recommended literature:
Sedlák, Danko, Varhač, Paulíková, Podhradský: Practical exercises from biochemistry, 2007, http://kosice.upjs.sk/~kbch/document.php?name=pbc&lang=sk

Course language:

Notes:

Course assessment
Total number of assessed students: 847

A	B	C	D	E	FX
57.62	25.62	10.27	4.6	1.65	0.24

Provides: prof. RNDr. Mária Kožurková, CSc., RNDr. Nataša Tomášková, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BFP1/99	**Course name:** Biophysical principles of physiological processes

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:
Oral examination.

Learning outcomes:
To provide the students with knowledge of basic biophysical principles of physiological processes in animals

Brief outline of the course:
Fundamentals of information theory and theory of regulation. basic principles of thermodynamics. Energetics and kinetics of muscle contraction. Properties of biological membranes. Biophysical mechanisms of cell excitability. Biomechanics of bones and joints. Physical principles of blood circulation, heart and lungs. Physiological acoustics. Physical principles of light perception. Biological effects of ionizing radiation.

Recommended literature:
Berne, L.: Principles of physiology. Mosby, 1990

Course language:

Notes:

Course assessment
Total number of assessed students: 196

A	B	C	D	E	FX
8.67	20.41	23.47	14.8	21.94	10.71

Provides: prof. RNDr. Beňadik Šmajda, CSc., RNDr. Terézia Kisková, PhD.

Date of last modification: 29.06.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BS1/03	**Course name:** Biostatistics

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Written test after the 7th week.
Final test (solution of examples + theoretical knowledge)

Learning outcomes:
To provide the students with knowledge on basic principles of statistic methods used in biology and their scope of application in statistical evaluation of experimental results, and with the principles of the design of experiments, as well.

Brief outline of the course:
Sources and theoretical background of biostatistics. Basic principles of the probability theory. Descriptive statistics: variables, measures of mean value and variability of data. Theoretical and empirical distributions. Experimental sampling from normal distributions. Testing of hypotheses. One-way and multiple analysis of variance. Tests for multiple comparisons. Regression analysis. Correlations. Non-parametrical methods. Time series. Analysis of quantitative data.

Recommended literature:
Hassard, T. H.: Understanding biostatistics. Mosby Year Book, 1991
Snedecor,G.W., Cochran,W.G.: Statistical methods. The Iowa state university, Ames, 1972.
R.Forthofer, E.S.Lee, M.Hernandez: Biostatistics. A guide to design, analysis and dicovery. Elsevier, Amsterdam, 2007

Course language:

Notes:

Course assessment
Total number of assessed students: 212

A	B	C	D	E	FX
4.25	8.49	16.98	25.0	33.02	12.26

Provides: prof. RNDr. Beňadik Šmajda, CSc.

Date of last modification: 01.07.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BO1/03	**Course name:** Botany I

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Introduction to biology of lower plants.

Brief outline of the course:
Morphology, cytology, ecology, evolution and taxonomy of all main groups of lower plants. Cyanobacteria and algae (Cyanophyta, Prochlorophyta,Glaucophyta, Rhodophyta, Heterocontophyta, Haptophyta, Cryptophyta, Dinophyta, Euglenophyta, Chlorarachniophyta, Chlorophyta). Slime moulds(Plasmodiophoromycota, Dictyosteliomycota, Acrasiomycota, Labyrinthulomycota). Fungi (Oomycota, Hyphochytriomycota, Chytridiomycota, Zygomycota, Ascomycota, Basidiomycota). Lichens. Bryophytes.
Literature:
Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd.

Recommended literature:
Bačkor, M.: Základy systému nižších rastlín I. (sinice, riasy a slizovky). UPJŠ, Košice 2002;
Deacon, J.W. (1998) Modern Mycology. Blackwell Science Ltd.
Van den Hoek, C. a kol. 1995: Algae, an introduction to phycology,
Záhorovská E. a kol.: Systém a evolúcia nižších rastlín. UK Bratislava 1998

Course language:

Notes:

Course assessment
Total number of assessed students: 1761

A	B	C	D	E	FX
13.91	19.48	25.44	20.05	18.63	2.5

Provides: prof. RNDr. Martin Bačkor, DrSc., RNDr. Michal Goga, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BOT1/03	**Course name:** Botany II

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities:

Conditions for course completion:
Practical and theoretical exam.

Learning outcomes:
To obtain of survey in knowledge and methods in systematics of tracheophytes.

Brief outline of the course:
History and present time of plant systematics. Approaches to plant classification. Principles of cladistics and molecular taxonomy. Tracheophytes, clades of lycophytes, ferns and allies. Seed plants. Gymnosperms and their evolution: cycads, ginkgos, conifers, gnetophytes. Angiosperms. Evolution and general description. Basal clades and Magnoliid clade. Monocots. "Basal tricolpates" and Caryophyllid clade. Rosid and asterid clades of tricolpates.
Practices are devoted to study of the most important families of tracheophytes. Fossil evidence of ferns and allies from Palaeozoic age. Tropical a subtropical flora. Ferns. Practical study of conifers. Selected families of angiosperms. (Magnoliaceae, Araceae, Liliaceae, Amaryllidaceae, Cyperaceae, Poaceae, Ranunculaceae, Papaveraceae, Caryophyllaceae, Euphorbiaceae, Violaceae, Fabaceae, Rosaceae, Betulaceae, Brassicaceae, Boraginaceae, Plantaginaceae, Lamiaceae, Apiaceae, Asteraceae). Study of other seed plants, plant identification according to key.

Recommended literature:
Mártonfi P.: Systematika cievnatých rastlín, 2. vydanie. - ES UPJŠ, Košice, 2006.
Mártonfi P.: Systematika cievnatých rastlín. - ES UPJŠ, Košice, 2003.
Judd W. S., Campbell Ch. S., Kellogg E. A. & Stevens P. F., Donoghue M. J.: Plant Systematics. A phylogenetic Approach, 2nd ed. - Sinauer Associates, Sunderland, 2002.
Dostál J., Červenka M.: Veľký kľúč na určovanie rastlín I. a II. - SPN, Bratislava, 1991 a 1992.

Course language:

Notes:

Course assessment Total number of assessed students: 1547					
A	B	C	D	E	FX
11.18	12.73	17.52	19.84	24.05	14.67
Provides: prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčik, PhD.					
Date of last modification: 03.05.2015					
Approved:					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/CHV1/99	**Course name:** Chemical calculations

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Short written tests.
Written test.

Learning outcomes:
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.

Brief outline of the course:
Expression of the clear matter amount and the system composition. Stoichiometric formula. Material bilances for preparation, dissolving and mixing of solutions, and for separating of mixtures. Material bilances for combined processes. Chemical equations and material bilances in the systems with chemical processes. Acid-Base equilibrium and the pH calculations. The solubility product and solubility.

Recommended literature:
Potočňák I.: Chemické výpočty vo všeobecnej a anorganickej chémii (skriptum), PF UPJŠ, Košice, 2006.

Course language:

Notes:

Course assessment
Total number of assessed students: 1440

A	B	C	D	E	FX
22.5	19.44	24.1	20.21	12.99	0.76

Provides: RNDr. Martin Vavra, PhD., doc. RNDr. Miroslav Almáši, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJKKA/07	**Course name:** Communicative Competence in English

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: combined, present

Number of ECTS credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
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.

Learning outcomes:
Uplatnenie a aktívne používanie svojich teoretických vedomostí v praktických komunikačných situáciách. Zdokonalenie jazykových vedomostí a zručností študenta, rečovej, pragmatickej a vecnej kompetencie, predovšetkým zlepšujú komunikáciu, schopnosťprijímať a formulovať výpovede, efektívne vyjadrovať svoje myšlienky ako aj orientovať sa v obsahovom pláne výpovede. Precvičovanie rečových intencií kontaktných (napr. pozdravy, oslovenia, pozvanie, oslovenie), informatívnych (napr. získavanie a podávanie informácií, vyjadrenie priestorových a časových vzťahov), regulačných (napr. prosba, poďakovanie, zákaz, pochvala, súhlas, nesúhlas) a hodnotiacich (napr. vyjadrenie vlastného názoru, stanoviska, želania, emócií). Výsledkom budovania praktickej jazykovej kompetencie majú byť vedomosti a zručnosti zodpovedajúce požiadavkám a kritériám dokumentu Spoločný európsky referenčný rámec pre vyučovanie jazykov.

Brief outline of the course:
Rodina, jej formy a problémy
Vyjadrovanie pocitov a dojmov
Dom, bývanie a budúcnosť
Formy a dialekty v anglickom jazyku
Život v meste a na vidieku
Kolokácie a idiomy, zaužívané slovné spojenia
Prázdniny a sviatky vo svete

Životné prostredie a ekológia
Výnimky zo slovosledu
Frázové slovesá a ich použitie
Charakteristiky neformálneho diškurzu

Recommended literature:

www.bbclearningenglish.com
McCarthy M., O'Dell F.: English Vocabulary in Use, Upper-Intermediate. CUP, 1994.
Misztal M.: Thematic Vocabulary. SPN, 1998.
Fictumova J., Ceccarelli J., Long T.: Angličtina, konverzace pro pokročilé. Barrister and Principal, 2008.
Peters S., Gráf T.: Time to practise. Polyglot, 2007.
Jones L.: Communicative Grammar Practice. CUP, 1985.
Alexander L.G.: Longman English Grammar. Longman, 1988.

Course language:
English language, B2 level according to CEFR

Notes:

Course assessment
Total number of assessed students: 260

A	B	C	D	E	FX
40.38	22.31	18.85	8.85	6.54	3.08

Provides: Mgr. Barbara Mitríková, Mgr. Zuzana Naďová

Date of last modification: 11.02.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJGA/07	**Course name:** Communicative Grammar in English

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: combined, present

Number of ECTS credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
Active classroom participation (max. 2x90 min. absences tolerated). 2 test (5th/6th and 12/13th week), no retake. Final evaluation- average assessment of tests. Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less.

Learning outcomes:

Brief outline of the course:

Recommended literature:
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
www.bbclearningenglish.com
ted.com/talks

Course language:

Notes:

Course assessment
Total number of assessed students: 406

A	B	C	D	E	FX
39.66	18.97	16.75	8.62	5.91	10.1

Provides: Mgr. Lenka Klimčáková

Date of last modification: 14.09.2019

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KGER/ NJKG/07	**Course name:** Communicative Grammar in German Language

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 54

A	B	C	D	E	FX
59.26	11.11	9.26	3.7	9.26	7.41

Provides: Mgr. Blanka Jenčíková

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ PMZ/10	**Course name:** Comparative Animal Morphology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 1 **Per study period:** 28 / 14
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Lectures and practical exercises, original drawing of some parts of animal body or it derivates, examination.

Learning outcomes:

Brief outline of the course:

Recommended literature:
Kardong, K. V., 2002: Vertebrates. Comparative anatomy, function, evolution. 3rd ed., Mc-Graw-Hill, New York.
Pough, F. H., Janis, Ch. M., Heiser, J. B., 2008: Vertebrate Life. Prentice Hall, Inc., 752 pp. 8th edition.
Ruppert, E. E., Fox, R. S., & Barnes, R. D., 2004: Invertebrate zoology: a functional evolutionary approach. Belmont, CA: Thomas-Brooks/Cole.

Course language:

Notes:

Course assessment
Total number of assessed students: 1970

A	B	C	D	E	FX
17.36	18.88	24.77	21.78	12.28	4.92

Provides: doc. RNDr. Andrej Mock, PhD., RNDr. Andrea Parimuchová, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/OPR/12	**Course name:** Conservation Biology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 0 **Per study period:** 28 / 0
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 3.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Examination.

Learning outcomes:
The main goal of the subject is to introduce term biodiversity, principal threats and conservation of species, populations, communities and ecosystems.

Brief outline of the course:
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.

Recommended literature:
Primack R.B., 2010: Essentials of conservation biology. Sinauer Associates, 1-603

Course language:

Notes:

Course assessment
Total number of assessed students: 694

A	B	C	D	E	FX
74.78	14.7	7.2	2.16	0.43	0.72

Provides: prof. RNDr. Ľubomír Kováč, CSc.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/ PPR/15	**Course name:** Cultivation of experimental plants
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 0 / 2 **Per study period:** 0 / 28 **Course method:** present	
Number of ECTS credits: 3	
Recommended semester/trimester of the course: 4., 6.	
Course level: I.	
Prerequisities:	
Conditions for course completion: Students will gain practical skills concerning cultivation of experimental plants.	
Learning outcomes: Practical skills concerning cultivation of experimental plants.	
Brief outline of the course: In vitro techniques, hydroponics, sowing and cultivation of plants in a field.	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 81	

abs	n
98.77	1.23

Provides: RNDr. Veronika Petruľová, PhD.	
Date of last modification: 12.02.2016	
Approved:	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚBEV/ CYT1/15	**Course name:** Cytology
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 3 / 2 **Per study period:** 42 / 28 **Course method:** present	
Number of ECTS credits: 6	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisities:	
Conditions for course completion: Practicals graduation (without absence); Two written tests graduation (min. 70 % fruitfulness of each); Oral examination	
Learning outcomes: To provide the students with knowledge of basic principles of cell microscopic and submicroscopic structure and function.	
Brief outline of the course: Lectures: 1.) Cell theory. Cell. 2.) Organization of living systems. 3.) Biological membranes. 4.) Transfer of substances across membranes. 5.) Cell wall of plant cells. 6.) Surface structures of cells. Extracellular matrix. Cell movement. 7.) Intercellular connections. 8.) Cytoskeleton. 9.) Cell nucleus. 10.) Mitochondria and cellular metabolism. 11.) Plastids and vacuoles. 12.) Ribosomes. Endoplasmic reticulum. Golgi apparatus. Lysosomes. 13.) Differentiation, aging and cell death. 14.) Pathological changes in cells. Exercises: 1.) Safety at work in a cytomorphological laboratory. Conditions for successful completion of exercises. 2.) Basics of optics. Origin and construction of the image with a magnifying glass and a microscope. 3.) Microscopic technique. 4.) Shape and size of cells. 5.) Principle of fluorescence and confocal microscopy. 6.) Control test. Vacuole. 7.) Cytoplasm movement. 8.) Nucleus and nucleolus. 9.) Cytoplasmic membrane. 10.) Osmotic processes. 11.) Cell inclusions. 12.) Cell walls of plant cells. 13.) Cell counting. 14.) Control test. Final evaluation.	
Recommended literature: Alberts, B.: Molecular Biology of the Cell. Garland Science, 2014	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 754

A	B	C	D	E	FX
11.54	19.89	32.63	20.03	15.25	0.66

Provides: doc. RNDr. Rastislav Jendželovský, PhD., RNDr. Zuzana Jendželovská, PhD., RNDr. Jana Vargová, PhD.

Date of last modification: 16.07.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ PFAJ4/07	**Course name:** English Language of Natural Science

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Distant form of study (Online through MS teams) - based on the sylabus
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 thorugh 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.

Learning outcomes:
Enhancement of students' language skills (speaking, writing, reading and listening comprehension) in English for specific purposes and development of students' language competence (familiarization with selected phonological, lexical and syntactic phenomena), improvement of students' pragmatic competence (familiarization with selected language functions) and improvement of presentation skills at B2 level (CEFR) with focus on terminology of English for natural science.

Brief outline of the course:
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-intermetdiate, 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

Course language:

Notes:

Course assessment

Total number of assessed students: 2744

A	B	C	D	E	FX
38.16	25.4	16.65	9.73	7.87	2.19

Provides: Mgr. Lenka Klimčáková, Mgr. Viktória Mária Slovenská, Mgr. Zuzana Naďová

Date of last modification: 14.02.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ EF1/03	**Course name:** Experimental methods in physiology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 1 / 2 **Per study period:** 14 / 28
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Recognition of practical skills.
Oral and practical examination.

Learning outcomes:
To explain the basic rules of breeding of laboratoty animals and of the criteria of correct handling of animals during housing and in experiment

Brief outline of the course:
The experimental animal, the laboratory animal,biomodels. Basics of animal breeding. Biological traits of commonly used laboratory animals. Genetics of lab. animals. Microbiological criteria of animal breeding. The influence of internal and external factors on health state and reactivity of animals: genetic determinants, sex, social and behavioral factors. The influence of physical factors of housing (temperature, humidity, light, noise, transport). Design of experiments.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 175

A	B	C	D	E	FX
48.0	31.43	16.0	3.43	0.57	0.57

Provides: RNDr. Ján Gálik, CSc.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ETB1/99	**Course name:** Experimental techniques in Biology

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 4 **Per study period:** 56
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚBEV/CYT1/15

Conditions for course completion:

Learning outcomes:
To provide the students with the knowledge of basic experimental techniques in biology.

Brief outline of the course:
Manipulation with laboratory animals. Narcotizing of the animals. Operating techniques. Basic research methods.

Recommended literature:
Zutphen, L. F. M., Baumans, V., Beynen, A. C.: Principles of Laboratory Animal Science. Elsevier, Amsterdam, 1993

Course language:

Notes:

Course assessment
Total number of assessed students: 201

A	B	C	D	E	FX
48.76	14.43	14.43	4.98	15.92	1.49

Provides: RNDr. Ján Košuth, PhD., RNDr. Anna Alexovič Matiašová, PhD., RNDr. Terézia Kisková, PhD., Mgr. Vladislav Kolarčik, PhD., doc. RNDr. Juraj Ševc, PhD., doc. RNDr. Rastislav Jendželovský, PhD., RNDr. Natália Pipová, PhD., doc. RNDr. Monika Kassayová, CSc., RNDr. Jana Vargová, PhD.

Date of last modification: 07.02.2017

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/TCZ/03	**Course name:** Fieldwork from zoology

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 5d
Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Practical observation of morphology of vertebrates.

Brief outline of the course:
Systematic and phylogenetic relationships of vertebrate. Review of important groups of fishes, amphibians, reptiles, bidrs and mammals - observation, and laboratory work.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 961

abs	n
99.38	0.62

Provides: RNDr. Peter Ľuptáčik, PhD., doc. RNDr. Andrej Mock, PhD., doc. RNDr. Marcel Uhrin, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ TCB1/03	**Course name:** Fieldworks from Botany

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 5d
Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Study of methods for identification and determination of common central-europaean plants.

Brief outline of the course:
Plant identification in different habitats. Plant determination. Floristic records.

Recommended literature:
Dostál J., Červenka M.: Veľký kľúč na určovanie rastlín I. a II. - Veda, Bratislava 1991 a 1992.
Kubát K. (ed.): 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.): Veľká kniha rastlín. - Bratislava (various editions).

Course language:

Notes:

Course assessment
Total number of assessed students: 1252

abs	n
99.92	0.08

Provides: prof. RNDr. Pavol Mártonfi, PhD., prof. RNDr. Martin Bačkor, DrSc., Mgr. Vladislav Kolarčik, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/VACH/10	**Course name:** General and Inorganic Chemistry

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 367

A	B	C	D	E	FX
20.16	25.61	28.61	18.8	5.99	0.82

Provides: doc. RNDr. Mária Reháková, CSc., doc. RNDr. Zuzana Vargová, Ph.D.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/VB1/01	**Course name:** General botany

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 2 **Per study period:** 42 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚBEV/CYT1/15

Conditions for course completion:

Learning outcomes:
This subject enables to understand the structure and function of plant cells, tissues and organs and to enhance student's ability to describe the biological role of plants for life on earth.

Brief outline of the course:
The structure and function of plant cells and tissues. Plant organs, their structure, function, shape and organization. Plant reproduction and grounding in embryology. Basic information and terms that are necessary for understanding of relationship between internal structure and functions of organs and functions plant organism en bloc.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 1038

A	B	C	D	E	FX
17.53	27.26	28.9	15.61	8.0	2.7

Provides: prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčik, PhD., PaedDr. Andrea Lešková, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/GE1/10	**Course name:** Genetics

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 3 **Per study period:** 42 / 42
Course method: present

Number of ECTS credits: 7

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚBEV/MB1/01 and leboÚBEV/MOB1/03 and leboÚBEV/MOB1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 1434

A	B	C	D	E	FX
18.97	16.11	16.04	13.74	19.53	15.62

Provides: prof. RNDr. Eva Čellárová, DrSc., RNDr. Katarína Bruňáková, PhD., RNDr. Miroslava Bálintová, PhD., RNDr. Linda Petijová, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ LR1/03	**Course name:** Healing Plants

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To provide the students with healing principles of plants and production of drug.

Brief outline of the course:
Medicinal Plants, impprtance, collection. basic terms. Drugs and their effects of drug. Active substances Alcaloids, Glycosides, Flavonoids, Hormons, Enzymes, Essential oils. Centers of origin of medicinal plants. Cultivation and and post-harvest technology of Medicinal Plants, storage. Overview of selected representatives of medicinal plants of the families Papaveraceae, Droseraceae, Hypericaceae, Rosaceae, Malvaceae, Ericaceae, Scrophulariaceae, Plantaginaceae, Lamiaceae, Caprifoliaceae, Apiaceae, Valerianaceae, Asteraceae, Equisetaceae, Ginkgoaceae. Toxic plants.

Recommended literature:
Pahlow M.: Healing plants. New York 1993

Course language:

Notes:

Course assessment
Total number of assessed students: 403

A	B	C	D	E	FX
27.05	25.31	19.85	11.17	8.68	7.94

Provides: RNDr. Matej Dudáš, PhD.

Date of last modification: 21.02.2019

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/HIS1/15	**Course name:** Histology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 2 **Per study period:** 42 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚBEV/CYT1/15,ÚBEV/ACL/03

Conditions for course completion:
Oral examination

Learning outcomes:
To provide the students with knowledge of basic morphology of tissues of animals.

Brief outline of the course:
Epithelium and glands. Connective tissue. Cartilage. Bone. Muscle. Nervous Tissue.Blood and hemopoiesis. Circulatory system. Lymphoid system. Endocrine system.Integument. Respiratory system. Digestive system. Urinary system. Female reproductive system. Male reproductive system. Special senses. Nervous system

Recommended literature:
Michel H. Ross, Wojciech Pawlina: Histology, Lippincott Wiliams & Wilkins, 2011
Renate Lullmann-Rauch: Histologie, Grada, 2012
Gartner, L.P., Hiatt, J.L.: Color Texbook of Histology. W.B. Saunders Company, Philadelphia, 1997
Juanqueira, L.C., Carneiro, J., Kelley, R.O.: Basic Histology. Prentice Hall International Inc., Apleton & Lange, 1997

Course language:

Notes:

Course assessment
Total number of assessed students: 195

A	B	C	D	E	FX
28.21	14.36	22.56	14.87	14.87	5.13

Provides: doc. RNDr. Zuzana Daxnerová, CSc., doc. RNDr. Juraj Ševc, PhD., RNDr. Anna Alexovič Matiašová, PhD.

Date of last modification: 28.06.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/SBD/08	**Course name:** History of Biology Seminar

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Introduction to history of science, especially biology

Brief outline of the course:
Introduction to history of biology (and related scientific areas) from ancient times, through middle ages to present.

Recommended literature:
Magner, L.N. (2002) A history of the life sciences. Marcel Dekker, Inc.

Course language:

Notes:

Course assessment
Total number of assessed students: 398

A	B	C	D	E	FX
97.24	2.76	0.0	0.0	0.0	0.0

Provides: prof. RNDr. Martin Bačkor, DrSc.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ ACL/03	**Course name:** Human Anatomy

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Written examination

Learning outcomes:
Anatomic systems of man.

Brief outline of the course:
Anatomic terminology, skeleton and muscles, gastrointestinal system, respiratory system, circulatory and lymphatic system, urogenital system,sensory organs, nervous system, ontogenesis of man.

Recommended literature:
Kahle, W., Leonhardt, H., Platzer, W. : Color Atlas and Textbook of Human Anatomy in 3 Volumes : Volume 1 : Locomotor System, Volume 2: Internal Organs and Volume 3: Nervous System and Sensory Organs
Thieme Medical Publishers, Inc. New York, 1993
Anne M. R. Agur : Grant´s atlas of anatomy. Williams et Wilkins, USA, 1991

Course language:

Notes:

Course assessment
Total number of assessed students: 1819

A	B	C	D	E	FX
5.06	16.55	27.65	25.62	22.1	3.02

Provides: doc. RNDr. Juraj Ševc, PhD., RNDr. Anna Alexovič Matiašová, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/VEK1/03	**Course name:** Introduction to Ecology

Course type, scope and the method:
Course type: Lecture
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:
Fundamental parameters and relations in ecological science.

Brief outline of the course:
Ecological factors and relations in environment (air, water, soil); influence of ecological factors on individuals (morphological adaptations, behavioral reactions); populations and communities; ecosystems (impact assessment); conservation and biodiversity.

Recommended literature:
Begon, M., Harper, J. L., Townsend, C. L.: Ecology: individuals, populations, and communities. Blackwell Sci. Publ., 1990

Course language:

Notes:

Course assessment
Total number of assessed students: 1655

A	B	C	D	E	FX
20.54	16.74	24.65	17.7	12.15	8.22

Provides: RNDr. Natália Raschmanová, PhD.

Date of last modification: 07.02.2019

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ULP/08	**Course name:** Introduction to Laboratory Work

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 18s
Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 444

A	B	C	D	E	FX
65.77	26.35	6.08	1.58	0.0	0.23

Provides: RNDr. Martin Vavra, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: Dek. PF UPJŠ/USPV/13	**Course name:** Introduction to Study of Sciences
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week: Per study period:** 12s / 3d **Course method:** present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 1734

abs	n
86.51	13.49

Provides: doc. RNDr. Marián Kireš, PhD.	
Date of last modification: 25.09.2019	
Approved:	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KKF/LB/07	**Course name:** Latin for Students of Biology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 1 / 1 **Per study period:** 14 / 14
Course method: present

Number of ECTS credits: 3

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 556

A	B	C	D	E	FX
20.32	19.24	24.82	14.03	16.37	5.22

Provides: Mgr. Zuzana Krokosová

Date of last modification: 17.05.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ MTB/13	**Course name:** Mathematics for biologists
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 2 / 2 **Per study period:** 28 / 28 **Course method:** present	
Number of ECTS credits: 5	
Recommended semester/trimester of the course: 2.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes: Short introduction to mathematics, mathematical problem solving strategies and their applications to solving problems in biology and other sciences.	
Brief outline of the course: 1. Basic terms 2. Geometry in the plane (vectors, lines in the plane and their representations) 3. Systems of linear equations (linear equation and inequality, system of linear equations, Gaussian elimination) 4. Functions (monotonicity, local extrema, function composition, inverse function, elementary functions and their properties) 5. Combinatorics (binomial theorem, combinations and permutations without / with repetition, inclusion-exclusion principle) 6. Sequences and series (monotonicity and boundedness, recurrent sequence, geometric series) 7. Limit (limit of a sequence, limit of function, convergence, divergence, methods for computing limits, continuity) 8. Derivatives (sum, product, quotient and chain rule, derivatives of elementary functions, Taylor polynomial, analysis of functions) 9. Integrals (indefinite integral, integration methods: by substitution, by parts, by partial fractions; definite integral) 10. Ordinary differential equations (first order separable ODE, first order linear ODE)	
Recommended literature: E. Bohl, Mathematik in der Biologie, Springer, Berlin Heidelberg, 2006. D. Studenovská, T. Madaras, S. Mockovčiak: Zbierka úloh z matematiky pre nematematické odbory, UPJŠ 2006. D. Studenovská, T. Madaras: Matematika pre nematematické odbory, UPJŠ 2006.	
Course language: Slovak	
Notes:	

Course assessment
Total number of assessed students: 511

A	B	C	D	E	FX
12.72	12.52	16.05	18.0	30.14	10.57

Provides: RNDr. Igor Fabrici, Dr. rer. nat., RNDr. Jana Borzová, PhD., RNDr. Katarína Čekanová, Mgr. Miriam Kleinová

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/MKV/15	**Course name:** Mikrobiológia a základy virológie

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities: ÚBEV/CYT1/15

Conditions for course completion:
Attendance of practicals (at least 90%), 2 written examinations during semester, final oral examination

Learning outcomes:
Students will obtain a basic informations on viruses, prokaryotic and eukaryotic microorganisms, their cytology, physiology, genetics, ecology, classification, and importance . Information on basic methods for studying microorganisms will be provided.

Brief outline of the course:
Viruses, prokaryotic and eukaryotic microorganisms, their cytology, physiology, genetics, ecology, classification. The importance of microorganisms for humans and environment.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 1406

A	B	C	D	E	FX
22.4	13.58	18.28	19.63	21.76	4.34

Provides: doc. RNDr. Peter Pristaš, CSc., RNDr. Mária Piknová, PhD., RNDr. Mariana Kolesárová, PhD., RNDr. Lenka Maliničová, PhD.

Date of last modification: 02.02.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/MOB1/15	**Course name:** Molecular Biology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 3 **Per study period:** 42 / 42
Course method: present

Number of ECTS credits: 7

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚCHV/BCHU/03

Conditions for course completion:
Oral examination.

Learning outcomes:
To provide the students with knowledge of molecular basis of inheritance and control of gene expression and development.

Brief outline of the course:
Structure and properties of information macromolecules. Molecular mechanisms of DNA replication and repair, transcription and translation. Prokaryotic and eukaryotic genome. Control of gene expression in prokaryotes and eukaryotes. Control of cell cycle.

Recommended literature:
Lodish, H., Baltimore, D., Berk, A. et al.: Molecular Cell Biology. Sci. Amer. Books Inc., W.H. Freeman and Company, New York, 1995
Myers, R.A.: Molecular Biology and Biotechnology. VCH Publishers Inc., New York, 1995

Course language:

Notes:

Course assessment
Total number of assessed students: 194

A	B	C	D	E	FX
25.26	19.59	19.07	15.98	17.01	3.09

Provides: doc. RNDr. Peter Pristaš, CSc., RNDr. Zuzana Jendželovská, PhD., RNDr. Ján Košuth, PhD., RNDr. Jana Vargová, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/MBGj/19	**Course name:** Molekular Biology and Genetics

Course type, scope and the method:
Course type:
Recommended course-load (hours):
Per week: Per study period:
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course:

Course level: I.

Prerequisities: ÚBEV/CYT1/15,ÚBEV/MOB1/15,ÚBEV/GE1/10

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 33

A	B	C	D	E	FX
39.39	24.24	9.09	12.12	12.12	3.03

Provides:

Date of last modification: 10.02.2020

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/OCHB/10	**Course name:** Organic Chemistry

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 1 **Per study period:** 42 / 14
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚCHV/VACH/10

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:
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.
4. Organická chémia, Pavol Zahradník, Mária Mečiarová, Peter Magdolen, Univerzita Komenského v Bratislave, 2019, ISBN: 978-80-223-4589-7.

Course language:

Notes:

Course assessment
Total number of assessed students: 259

A	B	C	D	E	FX
22.78	22.39	31.66	18.15	4.63	0.39

Provides: RNDr. Slávka Hamuľaková, PhD., doc. RNDr. Miroslava Martinková, PhD., RNDr. Mária Vilková, PhD.

Date of last modification: 30.08.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/PAR1/03	**Course name:** Parasitology I.

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 5.

Course level: I., II., III.

Prerequisities: ÚBEV/ZOM/04 and leboÚBEV/ZO1/03 and leboÚBEV/ZO1/04

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 441

A	B	C	D	E	FX	N	P
51.93	19.95	12.7	10.43	3.17	0.68	0.0	1.13

Provides: RNDr. Viktória Majláthová, PhD., RNDr. Igor Majláth, PhD.

Date of last modification: 05.07.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ FCH1/02	**Course name:** Physical Chemistry for Biological Sciences

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 2 **Per study period:** 42 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 3.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Test
Exam

Learning outcomes:
The introduction into the fundamental knowledge of selected parts of physical chemistry with emphasis on the utilization of these knowledges for the study of physico-chemical properties of biomacromolecules and biological systems.

Brief outline of the course:
Description of macroscopic systems, energy and 1. law of thermodynamics, entropy and 2. law of thermodynamics, Gibbs energy and equilibrium state, chemical potential, binding constants of the ligand-macromolecule interactions, biophysical applications of the thermodynamics. Solutions, electrolytic solutions, electrochemical equilibrium, electrodes, electrochemical potential. Statistical thermodynamics: the interpretation of energy, heat, entropy and information; the partition functions, biological applications of statistical thermodynamics, the conformational transitions in proteins and nucleic acids. Chemical reactions, chemical and biochemical kinetics, dynamics of the chemical reactions, kinetics of the enzymatical reactions, inhibition of the enzymes. Transport processes, molecular diffusion, membrane transport and its significance for the biological organisms.

Recommended literature:
1. P. Atkins and J. de Paula. Atkins's Physical Chemistry (9th Edition), Oxford University Press, 2010.
2. P. Atkins. Fyzikálna chémia (slovenský preklad 6. vydania), STU Bratislava, 1999.
3. P. Atkins, J. De Paula. Fyzikální chemie (český preklad 9. vydania), VŠCHT Praha, 2013
4. R.Chang. Physical Chemistry for the Biosciences, University Science Book, 2006.
5. D. Eisenberg and D. Crothers. Physical Chemistry with Applications to the Life Sciences, Benjamin/Cummings, 1979.
6. K. van Holde, W. Johnson and P. Ho. Principles of Physical Biochemistry, Prentice Hall, 1988.
7. D.T. Haynie. Biological Thermodynamics (2nd Edition), Cambridge University Press, 2008.

8. A.P.H. Peters. Concise Chemical Thermodynamics (3rd Edition), CRC Press, Taylor & Francis Group, 2010.
9. I. Tinoco, jr., K. Sauer, J.C. Wang, J.C. Puglisi, G. Harbison and D.Rovnyak. Physical Chemistry – Principles and Applications in Biological Sciences (5th Edition), Pearson, 2014.
10. A. Cooksy. Physical Chemistry- Thermodynamics, Statistical Mechanics, and Kinetics, Pearson, 2014.

Course language:

Notes:

Course assessment
Total number of assessed students: 100

A	B	C	D	E	FX
18.0	29.0	31.0	11.0	11.0	0.0

Provides: doc. Mgr. Daniel Jancura, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/FPB/13	**Course name:** Physics for Biologists

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities:

Conditions for course completion:
Participation at the lectures and trainings. Test.

Learning outcomes:
Completing the course students will get knowledge about the fundamental physical laws and will understand their relation to biologically oriented scientific fields.

Brief outline of the course:
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.

Recommended literature:
1. pdf presentation
2. A. Giambattista, B. M. Richardson, R. C. Richardson, Physics, McGraw-Hill, New York, 2010.
3. W. T. Griffith, J. W. Brosing, The physics of everyday phenomena, McGraw-Hill, New York, 2009.
4. D. Halliday, R. Resnick, J. Walker, Fyzika, Vutium a Prometheus, Praha, 2006.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 833

A	B	C	D	E	FX
14.77	17.41	26.53	22.45	17.53	1.32

Provides: RNDr. Gabriela Fabriciová, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ FG1/03	**Course name:** Phytogeography

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 1 **Per study period:** 28 / 14
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 3., 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Written work.
Exam.

Learning outcomes:
To obtain theoretical and practical knowledge from phytogeography.

Brief outline of the course:
History of phytogeography. Plants and environment. Chorology, area, area disjunctions, relics, endemites, vicariancy, floral elements. Main course of florogenesis since paleozoic to quaternary ages. Postglacial evolution of Slovak vegetation. Regional phytogeography of Earth. Vegetation geography: from tropical rainforests to tundras. Changes of earth vegetation and their study. Geographical origin of cultivated plants.
Practices: Fieldworks. Preparing of maps. Phytogeographical division of Slovakia. Students seminar works on phytogeography.

Recommended literature:
Hendrych R.: Fytogeografie. - SPN, Praha 1984.
Brown J. H., Lomolino M. V.: Biogeography. - Sinauer Associates, Sunderland, 1998.

Course language:

Notes:

Course assessment
Total number of assessed students: 374

A	B	C	D	E	FX
39.04	22.46	21.12	8.29	8.29	0.8

Provides: prof. RNDr. Pavol Mártonfi, PhD., Mgr. Vladislav Kolarčik, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/BRj/19	**Course name:** Plant Biology

Course type, scope and the method:
Course type:
Recommended course-load (hours):
Per week: Per study period:
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course:

Course level: I.

Prerequisities: ÚBEV/CYT1/15,ÚBEV/VB1/01,ÚBEV/FR1/10,ÚBEV/BO1/03,ÚBEV/BOT1/03

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 4

A	B	C	D	E	FX
0.0	50.0	50.0	0.0	0.0	0.0

Provides:

Date of last modification: 10.02.2020

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BTR1/06	**Course name:** Plant Biotechnology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 3 **Per study period:** 28 / 42
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 5.

Course level: I., II., III.

Prerequisities:

Conditions for course completion:
Active participation at the practicals, protocols, oral examination

Learning outcomes:
To gain theoretical and practical knowledge on plant tissue culture in vitro.

Brief outline of the course:
Definition and history of plant biotechnology. Aseptic techniques, culture conditions. Micropropagation, types of plant explant cultures used in biotechnology. Somatic hybridization and embryogenesis, direct and indirect organogenesis. Somaclonal varation. Secondary metabolites production, bioreactors, biotransformation, immobilization and elicitation. Genetic transformation, direct and indirect methods of transformation. Types of vectors, promotors, selection markers and reporter genes used in plant transformation. Germplasm storage, gene banks. Cryopreservation and slow growth method. Genetically modified organisms - metabolic engineering, genetic engineering, plants resistant to biotic and abiotic stresses, molecular farming, the role of tissue and organ specific plant promoters, plastome engineering, plant-based edible vaccines. RNA silencing, the application of microRNAs in plant biotechnology.

Recommended literature:
Abdin M.Z., Kiran U., Kamaluddin M., Ali A. (eds.): Plant Biotechnology: Principles and Applications. 2017, Springer Nature Singapore Pte Ltd., Singapore
Chawla H.S.: Introduction to Plant Biotechnology. 2009, third edition, Science Publisher, Enfield, USA
Periodicals and Internet sources

Course language:

Notes:

Course assessment
Total number of assessed students: 167

A	B	C	D	E	FX	N	P
40.72	18.56	13.17	8.98	10.78	2.99	0.0	4.79

Provides: RNDr. Miroslava Bálintová, PhD., prof. RNDr. Eva Čellárová, DrSc., RNDr. Jana Henzelyová, PhD.
Date of last modification: 02.02.2021
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/FR1/10	**Course name:** Plant Physiology

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 3 **Per study period:** 28 / 42
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚBEV/VB1/01

Conditions for course completion:
Active participation on practicals. Oral examen

Learning outcomes:
Overview of all important physiological processes in plant organisms.

Brief outline of the course:
Water in plan, mineral nutrition, photosynthesis, pholem transport, respiration, lipid biosynthesis, heterotrophy, metabolism of macronutrients, secondary metabolism, growth and development, plant hormones, photoreceptors, dormancy, germination, flowering, plant movements, stress physiology Lab practicals: Measurements of water potential, Quantitative analyses of nutrients in dust. Separation of assimilation pigments by TLC. Quantitative analyses of chlorophyll a and b. Biotest of cytokinins. Qualitative and quantitative analyses of sugars. HPLC separation of glucose and fructose. Measurements of respiration by selective electrode. Measurement of total nitrogen by Kjeldahl method. Qualitative analyses of proteins. Activity of some enzymes in potato and pea. Colour of anthocyanins at different pH. Measurement of silica level by distillation method. Germination of seeds.

Recommended literature:
Hopkins W.G. Huner N.P.A., Introduction to plant physiology. 3rd ed., Wiley, New York 2004

Course language:

Notes:

Course assessment
Total number of assessed students: 1813

A	B	C	D	E	FX
15.66	13.51	16.05	14.01	22.84	17.93

Provides: doc. RNDr. Peter Paľove-Balang, PhD.

Date of last modification: 26.03.2020

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/IOR/09	**Course name:** Plant Protection

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 6.

Course level: I., II.

Prerequisities: ÚBEV/VEK1/03

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 61

A	B	C	D	E	FX
6.56	27.87	24.59	19.67	21.31	0.0

Provides: prof. RNDr. Martin Bačkor, DrSc., Ing. Martin Suvák, PhD.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ ÚTVŠ/CM/13	**Course name:** Seaside Aerobic Exercise

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: Per study period: 36s
Course method: combined, present

Number of ECTS credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:
Conditions for course completion:
Attendance

Learning outcomes:
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.

Brief outline of the course:
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

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 41

abs	n
12.2	87.8

Provides: Mgr. Agata Horbacz, PhD.
Date of last modification: 15.03.2019
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ TVa/11	**Course name:** Sports Activities I.
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** combined, present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 1.	
Course level: I., I.II., II.	
Prerequisities:	
Conditions for course completion: Min. 80% of active participation in classes.	
Learning outcomes: Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.	
Brief outline of the course: 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, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess. In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness. In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 12859

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
87.01	0.08	0.0	0.0	0.0	0.04	8.1	4.77

Provides: Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Bc. Richard Melichar, Mgr. Petra Tomková, PhD.

Date of last modification: 13.05.2021

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVb/11	**Course name:** Sports Activities II.

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: combined, present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:
active participation in classes - min. 80%.

Learning outcomes:
Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.

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, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess.
In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness.
In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 11675

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
84.52	0.56	0.02	0.0	0.0	0.05	10.63	4.22

Provides: Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Bc. Richard Melichar, Mgr. Petra Tomková, PhD.
Date of last modification: 13.05.2021
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVc/11	**Course name:** Sports Activities III.

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: combined, present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:
min. 80% of active participation in classes

Learning outcomes:
Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.

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, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess.
In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness.
In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 7873

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.8	0.05	0.01	0.0	0.0	0.03	4.08	7.04

Provides: Mgr. Marcel Čurgali, Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Bc. Richard Melichar, Mgr. Petra Tomková, PhD.
Date of last modification: 13.05.2021
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/TVd/11	**Course name:** Sports Activities IV.

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 2 **Per study period:** 28
Course method: combined, present

Number of ECTS credits: 2

Recommended semester/trimester of the course: 4.

Course level: I., I.II., II.

Prerequisities:

Conditions for course completion:
min. 80% of active participation in classes

Learning outcomes:
Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.

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, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess.
In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness.
In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 5125

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
83.14	0.31	0.04	0.0	0.0	0.0	7.75	8.76

Provides: Mgr. Marcel Čurgali, Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., prof. RNDr. Stanislav Vokál, DrSc., Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Bc. Richard Melichar, Mgr. Petra Tomková, PhD.
Date of last modification: 13.05.2021
Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ SVK/01	**Course name:** Student Scientific Conference

Course type, scope and the method:
Course type:
Recommended course-load (hours):
Per week: Per study period:
Course method: present

Number of ECTS credits: 4

Recommended semester/trimester of the course: 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 289

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

Provides:

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ LKSp/13	**Course name:** Summer Course-Rafting of TISA River
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week: Per study period:** 36s **Course method:** present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion: Conditions for course completion: Attendance Final assessment: Raft control on the waterway (attended/not attended)	
Learning outcomes: Learning outcomes: Students have knowledge of rafts (canoe) and their control on waterway.	
Brief outline of the course: 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	
Recommended literature:	
Course language:	
Notes:	

Course assessment Total number of assessed students: 153	
abs	n
45.75	54.25
Provides: Mgr. Dávid Kaško, PhD.	
Date of last modification: 18.03.2019	
Approved:	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ KP/12	**Course name:** Survival Course
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week: Per study period:** 36s **Course method:** combined, present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion: Conditions for course completion: Attendance Final assessment: continuous fulfilment of all tasks within the course	
Learning outcomes: 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.	
Brief outline of the course: 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.	
Recommended literature:	
Course language:	
Notes:	

Course assessment Total number of assessed students: 393	
abs	n
44.53	55.47
Provides: MUDr. Peter Dombrovský, Mgr. Ladislav Kručanica, PhD.	
Date of last modification: 15.03.2019	
Approved:	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ MSB/10	**Course name:** System Biology Modeling
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 2 / 0 **Per study period:** 28 / 0 **Course method:** present	
Number of ECTS credits: 3	
Recommended semester/trimester of the course: 5.	
Course level: I.	
Prerequisities:	
Conditions for course completion: Solving intermediate motivating challenges given at the lectures. Exam.	
Learning outcomes: To provide an overview of the computational techniques and achievable results in the emerging field of systems biology.	
Brief outline of the course: Basics of molecular modeling. Physical structure of biopolymers. Foldamers, Levinthal paradox and Anfinsen principle. Essentials of molecular modeling and molecular simulations. Examples of procedures and their results. Biological polymers as sequences. Sequence comparision. Biological databases of sequences, acces and work. BLAS, FASTA, scoring matrices. Sugar code as an example of non-linear code. Examples of use and results. Molecular interaction networks, modeling of reaction kinetics. Application of graph-based approaches. Stochastic and deterministic modeling. Typical examples of use. Outlines and perspectives of systems biology and systems medicine. Chalenges of synthetic biology.	
Recommended literature: Alon, Uri. *An Introduction to Systems Biology: Design Principles of Biological Circuits*. 1st ed. Chapman and Hall/CRC, 2006. Campbell, A. Malcolm, and Laurie J. Heyer. *Discovering Genomics, Proteomics and Bioinformatics*. 2nd ed. Benjamin Cummings, 2006. Gabius, Hans-Joachim. *The Sugar Code: Fundamentals of Glycosciences*. Wiley-VCH, 2009.	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 200

A	B	C	D	E	FX
92.0	6.0	2.0	0.0	0.0	0.0

Provides: doc. RNDr. Jozef Uličný, CSc.

Date of last modification: 03.05.2015

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ ZOG1/03	**Course name:** Zoogeography

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 5.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Active participation in seminars.
Preparation of oral presentation to selected topic.
Semestral written test.
Oral examination.

Learning outcomes:
The main goal of the subject is to get knowledge on the basic reasons of recent distribution of the animals on the Earth, zoogeographic regionalization of the Earth´s surface and human influence on the faunal distribution in the history.

Brief outline of the course:
This course will review our current understanding of the patterns of animal distribution and the processes that influence distributions of species and their attributes. Zoogeography will integrate information on the historical and current ecology, genetics, and physiology of animals and their interaction with environmental processes (continental drift, climate) in regulating geographic distributions. The course will emphasize descriptive and analytical approaches useful in hypothesis testing in zoogeography and will illustrate applied aspects of zoogeography (e.g. refuge design in conservation).

Recommended literature:
Buchar, J., 1983: Zoogeografie. SPN Praha
Darlington, P.J., 1998: Zoogeography: The geographical distribution of animals. Krieger, USA
Lomolino M.V., Brown J.H., Riddle B. R., 2005: Biogeography. Sinauer Associates, 1-845
Plesník, P., Zatkalík, F., 1996: Biogeografia. Vysokoškolské skriptá, PríFUK Bratislava

Course language:

Notes:

Course assessment
Total number of assessed students: 948

A	B	C	D	E	FX
23.95	23.31	24.26	18.78	7.91	1.79

Provides: prof. RNDr. Ľubomír Kováč, CSc.

Date of last modification: 05.10.2017

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ZO1/03	**Course name:** Zoology I

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚBEV/PMZ/10

Conditions for course completion:

Learning outcomes:
Basis of Invertebrata taxonomy- Importance and function of chosen individual taxons. Phylogenetic relations.

Brief outline of the course:
Anatomy, morphology and development of separate groups of Invertebrates – especially Porifera, Cnidaria, Plathelminthes, Nemathelminthes, Mollusca, Anelida, Arthropoda, Echinodermata. Characteristic species.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 1170

A	B	C	D	E	FX
8.03	15.38	22.14	21.88	23.85	8.72

Provides: doc. RNDr. Ľubomír Panigaj, CSc., RNDr. Peter Ľuptáčik, PhD., RNDr. Andrea Parimuchová, PhD.

Date of last modification: 14.11.2016

Approved:

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ZOO1/03	**Course name:** Zoology II

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 2 / 2 **Per study period:** 28 / 28
Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚBEV/PMZ/10

Conditions for course completion:

Learning outcomes:
Fundamental information on taxonomy and morphology of vertebrates

Brief outline of the course:
Systematic and phylogenetic relationships of vertebrate. Review of important groups of fishes, amphibians, reptiles, bidrs and mammals.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 1036

A	B	C	D	E	FX
22.68	28.76	18.92	15.44	9.75	4.44

Provides: doc. RNDr. Marcel Uhrin, PhD., RNDr. Peter Ľuptáčik, PhD., RNDr. Monika Balogová, PhD.

Date of last modification: 03.05.2015

Approved: