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 credits: 5

Recommended semester/trimester of the course: 3.

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:

Course assessment
Total number of assessed students: 1652

A	B	C	D	E	FX
4.6	16.71	27.36	25.48	22.82	3.03

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPE/ ALP/06	**Course name:** Alternative Education
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 180

A	B	C	D	E	FX
66.11	30.56	0.56	1.11	0.56	1.11

Provides: Mgr. Katarína Petríková, PhD.
Date of last modification: 23.08.2017
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BDD/05	**Course name:** Biology of Children and Adolescents

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

Number of credits: 2

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:
Written test

Learning outcomes:
The aim of the subject is to gain the particular level of knowledge about human body and its development. It is neccessary for the understanding of specific biological characteristics of children and adolescents linked to development.

Brief outline of the course:
Human ontogenesis. Postnatal development. Age specific features of skeletal and muscalar, circulatory, respiratory, gastrointestinal and urinary systems. Reproductive system. Endocrine system. Nervous system. Age specifics of selected diseases and drug dependence arise. Human population and environment.

Recommended literature:
Drobný I., Drobná M.: Biológia dieťaťa pre špeciálnych pedagógov I. a II. Bratislava, PdF UK, 2000
Lipková V.: Somatický a fyziologický vývoj dieťaťa. Osveta Bratislava, 1980
Malá H., Klementa J.: Biológia detí a dorastu. Bratislava, SPN, 1989

Course language:

Course assessment
Total number of assessed students: 1402

A	B	C	D	E	FX
30.53	22.97	17.9	18.12	9.91	0.57

Provides: doc. RNDr. Monika Kassayová, CSc.

Date of last modification: 21.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/BKP/14	**Course name:** Bachelor Project

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
Submission of the bachelor project, the defense of the project and acceptance of its content by the supervisor.

Learning outcomes:

Brief outline of the course:

Recommended literature:
1. Scientific papers related to the topic of the bachelor project. 2. Directive No. 1/2011 of the rector UPJS in Košice.

Course language:

Course assessment
Total number of assessed students: 71

abs	n
100.0	0.0

Provides:

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/BKP/14	**Course name:** Bachelor Project

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
Submission of the bachelor project based on the assignments of the supervisor and acceptance of its content by the supervisor.

Learning outcomes:
Bachelor project prepared as a design of a bachelor thesis, as an evidence that student is able to process konwledge available in different resources, citate correctly and keep the layout correctly, prepare a presentation and share the results in front of experts.

Brief outline of the course:
The bachelor project is aimed at the selected problem of physics. Based on the assignments student carries out the following activities:
development of the project, formulation of the problem and methods, formal and graphical layout, correct citations and references, basic principles of presentation and its defence.

Recommended literature:
1. Resources (literature, papers) based on the project assignments.
2. Regulations No. 1/2011 about final works (thesis for University of P.J. Safarik.

Course language:
Slovak, English

Course assessment
Total number of assessed students: 5

abs	n
100.0	0.0

Provides:

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BO1/15	**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 credits: 4

Recommended semester/trimester of the course: 3.

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:

Course assessment
Total number of assessed students: 214

A	B	C	D	E	FX
26.64	16.82	23.83	18.69	11.21	2.8

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 5

Recommended semester/trimester of the course: 3.

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:

Course assessment
Total number of assessed students: 1656

A	B	C	D	E	FX
13.41	19.26	25.24	20.23	19.2	2.66

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BOT1/15	**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 credits: 4

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚBEV/TCB1/03

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:

Course assessment
Total number of assessed students: 263

A	B	C	D	E	FX
14.45	13.31	26.62	22.81	14.07	8.75

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

Date of last modification: 23.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 5

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚBEV/TCB1/03

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:

Course assessment
Total number of assessed students: 1439

A	B	C	D	E	FX
10.35	12.44	17.37	19.81	24.67	15.36

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

Date of last modification: 23.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of credits: 4

Recommended semester/trimester of the course:

Course level: I.

Prerequisities:

Conditions for course completion:
Required number of credits gained basedon submitting the bachelor thesis.

Learning outcomes:

Brief outline of the course:
Presentation of the bachelor thesis results, answering questions of the reviewer and members of professional commission.

Recommended literature:

Course language:
Slovak or English

Course assessment
Total number of assessed students: 28

A	B	C	D	E	FX
92.86	3.57	3.57	0.0	0.0	0.0

Provides:

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 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:	

Course assessment

Total number of assessed students: 172

A	B	C	D	E	FX
50.58	26.16	16.86	4.65	1.74	0.0

Provides:
Date of last modification: 23.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 6

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

Course level: I.

Prerequisities:

Conditions for course completion:
Recognition.
Recognition.

Learning outcomes:
To provide the students with knowledge on basic principles of statistic methods used in biology and their scope of application

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. Elsevier,Amsterdam..., 2007

Course language:

Course assessment
Total number of assessed students: 181

A	B	C	D	E	FX
3.31	8.84	16.57	21.55	35.36	14.36

Provides: prof. RNDr. Beňadik Šmajda, CSc.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ BSB/15	**Course name:** Biology

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

Number of credits: 1

Recommended semester/trimester of the course:

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 143

A	B	C	D	E	FX
22.38	21.68	26.57	18.18	11.19	0.0

Provides:

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ BSSM/15	**Course name:** Bachelor State Exam Physics

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

Number of credits: 1

Recommended semester/trimester of the course:

Course level: I.

Prerequisities:

Conditions for course completion:
Answering questions concerning selected fields of the subjects of Bachelor state exam.

Learning outcomes:
Basic knowledge and overview of konowledge in the fields stated by the Bachelro state exam.

Brief outline of the course:
Exam in the field of knowledge in physics consisting of an overview of the following fields:
- Mechanics and molecular physics
- Electricity and magnetism
- Oscillations and waves, optics
- Nuclear physics
- General biophysics
- Theoretical mechanics
- Theory of electromagnetic field
- Statistical physics

Recommended literature:

Course language:
Slovak

Course assessment
Total number of assessed students: 12

A	B	C	D	E	FX
33.33	41.67	16.67	0.0	8.33	0.0

Provides:

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 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:
Levels of living system organization. Characteristics and comparison of prokaryotic and eukaryotic plant and animal cells. Microscopic, submicroscopic and molecular structure and function of individual cell components. Nucleus and cell division.

Recommended literature:
Alberts, B., Bray, D., Lewis, J. et al.: Molecular Biology of the Cell. Garland Publishing Inc., New York, London, 1994

Course language:

Course assessment
Total number of assessed students: 3862

A	B	C	D	E	FX
5.85	15.64	24.52	23.05	26.05	4.89

Provides: RNDr. Rastislav Jendželovský, PhD., RNDr. Zuzana Jendželovská, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KFaDF/DF2p/03	**Course name:** History of Philosophy 2 (General Introduction)

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

Number of credits: 4

Recommended semester/trimester of the course: 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 738

A	B	C	D	E	FX
60.84	13.82	12.6	8.67	3.39	0.68

Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof., Doc. PhDr. Peter Nezník, CSc., PhDr. Katarína Mayerová, PhD., doc. Mgr. Róbert Stojka, PhD.

Date of last modification: 31.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚMV/ DGS/15	**Course name:** Students` Digital Literacy

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

Number of credits: 2

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
continuous assessment and final project

Learning outcomes:
To acquire an overview of the current possibilities of digital technology to develop skills and competencies with emphasis on the area of communication, social interaction and personal.
To acquire basic digital skills for working with advanced technologies (mobile phone, tablet, laptop, social media, online webtechnologies). To understand the value of existing advanced technologies for better and more effective learning, work and active life in higher education, lifelong learning and further career prospects.

Brief outline of the course:
Introduction to the problems of current, commonly available digital technology. Tools for access to online information source (mobile applications for access to information systems, databases, data books). Tools for collecting, generating direct information and data and its subsequent analysis and visualization. Tools for providing and sharing of electronic content (cloud technology - Google Drive, Youtube, Google+, Skydrive, Dropbox). Tools for communication, discussion and collaborative activities. Legal work with digital technologies and resources, plagiarism, critical evaluation of digital resources. Security, privacy, digital ethics and etiquette, digital citizenship.

Recommended literature:
1. Bruff, D. (2009). Teaching with classroom response systems: Creating active learning environments. San Francisco: Jossey-Bass.
2. Byrne, R. (2012). Google Drive and Docs for Teachers. Free Tech for Teachers.
3. Kawasaki, G. (2012). What the Plus! Google+ for the Rest of Us. Amazon igital Services.
4. Kolb, L. (2011). Cell Phones in the Classroom: A Practical Guide for Educators. International Society for Technology in Education.

Course language:
Slovak

Course assessment
Total number of assessed students: 147

abs	n
96.6	3.4
Provides: doc. RNDr. Stanislav Lukáč, PhD., doc. RNDr. Jozef Hanč, PhD., doc. RNDr. Ľubomír Šnajder, PhD.	
Date of last modification: 23.08.2017	
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚINF/ EDS/15	**Course name:** Educational software

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
1 Preparation of interim assignments:
a) Worksheet for student (with custom graphics)
b) Multimedia educational presentation (with pictures, animations and sounds)
c) Interactive educational quiz (with several types of quiz items)
d) Methodological guidance on the use of interactive applications in teaching selected topic of chosen school subject.
2 Creation and presentation of final project on the use of educational software in education.

Learning outcomes:
1. To acquire an overview of the educational software types and its exploitation in education.
2. To gain or enhance basic skills in working with:
a) presentation software, programs for creation and editing images, animations, diagrams, sounds, concept maps,
b) programs for creation of quizes, questionnaires, voting,
c) simulation and modeling software,
d) selected subject-oriented educational programs,
3. To create and present a final project on the use of educational software in education.

Brief outline of the course:
Educational software types. Onlilne educational sources and tools. Multimedia processing. Tools for creation of teaching aids.

Recommended literature:
1. Digitálna gramotnosť učiteľa : učebný materiál- modul 1 / Rastislav Adámek ... [et al.]. - Košice : Ústav informácií a prognóz školstva, 2009. - 80 s. - ISBN 9788080861193(brož.).
2. Moderná didaktická technika v práci učiteľa : učebný materiál modul 2 / Rastislav Adámek ... [et al.] ; recenzenti Viliam Fedák, Anton Lavrin. - Košice : Elfa, 2010. - 200 s. - ISBN 9788080861353 (brož.).
3. Web, Multimédiá / Martin Homola ... [et al.]. - Bratislava : Štátny pedagogický ústav, 2010. - 68 s. - Č. projektu: ŠPVV ĎVUi 26120130001. - ISBN 9788081180514 (brož.).

Course language:

Notes:

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

Course assessment

Total number of assessed students: 30

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

Provides: doc. RNDr. Ľubomír Šnajder, PhD.

Date of last modification: 23.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ELEM1/15

Course name: Electronics

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

Number of credits: 3

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚFV/VF1b/03 or ÚFV/VFM1b/15

Conditions for course completion:
Exam

Learning outcomes:
To explain physical principles of classical electronic components and systems and technologies of their realization. To perform analysis of properties and functions of basic electronic elements, electronic circuits and information transmission and processing systems. To introduce student into basic elements and devices in area of nanoelectonics and to explain methods of their fabrication and principles of their functioning.

Brief outline of the course:
Structure, properties and physical principles of the activity of selected electronic elements. Analysis of functions and properties of basic analog and digital electronic circuits. Nanoelectronics and selected building components of nanoelectronics: graphene, carbon nanotubes, selected types of nanodevices their properties, fabrication and integration to functional systems.

Recommended literature:
1. Brown P.B., Frantz G.N., Moraff H.: Electronics for the Modern Scientist. Elsevier, 1982.
2. Delaney C.F.G.: Electronics for the Physicist with Aplications. John Willey & Sons, 1980.
3. Wolt E. L.: Quantum Nanoelectronics, An introduction to electronic nanotechnology and quantum computing, Wiley-VCh, 2009

Course language:
Slovak

Course assessment
Total number of assessed students: 152

A	B	C	D	E	FX
25.0	25.0	28.95	9.21	4.61	7.24

Provides: Mgr. Vladimír Komanický, Ph.D., prof. RNDr. Peter Kollár, DrSc.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ELP1/01	**Course name:** Electonics Practical

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

Number of credits: 3

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚFV/ELE1/07 or ÚFV/ELEM1/15

Conditions for course completion:
Debate with students during practice, trial preparation and processing of theoretical and experimental results of their defense.
Summary evaluation of student activities while working on set topics of study practices.

Learning outcomes:
Practical work of students in the design, construction and properties of the measurements of electronic circuits and interpretation of the results obtained to verify and consolidate the theoretical knowledge acquired in lectures on the subject Electronics.

Brief outline of the course:
1. Combinatorial logical circuits. 2.Logical memory circuits. 3. Logical sequence circuits. 4. Rectifiers, filters, stabilizers. 5. Amplifier with bipolar transistor. 6. Stabilized DC power supplies. 7. Generators of harmonic signals. 8. Operational amplifiers and operational network interfaces. 9. Digital-to-analog converters. 10. Analog-to-digital converters. 11 Reserve.

Recommended literature:
1. Delaney C.F.G.: Electronics for the Physicist with Aplications. John Willey & Sons, New York, 1980.
2. Zbar P.B., Malvino A.P., Miller M.A.: Basic Electronics: a Text-Lab Manual. Macmillan/ McGraw – Hill, New York, 1994.

Course language:
slovak or english

Course assessment
Total number of assessed students: 35

A	B	C	D	E	FX
97.14	0.0	2.86	0.0	0.0	0.0

Provides: RNDr. Vladimír Tkáč, PhD.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ FDE/15	**Course name:** Physics in Demonstration Experiments

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

Number of credits: 2

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Seminar work – a project dealing with hands-on experiments and their role in Physics teachig.

Learning outcomes:
The goal of the course is to get better the understanding of basic physical concepts and phenomena through demonstrational physical experiments.

Brief outline of the course:
The course is aimed at the conceptual understanding of basic physical concepts and phenomena with the help of selected demonstrational experiments. The experiments concern the content of the subject Introductory physics and their realization is based on students´ active participation.

Recommended literature:
1. D.Halliday, R.Resnick, J.Walker: Fyzika, VUTIUM, Brno, 2000
2.K.Cummings, P.W.Law, E.F.Redish, P.J.Cooney: Understanding Physics,
John Wiley & Sons, Inc., 2004
3.P.G.Hewitt: Conceptual Physics, tenth edition, Pearson, Addison Wesley, 2006
4.Ľ.Onderová, M.Kireš, Z.Ješková, J.Degro: Praktikum školských pokusov II, PF UPJŠ, 2004

Course language:
Slovak

Course assessment
Total number of assessed students: 16

A	B	C	D	E	FX
81.25	6.25	6.25	6.25	0.0	0.0

Provides: doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD., PaedDr. Iveta Štefančínová, Ph.D.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 5

Recommended semester/trimester of the course:

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:

Course assessment
Total number of assessed students: 349

A	B	C	D	E	FX
38.97	22.35	21.49	8.02	8.31	0.86

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 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:

Course assessment
Total number of assessed students: 1641

A	B	C	D	E	FX
14.69	12.8	15.42	13.77	23.71	19.62

Provides: Mgr. Silvia Gajdošová, Ph.D., doc. RNDr. Peter Paľove-Balang, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 7

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚBEV/HIS1/03 or ÚBEV/HISE1/04 or ÚBEV/HIS1/15 or ÚBEV/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 organisms of animals and man.

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:
Ganong, W. F.: Review of medical physiology. Prentice-Hall, Appleton & Langer, 1993
Varder, A. J., Sherman, J. H., Luciano, D. S.: The mechanisms of body functions, McGraw-Hill, 1990
Schmidt, R. F., Thews, G.: Human Physiology, Springer-Verlag, 1989
R.W.Hill, R.Wyse, M.Anderson : Animal Physiology, Sinauer Assoc., 2008

Course language:

Course assessment
Total number of assessed students: 1251

A	B	C	D	E	FX
7.91	14.55	21.1	24.94	24.78	6.71

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: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 7

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities: ÚBEV/MB1/01 or ÚBEV/MOB1/03 or ÚBEV/MOB1/15

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 1275

A	B	C	D	E	FX
18.75	16.08	15.84	14.12	18.75	16.47

Provides: prof. RNDr. Eva Čellárová, DrSc., RNDr. Katarína Bruňáková, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ HISE1/15	**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 credits: 6

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚBEV/CYT1/02 or ÚBEV/CYT1/15

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. Nervous system. Special senses.

Recommended literature:
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, 1992
Michel H. Ross, Wojciech Pawlina: Histology, Lippincott Wiliams & Wilkins, 2011

Course language:

Course assessment
Total number of assessed students: 1838

A	B	C	D	E	FX
17.68	13.71	15.78	12.57	25.46	14.8

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPE/ INP/17	**Course name:** Inclusive Pedagogy
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 5.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 0

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

Provides:
Date of last modification: 05.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ KP/12	**Course name:** Survival Course

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

Number of 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:

Course assessment
Total number of assessed students: 365

abs	n
44.38	55.62

Provides: MUDr. Peter Dombrovský, Mgr. Marek Valanský
Date of last modification: 18.08.2017
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/KVM/15

Course name: Quantum Mechanics I.

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

Number of credits: 5

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:
To become familiar with elementary principles of quantum mechanics and to illustrate its possible applications on selected examples.

Brief outline of the course:
A subject matter, experimental and theoretical foundations of quantum mechanics (QM). Basic axioms of QM. Schrödinger equation and its solution for a square potential well, harmonic oscillator and spherically symmetric potentials. Tunnel effect and over-barrier reflection. Spin and Pauli matrices. Systems of identical particles, bosons, fermions and Pauli exclusion principle.

Recommended literature:
1. Ľ. Tóth, M. Tóthová, Kvantová a štatistická fyzika I, Rektorát Univerzity P. J. Šafárika, 1982. (in Slovak language)
2. Ľ. Skála, Úvod do kvantovej mechaniky, Academia, Praha, 2005. (in Czech language)
3. J. Pišút, L. Gomolčák, Úvod do kvantovej mechaniky, Bratislava 1983. (in Slovak language)
4. W. Greiner, Quantum Mechanics, 4th edition, Springer, Berlin, 2000.
5. A. C. Philips, Introduction to Quantum Mechanics, Wiley, Weinheim, 2003.
6. D. J. Griffiths, Introduction to Quantum Mechanics, Prentice Hall, New Jersey, 1995.

Course language:
EN - english

Course assessment
Total number of assessed students: 14

A	B	C	D	E	FX
28.57	7.14	28.57	21.43	0.0	14.29

Provides: doc. RNDr. Jozef Strečka, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ LKSp/13

Course name: Summer Course-Rafting of TISA River

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

Number of 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:

Course assessment
Total number of assessed students: 142

abs	n
41.55	58.45

Provides: Mgr. Peter Bakalár, PhD.
Date of last modification: 18.08.2017
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ MB1/01	**Course name:** Molecular Biology

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

Number of credits: 4

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

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:

Course assessment
Total number of assessed students: 920

A	B	C	D	E	FX
6.63	10.87	16.96	18.26	34.02	13.26

Provides: doc. RNDr. Peter Pristaš, CSc.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/MFYU/15

Course name: Methods of Physical Problems Solving

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

Number of credits: 2

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
Successfull in two writing exams oriented on problem solving.

Learning outcomes:
Student is able to use the selected method of problem solving. He(she) is experienced in solving problems from physics olympiad with comments. Student knows how to use multimedia support and modelling for problem solving.

Brief outline of the course:
1. Clasification of selected physics problem solving methods
2. Mechanics
3. Multimedia support for problem solving
4. Hydromechanics
5. Physics problems series
6. Termodynamics
7. Physics olympiad
8. Physics olympiad problem solving with comments
9. Electric current
10. Qualitative physics problems
11. Mechanical oscillations
12. Dynamics modeling and problem solving

Recommended literature:
Halliday, D., Resnick, R., Walker, J.: Fyzika 1-5, Akademické nakladatelství, VUTIUM, ISBN: 8021418680, 2007

Course language:
Slovak, English

Course assessment
Total number of assessed students: 7

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

Provides: doc. RNDr. Marián Kireš, PhD.
Date of last modification: 01.03.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 5

Recommended semester/trimester of the course:

Course level: I.

Prerequisities:

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:

Course assessment
Total number of assessed students: 1339

A	B	C	D	E	FX
21.73	12.85	18.15	19.94	22.78	4.56

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPE/ MMKV/17	**Course name:** Multiculturalism and Multicultural Education
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 4.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 48

A	B	C	D	E	FX
31.25	27.08	37.5	2.08	2.08	0.0

Provides: PaedDr. Janka Ferencová, PhD.
Date of last modification: 05.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚFV/ MTFM/15	**Course name:** Modern Trends in Physics

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

Number of credits: 3

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
test
test

Learning outcomes:
Presentation of scientific goals and experimental facilities on the Institute of Physics. Discussion of new trends in physics of micro-world, astrophysics, biophysics and physics of condensed matter.

Brief outline of the course:
The present state of the micro-world physics – fundamental particles and the interaction forces. Theoretical description of the micro-world – the Standard Model. Experimental tests of the Standard Model - the discovery of neutral currents and intermediate W+-, Z0 bosons. Heavy ion collisions and the search for new state of matter - quark gluon plasma - on the most powerful accelerators RHIC (Relativistic Heavy Ion Collider), Brookhaven National Laboratory) , USA and on the constructed LHC (Large Hadron Collider), CERN, Geneva. Big Bang and the quark gluon plasma. Some open questions – search for Higgs boson, responsible for the mass of fundamental particles and quark gluon plasma in laboratory conditions.
Practical activities – demonstration of the knowledge from lectures at identification of the real Z0 decay events in experimental data from the LEP accelerator, CERN, Swizterland.
New trends in astrophysical investigation: Solar system planets and exoplanets; cataclysmic variables, blazers and polars; black holes; quasars and active galactic nuclei, clusters of galaxies and web structure of Universe; gravitational lensing, dark matter and dark energy; gamma ray bursts.
Topical problems in biophysics
Low temperatures as a tool for the study of physical properties of matter. Non-Fermi liquid materials... Geometrically frustrated systems. Quantum tunneling in molecular magnets. Application of quantum magnets. Excursion in the Centre of Excellence of Low Temperature Physics.
Soft magnetic nanostructure materials prepared by milling and alloying: magnetic properties of small particles, magnetization processes, domain structure, milling and alloying.

Recommended literature:
S. Chikazumi: Physics of Magnetism, J. Willey and Sons, Inc. New York, London, Sydney, 1997.
C. Suryanarayana, Progress in Materials Science 46 (2001), 1-184

F. Close : The Cosmic Onion, 1990
Cindy Schwarz :A Tour of the Subatomic Zoo, 1997
Frank Close, Michael Marten, Christine Sutton : The Particle Odyssey-
A Journey to the Heart of Matter, 2002
http://vk.upjs.sk/~epog/2006/
Scientific journals

Course language:
english

Course assessment
Total number of assessed students: 10

abs	n
100.0	0.0

Provides: Dr.h.c. prof. RNDr. Alexander Feher, DrSc.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ MTFa/15	**Course name:** Mathematics I for physicists

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

Number of credits: 5

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Two written tests and one homework with excercises from the whole semester. The final evaluation is given according to the results from the semester and in view of the results of the written final test.

Learning outcomes:
To obtain basic knowledge on functions of one variable and their properties; to be able to apply the theory in concrete excercises.

Brief outline of the course:
Functions, basic properties. Elementary functions. Continuous functions. Limits. Derivation and its geometric aplications. Theorems about continuous functions. Behaviour of functions. Indefinite integrals, basic methods of integration. Definite integral and its applications.

Recommended literature:
S. Lang: A First Course in Calculus, Springer Verlag, 1998

Course language:
Slovak

Course assessment
Total number of assessed students: 312

A	B	C	D	E	FX
8.33	8.33	14.1	19.55	29.49	20.19

Provides: doc. RNDr. Roman Soták, PhD., RNDr. Erika Vojtková

Date of last modification: 27.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚMV/ MTFb/15	**Course name:** Mathematics II for physicists

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

Number of credits: 4

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚMV/MTFa/15

Conditions for course completion:
Two written tests and one homework with excercises from the whole semester, final test.
According to the results from the semester and in view of the results of the written final test.

Learning outcomes:
To develop acquired knowledge of mathematical analysis with knowledge on linear algebra and functions of more variables. To learn to solve basic types of differential equations and know how to use them to model real-world phenomena. To learn to solve problems about infinite series.

Brief outline of the course:
System of linear algebraic equations, determinants. Functions of more variables, continuity and limits, partial derivations, local extremes of functions of two variables. Some types of differential equations. Series, functional series, Taylor and MacLaurin series.

Recommended literature:
1. S. Lang: A First Course in Calculus, Springer Verlag, 1998
2. Huťka V., Benko E., Ďurikovič V.: Matematika, Alfa, Bratislava 1991.
3. Došlá, Z.: Matematika pro chemiky, 1.díl. Masarykova univerzita, Brno, 2010.

Course language:
Slovak

Course assessment
Total number of assessed students: 178

A	B	C	D	E	FX
11.24	16.29	12.36	25.84	29.21	5.06

Provides: doc. RNDr. Stanislav Lukáč, PhD., RNDr. Anton Hovana

Date of last modification: 27.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KGER/ NJKG/07	**Course name:** Communicative Grammar in German Language
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 48

A	B	C	D	E	FX
54.17	12.5	10.42	4.17	10.42	8.33

Provides: PaedDr. Ingrid Puchalová, PhD., Mgr. Barbora Molokáčová
Date of last modification: 25.08.2017
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KGER/OJPV1/07	**Course name:** Specialised German Language - Natural Sciences 1

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 136

A	B	C	D	E	FX
21.32	22.79	25.0	22.06	8.09	0.74

Provides: Mgr. Andreas Schiestl

Date of last modification: 25.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ OLŠ/15	**Course name:** School Administration and Legislation

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

Number of credits: 2

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

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 168

A	B	C	D	E	FX
35.71	30.36	22.02	8.33	2.98	0.6

Provides: PaedDr. Renáta Orosová, PhD.

Date of last modification: 23.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KOP/ OPaPDV/14	**Course name:** Civil Law and Intellectual Property Rights
Course type, scope and the method: **Course type:** Lecture **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of credits: 4	
Recommended semester/trimester of the course: 3., 5.	
Course level: I., N	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 67	

abs	n
94.03	5.97

Provides: doc. JUDr. Renáta Bačárová, PhD., LL.M., prof. JUDr. Peter Vojčík, CSc.
Date of last modification: 18.01.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: CJP/ PFAJ4/07	**Course name:** English Language of Natural Science

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Active participation in class and completed homework assignments. Students are allowed to miss 2 classes at the most.
Continuous assessment: 2 credit tests (presumably in weeks 6 and 13) and academic presentation in English.
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:
ANGLICKÝ JAZYK PRE GEOGRAFOV:
Veda a výskum. Odbor geografia.
Planéta Zem. Naša slnečná sústava.
Zemetrasenia, Sopečná činnosť.
Svetové oceány a ľadovce.
Životné prostredie a geografia.
Počasie a klíma.
ANGLICKÝ JAZYK PRE EKOLÓGOV:
Veda a výskum. Odbor ekológia.
Životné prostredie. Znečistenie a dôsledky.
Sopečná činnosť, zemetrasenia.
Great Pacific Garbage Patch.

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

Recommended literature:

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

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

Course language:

Course assessment
Total number of assessed students: 2443

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

Provides: Mgr. Zuzana Naďová, Mgr. Lenka Klimčáková

Date of last modification: 06.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
Active classroom participation, 2 absences tolerated (4x45 min.) tolerated. 2 tests (5th/6th week and 12th/13th week), no retake. Minipresentation on chosen topic. Final evaluation- average assessment of tests and presentation. Grading scale: A 93-100%, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64% and less

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.

Course assessment
Total number of assessed students: 344

A	B	C	D	E	FX
30.81	23.55	15.99	11.05	7.27	11.34

Provides: Mgr. Zuzana Naďová

Date of last modification: 06.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

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:
Misztal M.: Thematic Vocabulary, Fragment, 1998
McCarthy, O'Dell: English Vocabulary in Use, 1994
Alexander L.G.: Longman English Grammar, Longman, 1988
Jones I. - Communicative Grammar Practice, CUP, 1992
Vince M.: Macmillan Grammar in Context, Macmillan, 2008
www.bbclearningenglish.com
Gráf T., Peters S.: Time to practise, Polyglot, 2007

Course language:

Course assessment
Total number of assessed students: 394

A	B	C	D	E	FX
39.34	18.53	17.01	8.88	6.09	10.15

Provides: Mgr. Lenka Klimčáková

Date of last modification: 06.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of credits: 2

Recommended semester/trimester of the course:

Course level: I., II., N

Prerequisities:

Conditions for course completion:
Active participation in class and completed homework assignments. Students are allowed to miss two classes at the most.
2 credit tests (presumably in weeks 6/7 and 12/13) and short academic presentations in English on selected topics.
Final grade will be calculated as follows: A 93-100 %, B 86-92%, C 79-85%, D 72-78%, E 65-71%, FX 64 % and less.

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

Course assessment

Total number of assessed students: 220

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

Provides: Mgr. Zuzana Naďová

Date of last modification: 06.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/PKŽ/15	**Course name:** Psychology of Everyday Life

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

Number of credits: 2

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 116

A	B	C	D	E	FX
43.1	14.66	30.17	8.62	2.59	0.86

Provides: Mgr. Ondrej Kalina, PhD.

Date of last modification: 21.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 4

Recommended semester/trimester of the course: 1.

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:

Course assessment
Total number of assessed students: 1782

A	B	C	D	E	FX
16.11	18.35	24.75	22.78	12.74	5.27

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ POF1a/99	**Course name:** Computational Physics I

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

Number of credits: 4

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚFV/NUM/10

Conditions for course completion:
Continuous evaluation is based on students' activity in the classroom and work on assignments. Examination and assignments submitted electronically with the attached computer code.

Learning outcomes:
To teach students to use computer as a tool of modeling of physical reality.

Brief outline of the course:
Introduction to dynamical systems. Numerical solution of ordinary differential equations (ODE) with initial value. Boundary value problems for ODE. Discrete schemes for partial differential equations (PDE). Numerical solution of PDE. Finite difference methods, consistency, convergence, stability. Eliptic and parabolic PDE. Introduction to Monte Carlo (MC) method and applicactions in statistical physics. MC simulations of lattice spin systems and stochastic processes.

Recommended literature:
1. C. Pozrikidis: Num. Comp. in Science and Engineering, Oxford Univ. Press, 1998.
2. A.L. Garcia: Numerical Methods for Physics, Prentice-Hall, 1994.
3. D. P. Landau, K. Binder: A Guide to Monte Carlo Simulations in Statistical Physics, Cambridge Univ. Press, 2000.
4. B. A. Berg: Introduction to Markov Chain Monte Carlo Simulations and Their Statistical Analysis, http://www.worldscibooks.com/etextbook/5904/5904_intro.pdf
5. W. Janke: Lectures on Ising model, http://www.physik.uni-leipzig.de/~janke/Ising_Lectures_Lviv.html

Course language:

Course assessment
Total number of assessed students: 106

A	B	C	D	E	FX	N	P
33.02	17.92	9.43	17.92	14.15	2.83	0.0	4.72

Provides: doc. RNDr. Milan Žukovič, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/PP/15	**Course name:** Positive Psychology

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

Number of credits: 2

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 165

A	B	C	D	E	FX
97.58	1.21	0.61	0.0	0.61	0.0

Provides: Mgr. Jozef Benka, PhD. et PhD.

Date of last modification: 21.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ PPFM/15	**Course name:** Computer-Based Physical Measurement

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
active participation at all labworks
written laboratory records with data analysis

Learning outcomes:
Students is able to measure physical quantities and gains skills important for measuring and data processing with the help of computer. The result is deeper conceptual understanding of physical phenomena involved in the labworks that is connected mainly with the content of courses General Physics I,II,III.

Brief outline of the course:
The content of the course involves labworks in physics aimed at selected problems of General Physics I,II,III. Student learns about different methods of measurement of physical quantities, he gains skills concerning measurement and data processing with the help of computer. The set of labworks involves analysis of different phenomena followed by the data processing and written report.

Recommended literature:
1. Halliday, Hajko, V., Daniel-Szabó, J.: Základy fyziky, Veda Bratislava 1983
2. Veis, Š., Maďar, J., Martišovitš, V.: Všeobecná fyzika 1, Alfa, Bratislava, 1987
3. Hlavička, A. a kol.: Fyzika pre pedagogické fakulty, SPN Praha, 1971
4. Halliday, D., Resnick, R., Walker, J.: Fyzika, part1-4,VUT Brno, 2000

Course language:
Slovak

Course assessment
Total number of assessed students: 17

A	B	C	D	E	FX
64.71	11.76	23.53	0.0	0.0	0.0

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

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/PUDB/15	**Course name:** Drug Addiction Prevention in University Students

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

Number of credits: 2

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

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 256

A	B	C	D	E	FX
77.34	20.31	2.34	0.0	0.0	0.0

Provides: prof. PhDr. Oľga Orosová, CSc., Mgr. Marta Dobrowolska Kulanová, PhD.

Date of last modification: 21.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPE/ Pg/15	**Course name:** Pedagogy

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

Number of credits: 2

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

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 406

A	B	C	D	E	FX
20.94	18.97	26.11	19.46	13.55	0.99

Provides: Mgr. Katarína Petríková, PhD.

Date of last modification: 23.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/Ps/15	**Course name:** Psychology

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

Number of credits: 2

Recommended semester/trimester of the course: 1., 3., 5.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 318

A	B	C	D	E	FX
16.04	11.01	24.53	23.9	20.75	3.77

Provides: prof. PhDr. Oľga Orosová, CSc., PhDr. Anna Janovská, PhD., Mgr. Jozef Benka, PhD. et PhD.

Date of last modification: 21.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ SDFM1/15	**Course name:** Methods of Data Processing in Physics

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

Number of credits: 3

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Five tasks in Matlab/Octave.
Exam interview - 60%, tasks - 40%.

Learning outcomes:
Methods of data processing in physics.

Brief outline of the course:
1. Numerical methods.
2. Regression analysis.
3. Computational physics.

Recommended literature:
Buchanan J. L., Turner P. R.: Numerical Methods and Analysis. McGraw-Hill, Inc., New York, 1992. Siegel A. F.: Statistics and Data Analysis. An Introduction. J. Wiley&Sons, NY, 1988.

Course language:
slovak, basics of english

Course assessment
Total number of assessed students: 2

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

Provides: doc. RNDr. Erik Čižmár, PhD.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPO/ SPKVV/15	**Course name:** Social and Political Context of Education

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

Number of credits: 2

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 11

A	B	C	D	E	FX
9.09	0.0	45.45	36.36	9.09	0.0

Provides: Dr.h.c. prof. PhDr. Marcela Gbúrová, CSc.

Date of last modification: 23.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ STA1N/15	**Course name:** Statistical Physics

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

Number of credits: 4

Recommended semester/trimester of the course: 6.

Course level: I.

Prerequisities: ÚFV/KVM/08 or ÚFV/KVM/15

Conditions for course completion:
Written test - maximum 30 points.
Oral exam . maximum 70 points

Learning outcomes:
To acquaint students with basic principles of statistical mechanics and to illustrate possibilities of its applications in selected cases.

Brief outline of the course:
Basic laws of thermodynamics. The phase space, statistical ensemble, distribution function, canonical invariance of the phase volume. Liouville theorem, the ergodic problem and Tolman hypothesis. Microcanonical, canonical and grandcanonical enesembles. The virial and equipartition theorem. Applications of statistical physics.

Recommended literature:
1) L. Reichl, A modern Course in Statistical Mechanics, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim (2009).
2.) R.K. Pathria, Statistical Mechanics, Butterworth.Heinemann, Oxford (2001).

Course language:
Slovak, English

Course assessment
Total number of assessed students: 20

A	B	C	D	E	FX
30.0	20.0	25.0	15.0	10.0	0.0

Provides: prof. RNDr. Michal Jaščur, CSc., RNDr. Jana Čisárová, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 4

Recommended semester/trimester of the course: 4., 6.

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 258

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

Provides:

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ SVL1/03

Course name: Structure and Properties of Solids

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

Number of credits: 5

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
50% maintained output, written test
50% final exam

Learning outcomes:
To explain basic problems of Solid State physics. The course is mainly oriented on fundamental type of lattices, symetry and crystal structure, X.ray diffractometry, Thermal properties, mechanical properties and conductivity of solids. The course alows to continue education in specialized topis of Condensed Matter like: Magnetic properties, Low temperature physics, Experimental methods of CM, Semiconductors atc.

Brief outline of the course:
Periodic array of atoms. Fundamental type of lattices. Index systems for crystal planes. Simple crystal structure. Symetry and crystal structure. Point and space groups. Crystal binding and elastic constants. Wave diffraction and the reciprocal lattice. X.ray diffractometry. Brag´s law, Laue conditions, scatering of x-rays, Neutrons and neutron scattering, CW - diffractometer, Ewald´s sphere, Diffraction on powder samples, Structure factor, Ocupation factor, Atomic displacement factor. Thermal properties. Phonon heat capacity, thermal conductivity. Free electron Fermi gas. Energy bands. Semiconductor crystals. Superconductivity.

Recommended literature:
1. Ch. Kittel, Solid State Physics,Springer,1985.
3.Fundamentals of Powder Diffraction and Structural Characterization of Materials, Vitalij K. Pecharsky & Peter Y. Zavalij , Kluwer Academic Publishers, 2003.
4.Structure Determination from Powder Diffraction Data, Edited by W.I.F. David, K. Shankland, L.B. McCusker, C. Bärlocher, Oxford University Press, 2006

Course language:
english

Course assessment
Total number of assessed students: 44

A	B	C	D	E	FX
45.45	18.18	18.18	13.64	2.27	2.27

Provides: prof. RNDr. Pavol Sovák, CSc.
Date of last modification: 01.03.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 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:

Course assessment
Total number of assessed students: 1090

abs	n
99.91	0.09

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 2

Recommended semester/trimester of the course: 4.

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:

Course assessment
Total number of assessed students: 790

abs	n
99.24	0.76

Provides: RNDr. Peter Ľuptáčik, PhD., doc. RNDr. Ľubomír Panigaj, CSc., RNDr. Andrej Mock, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ TEP1/03	**Course name:** Theory of the Electromagnetic Field

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

Number of credits: 5

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚFV/VFM1b/15 or ÚFV/VF1b/03

Conditions for course completion:
Two tests to deal with specific tasks theory of the electromagnetic field.
Examination.

Learning outcomes:
To acquaint students with principles of a theory of the electromagnetic field.

Brief outline of the course:
Maxwell equations in vacuum. Scalar and vector potentials. Conservation laws. Electrostatic field. Static magnetic field. Maxwell equations in macroscopic media. Quasistatic electromagnetic field. Electromagnetic waves. Radiation of electromagnetic waves.

Recommended literature:
1. Jackson J.D.: Classical Electrodynamics, John Wiley, New York, 1975.
2. Rao N.N.: Basic Electromagnetics with Applications, Prentice-Hall, New Jersey, 1972.
3. Greiner W.: Classical Electrodynamics, Springer-Verlag, New York, 1998.

Course language:
1. Slovak,
2. English

Course assessment
Total number of assessed students: 279

A	B	C	D	E	FX
27.6	7.89	16.49	23.3	16.49	8.24

Provides: prof. RNDr. Andrej Bobák, DrSc., RNDr. Tomáš Lučivjanský, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ TMEU/15	**Course name:** Theoretical Mechanics

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

Number of credits: 3

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities: ÚFV/VF1a/12 or ÚFV/VFM1a/15

Conditions for course completion:
Two tests to deal with specific tasks mechanics.
Final examination.

Learning outcomes:
To acquaint students with principles of the theoretical mechanics.

Brief outline of the course:
Mechanics of particle system with constraints. Principle of virtual work and d'Alembert's principle. Lagrange's function and Lagrange's equations of motion. Hamilton's principle, Hamilton's function and Hamilton's canonical equations of motion. Mechanics of rigid body. Kinematics and dynamics of rigid body.

Recommended literature:
1. Meirovitch L.: Methods of Analytical dynamics, McGraw-Hill, New York, 1970.
2. Taylor T.T.: Mechanics: Classical and Quantum, Pergamon Press, Oxford, 1976.
3. Strelkov S.P.: Mechanics, Mir Publishers, Moscow, 1985.
4. Greiner W.: Classical Mechanics, Springer-Verlag, Berlin, 2010.
5. Goldstein H.: Classical Mechanics, Addison-Wesley, London, 1970.
6. Barger V., Olsson M.: Classical Mechanics: A Modern Perspective, McGraw-Hill, London, 1973.

Course language:
Slovak

Course assessment
Total number of assessed students: 18

A	B	C	D	E	FX
33.33	11.11	11.11	33.33	0.0	11.11

Provides: prof. RNDr. Andrej Bobák, DrSc.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPE/ TVE/08	**Course name:** Theory of Education

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

Number of credits: 2

Recommended semester/trimester of the course: 4., 6.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 378

A	B	C	D	E	FX
27.25	36.77	23.81	7.41	1.85	2.91

Provides: Mgr. Katarína Petríková, PhD.

Date of last modification: 23.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ TVa/11	**Course name:** Sports Activities I.

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

Number of credits: 2

Recommended semester/trimester of the course: 1.

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

Prerequisities:

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

Learning outcomes:
Learning outcomes:
Increasing physical condition and performance within individual sports. Strengthening the relationship of students to the selected sports activity and its continual improvement.

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

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 11672

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.42	0.01	0.0	0.0	0.0	0.03	7.59	3.96

Provides: Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Ing. Iveta Cimboláková, PhD.
Date of last modification: 18.08.2017
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of credits: 2

Recommended semester/trimester of the course: 2.

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

Prerequisities:

Conditions for course completion:
Conditions for course completion:
Final assessment and active participation in classes - min. 75%.

Learning outcomes:
Learning outcomes:
Increasing physical condition and performance within individual sports. Strengthening the relationship of students to the selected sports activity and its continual improvement.

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

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 10971

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.37	0.57	0.02	0.0	0.0	0.05	10.13	3.86

Provides: Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Ing. Iveta Cimboláková, PhD.
Date of last modification: 18.08.2017
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of credits: 2

Recommended semester/trimester of the course: 3.

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

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 6910

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
89.84	0.04	0.0	0.0	0.0	0.03	4.23	5.86

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

Date of last modification: 18.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of credits: 2

Recommended semester/trimester of the course: 4.

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

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 5045

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.09	0.3	0.04	0.0	0.0	0.0	6.82	7.75

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

Date of last modification: 18.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ UAS/13 | **Course name:** Introduction to Astronomy

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

Number of credits: 3

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
2 tests during term. Each test for 15 points. Minimal amounts of points for an exam is 20.
Oral examination and test.

Learning outcomes:
Acquaint students with basic astronomy and astrophysic contnceps, celestial coordinates, Solar system, formation and evolution of stars and galaxies

Brief outline of the course:
Subject of astronomy, celestial coordinates and their transformations, time and calendar, problem of 2 bodies, Astronomical telescopes, Solar system, radiation of stars and spectrum, properties of stars and their evolution, galaxies.

Recommended literature:
1. Čeman, R., Pittich, E., 2002, Vesmír 1 - Slnečná sústava, MAPA Slovakia
2. Čeman, R., Pittich, E., 2003, Vesmír 2 - Hviezdy - Galaxie, MAPA Slovakia
3. Grygar, J., Horský, Z., Mayer, P., 1979, Vesmír, Mladá fronta
4. Kleczek, J., 2002, Velká encyklopedie vesmíru, Academia
5. Pittich, E., Kalmančok, D., 1981, Obloha na dlani, Obzor
6. Vanýsek, V.: 1980, Základy astronomie a astrofyziky, Academia

Course language:

Course assessment
Total number of assessed students: 32

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

Provides: doc. Mgr. Štefan Parimucha, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: Dek. PF UPJŠ/USPV/13	**Course name:** Introduction to Study of Sciences
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week: Per study period:** 12s / 3d **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 1.	
Course level: I.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Course assessment Total number of assessed students: 1356	

abs	n
88.86	11.14

Provides:
Date of last modification: 19.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ UVF/05	**Course name:** Introduction to General Physics

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

Number of credits: 2

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Active presentation during the lessons twice a year
Solved assignments
Positive results at two written tests

Learning outcomes:
Conceptual understanding of the key concepts of the topics of Mechanics and Molecular Physics gained with the help of problem solving, physical experiments and multimedial support that is inevitable precondition for the further study at University level. At the end of this course the student will be able to follow with the courses proceeding from the course General Physics I.

Brief outline of the course:
The subject is a supportive subject to the course General physics 1 - Mechanics and Molecular Physics. The content involves key concepts in mechanics and molecular physics with the help of school experiments, interactive multimedial teaching materials and physical tasks and problems. The aim is to help students to overcome difficulties connected with knowlege gained during the previous study towards the conceptual understaning of the University course content.

Recommended literature:
1. Sutton, R.M., Demonstration Experiments in Physics, AAPT, 2003
2. Pizzo, J.: Interactive Physics demonstration, AAPT, 2001
3. Cunningham, J, Herr, N.: Hands on Physics Activities, Jossey-Bass A Wiley Imprint, 1994
4. Halliday D., Resnick R., Walker J.: Fyzika. Část 1- 5., Vysokoškolská učebnica fyziky, VUTIUM, Brno, 2000
5. Walker, J.: The Flying Circus of Physics with answers, John Wiley&Sons, 2005
6. Hajko, V., Daniel-Szabó, J. a kol. Fyzika v príkladoch, Alfa, 1983

Course language:
Slovak

Course assessment
Total number of assessed students: 249

A	B	C	D	E	FX
36.95	18.47	23.29	14.86	6.02	0.4

Provides: doc. RNDr. Zuzana Ješková, PhD., doc. RNDr. Marián Kireš, PhD.
Date of last modification: 01.03.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ UVF2/07	**Course name:** Introduction to General Physics II

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

Number of credits: 2

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities:

Conditions for course completion:
Active presentations duringf the lessons twice a year
Solved assignments
Postive results at two written tests.

Learning outcomes:
Conceptual understanding of the key concepts of the topics of Electricity and Magnetism with the help of problem solving, physical experiments and multimedial support that is inevitable precondition for the further study at University level. At the end of the course the studnet will be able to follow with the courses, proceeding from the course General physics II.

Brief outline of the course:
The subject is a supportive subject to the course General Physics 2 - Electricity and Magnetism. The content involves key concepts of electricity and magntism with the help of school experiments, interactive multimedial teaching materials and physical tasks and problems. The aim is to help students to overcome difficulties connected with knowledge gained during the previous study towards the conceptual understanding of the University course content.

Recommended literature:
1. Sutton, R.M., Demonstration Experiments in Physics, AAPT, 2003
2. Pizzo, J.: Interactive Physics demonstration, AAPT, 2001
3. Cunningham, J, Herr, N.: Hands on Physics Activities, Jossey-Bass A Wiley Imprint, 1994
4. Halliday D., Resnick R., Walker J.: Fyzika. Část 1- 5., Vysokoškolská učebnica fyziky, VUTIUM, Brno, 2000
5. Walker, J.: The Flying Circus of Physics with answers, John Wiley&Sons, 2005

Course language:
Slovak

Course assessment
Total number of assessed students: 206

A	B	C	D	E	FX
40.78	19.42	21.84	8.74	9.22	0.0

Provides: doc. RNDr. Zuzana Ješková, PhD.
Date of last modification: 01.03.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 6

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚBEV/CYT1/02 or 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:

Course assessment
Total number of assessed students: 1777

A	B	C	D	E	FX
18.91	22.62	27.41	18.01	9.23	3.83

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ VBFM1/15	**Course name:** General Biophysics I

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

Number of credits: 3

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
Exam.

Learning outcomes:
To provide information about the object, significance and role of biophysics in science. The main emphasis will be given on the understanding of the principles determining the structure and function of the most important biological structures (nucleis acids, proteins, biomembranes) as well as on the thermodynamics and kinetics of selected chemical and biophysical processes.

Brief outline of the course:
The definition of biophysics and its role in the science. Intra- and inter-molecular interactions in biological systems. Function and structure of the important biomacromolecules (nucleic acids, proteins, biomembranes, sugars). Conformational transitions in biopolymers: helix-coil transition in DNA, denaturation of proteins, phase transitions in biomembranes.
Thermodynamics of biological processes. Gibbs energy and chemical equilibrium, chemical potential, binding constants of the ligand-macromolecule intractions, cooperativity of the binding between biological important molecules, membrane potential.
Kinetics of the chemical and biophysical processes. The principles of chemical kinetics, enzymatic reactions, inhibition of the enzymes, membrane transport, introduction to the pharmacokinetics.
Cell biophysics. The basic bioenergetic processes, oxidative phosphorylation, photosynthesis. Mechanisms of regulations and control processes in cells-the basic principles.
Medicinal biophysics. Biophysical principles of selected diagnostic and therapeutical methods.
Radiation and environmental biophysics. The influence of physico-chemical factors of the environment on the living systems.

Recommended literature:

1. M. B. Jackson, Molecular and cellular biophysics, Cambridge University Press, 2006.
2. M. Daune, Molecular biophysics - Structures in motion, Oxford University Press, 2004.
3. R. Glaser, Biophysics, Springer Verlag, 2001.
4. M.V. Volkenštein, Biofizika, Nauka, Moskva 1988.
5. W.Hoppe and W. Lohmann, Biophysics, Springer Verlag, 1988.
6. D.G. Nichols and S.J. Ferguson, Bioenergetics 3, Academic Press, Elsevier Science Ltd., 2002.
7. D. T. Haynie, Biological thermodynamics, Cambridge University Press, 2001.

Course language:
Slovak

Course assessment
Total number of assessed students: 6

A	B	C	D	E	FX
16.67	33.33	50.0	0.0	0.0	0.0

Provides: doc. Mgr. Daniel Jancura, PhD.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 3

Recommended semester/trimester of the course:

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:

Course assessment
Total number of assessed students: 1522

A	B	C	D	E	FX
19.58	15.37	24.9	18.46	12.75	8.94

Provides: RNDr. Natália Raschmanová, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ VFM1a/15	**Course name:** General Physics I

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 4 / 2 **Per study period:** 56 / 28
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:
Monitoring tests during the calculus lessons
1. in the 6th week
2.in the 12th week
Final assessment is based on th results of :
- oral examination
assessment of the calculus lessons (written tests, overall performance during the lessons)

Learning outcomes:
Basic knowledge about the mechanics, molecular physics and thermodynamics.

Brief outline of the course:
Basic knowledge of the calculus, vector algebra. Standards and units. Kinematics. Dynamics. The principle of relativity in the classical mechanics. Gravitation. Mechanics of many-particle systems. The motio of rigid bodies. Deformation, elasticity. Mechanics of fluids and gases. Laws of ideal gases. Kinetic theory. The thermodynamic laws. Statistical character of the second law. Entropy. Molecular phenomena in liquids and solids. Phase transitions.

Recommended literature:
Hajko V., Daniel-Szabó J.: Základy fyziky, VEDA, Bratislava 1983.
Veis Š., Maďar J., Martišovits V.: Všeobecná fyzika I., Mechanika a molekulová fyzika, ALFA Bratislava, 1987.
Fuka J., Široká M.: Obecná fyzika I / skriptum /, PF Univ. Palackého, Olomouc 1983.
Hlavička A., a kol.: Fyzika pre pedagogické fakulty, SPN, Praha 1971.
Hajko V., a kol.:Fyzika v príkladoch, ALFA Bratislava 1983.
Ilkovič D.: Fyzika, SVTL Bratislava, 1962.
Slaviček V., Wagner J.: Fyzika pro chemiky, SNTL Praha 1971.
Krempaský J.: Fyzika, ALFA Bratislava 1982.

Course language:
Slovak

Course assessment
Total number of assessed students: 188

A	B	C	D	E	FX
28.19	17.55	19.15	12.23	19.68	3.19
Provides: doc. RNDr. Zuzana Ješková, PhD.					
Date of last modification: 01.03.2018					
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.					

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ VFM1b/15	**Course name:** General Physics II

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 4 / 2 **Per study period:** 56 / 28
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities: ÚFV/VF1a/12 or ÚFV/VFM1a/15

Conditions for course completion:
Test.
Oral examination.

Learning outcomes:
To obtain a general view on basic electric magnetic phenomena and ability to solve basic problems of this subject.

Brief outline of the course:
Electric field in the free space. Work of the forces in the electrostatic field. Electrostatic field and steady current. Current in electrolytes, semiconductors, gasses and vacuum. Thermoelctric effects. Magnetic field in the free space. The interaction of moving charges with the electric current. Quasi steady electric field. Electromagnetic induction. Energy of magnetic field. AC current and circuits with ac current. Multiphase AC current. Rotating magnetic field. Electric effects in the substances. Magnetic properties of the substancies. Magnetic polarization. Diamagnetism and paramagnetism, Magnetic ordering. Ferromagnetism.

Recommended literature:
I. S. Grant, W.R. Phillips, Electromagnetism, John Wiley&Sons, Ltd, England, 1990

Course language:
english

Course assessment
Total number of assessed students: 24

A	B	C	D	E	FX
33.33	8.33	29.17	4.17	4.17	20.83

Provides: prof. RNDr. Peter Kollár, DrSc., doc. RNDr. Adriana Zeleňáková, PhD., doc. RNDr. Erik Čižmár, PhD.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ VFM1c/15	**Course name:** General Physics III

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 4 / 2 **Per study period:** 56 / 28
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities: ÚFV/VF1b/03 or ÚFV/VFM1b/15

Conditions for course completion:
Exam+ 2 succesfull test from seminars

Learning outcomes:
The objective is to acquaint the students with the basis of oscilations, waves and optics.

Brief outline of the course:
Undamped oscilations, Mathematical, Physical and Torsional pendulum, Damped oscilations, Fourier transformation, Forced oscilations. Waves, their generation, waves equation.Interference. Huyghens principle. Reflection, difraction. Doppler effect. Waves speed in materials. Acoustics. Geometrical optics. Mirrors, lens. Fotometry.
Light as electromagnetic wave. Dispersion, absorption, interference, difraction, polarization. Photon's theory of light. Law of emision and absorption, Planck's law of radiation. Lasers.

Recommended literature:
1. A. Hlavička et al., Fyzika pro pedagogické fakulty, SPN, 1971
2. R.P. Feynman et al., Feynmanove prednášky z Fyziky I,II,III, ALFA, 1985
3. D. Halliday et al.,Fyzika-Vysokoškolská učebnice obecné fyziky, VUTIUM, 2010
4. J. Fuka, B. Havelka, Optika a atómová fyzika, SPN,1961
5. A. Štrba, Všeobecná Fyzika 3 – Optika, ALFA, 1979

Course language:
slovak

Course assessment
Total number of assessed students: 57

A	B	C	D	E	FX
36.84	19.3	26.32	12.28	5.26	0.0

Provides: prof. RNDr. Rastislav Varga, DrSc.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ VFM1d/15	**Course name:** General Physics IV

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 4 / 2 **Per study period:** 56 / 28
Course method: present

Number of credits: 6

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities: ÚFV/VF1c/10 or ÚFV/VF1c/12 or ÚFV/VFM1c/15

Conditions for course completion:
written tests
exam

Learning outcomes:
Basic knowledge about the atomic structure and spectra and nuclei, and elementary particles. Basic experimental methods in nuclear physics and passage of nuclear radiation through media.

Brief outline of the course:
Wave character of particles. De Broglie waves. Experimental evidence for de Broglie waves. Structure and models of atoms. Atomic spectra. Magnetic properties of atoms. X-ray spectra. Basic characteristics of the atomic nuclei. Nuclear forces and models. Radioactivity. Applications of radioactivity. Nuclear reactions. Elementary particles, basic properties and classification. Types of interactions. Resonances. Cosmic rays. Passage of particles through matter. Detectors. Accelerators.

Recommended literature:
1. Beiser A., Úvod do moderní fyziky, Praha, 1975.
2. Vanovič J.: Atómová fyzika, Bratislava, 1980.
3. Griffiths D. , Introduction to Elementary Particles, WILEY, 1987.
4. Úlehla I., Suk M., Trka Z.: Atómy, jádra, částice, Praha, 1990.
5. Síleš E., Martinská G.: Všeobecná fyzika IV, skriptá PF UPJŠ, 2. vydanie, Košice, 1992.
5. Hajko V. and team of authors, Physics in experiments, Bratislava, 1997.
6. Nosek D., Jádra a částice (Řešené příklady), Matfyzpress, MFF UK, Praha 2005,
7. Brandt S., The harvest of a century, Discoveries of modern physics in 100 episodes, Oxford, 2009.

Course language:
slovak and english

Course assessment
Total number of assessed students: 16

A	B	C	D	E	FX
81.25	6.25	12.5	0.0	0.0	0.0

Provides: prof. RNDr. Stanislav Vokál, DrSc., doc. RNDr. Janka Vrláková, PhD., doc. RNDr. Adela Kravčáková, PhD.
Date of last modification: 22.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KFaDF/ VKFV/07	**Course name:** Selected Topics in Philosophy of Education (General Introduction)
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 2	
Recommended semester/trimester of the course: 3., 5.	
Course level: I.	
Prerequisities: KFaDF/DF1/05	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	

Course assessment

Total number of assessed students: 0

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

Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof.
Date of last modification: 23.08.2017
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ZAC2/10	**Course name:** Basic 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 credits: 6

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities:

Conditions for course completion:
inorganic part: one test in 6th week; 50 points.
organic part: one test in 12th week; 50 points.
At least 50% of points required from both.
Terminal examination by written form, 100 points; 50 points from inorganic part and 50 points from organic parts.

Learning outcomes:
The main goal of this subject is to provide a basic overview of inorganic and organic chemistry for biology students.

Brief outline of the course:
Introduction to general and inorganic chemistry. Periodic systems of elements. Atomic structure. Chemical bonds. Relationship between structure and properties of substances. Solutions. Transition and non transition elements and their compounds. Coordination and biocoordination compounds. Elements essential for living organisms and their function. Biometals. Biominerals.
Introduction to organic chemistry. Saturated and unsaturated hydrocarbons and their derivatives. Heterocyclic compounds. Carbohydrates. Lipids. Aminoacids and proteins. Enzyms and vitamins. Nucleic acids. Metabolism and energy.

Recommended literature:
1. Caret C. R., Denniston K.J., Topping J. J.: Principles and Applications of Inorganic, Organic and Biological Chemistry. WCB, Boston 1997.
2. R.Chang: Chemistry, McGRAW-HILL,Inc., New York 1991.
3. K. C. Timberlake: Organic and Biological Chemistry, Structure of Life. Benjamin Cummings Publishing Company, Inc., San Francisco 2002.

Course language:

Course assessment
Total number of assessed students: 1081

A	B	C	D	E	FX
20.44	25.35	26.83	16.84	9.99	0.56

Provides: doc. RNDr. Zuzana Vargová, Ph.D., RNDr. Mária Vilková, PhD.
Date of last modification: 26.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ ZFP1a/03	**Course name:** Physics Practical I

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

Number of credits: 3

Recommended semester/trimester of the course: 2.

Course level: I.

Prerequisities:

Conditions for course completion:
The active work during semester and hand in all reports.
Vindication of reports.

Learning outcomes:
Developing proper laboratory habits, skills and verify their theoretical knowledge.

Brief outline of the course:
The goal of this laboratory exercises is to familiarize the students with measurement methods, with kinds and calculus of mistakes, with measured results processing, and with presentation of results. The students gain practical skills, and verify their theoretical knowledge of first semester introductory physics course. They develop proper laboratory habits.
Laboratory assignment:
1. Density measurements of liquids and solids.
2. Radius measurements of spherical cap. Measurements of surface using planimeter.
3. Gravitational acceleration measurements using mathematical and physical pendulum.
4. Moment of inertia measurement using physical and torsion pendulum.
5. Measurements of Young's modulus.
6. Measurement of coefficient of viscosity.
7. Measurement of the speed of sound.
8. Measurements of general gas constant and Boltzmann constant.
9. Measurements of thermal expansivity of air.
10. Measurements of thermal capacity of matter.
11. Measurement of the surface tension.

Recommended literature:
Degro, J., Ješková, Z., Onderová, Ľ., Kireš, M.: Základné fyzikálne praktikum I. (Basic physical measurements I), Ed. PF UPJŠ Košice 2007.
Standards STN ISO 31. Slovenský inštitút normalizácie v Bratislave (Slovak institute of technical standards in Bratislava),1997.

Ješková, Z.: Computer based experiments in thermodynamics using IP COACH,ed. PF UPJŠ in Košice, 2004.

Course language:
english

Course assessment
Total number of assessed students: 224

A	B	C	D	E	FX
58.04	25.0	12.05	4.02	0.89	0.0

Provides: doc. RNDr. Adriana Zeleňáková, PhD., doc. RNDr. Marián Kireš, PhD., doc. RNDr. Ján Füzer, PhD., doc. RNDr. Jozef Hanč, PhD.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ZFP1b/03	**Course name:** Physics Practical II

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

Number of credits: 3

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities: ÚFV/ZFP1a/03

Conditions for course completion:
Meausirnig of experimental tasks, their appreciation in the form of a written report, defending. Further evaluation is also a good theoretical preparation for the measurement of the task.

Learning outcomes:
The objectives of the laboratory are:
a. To gain some physical inside into some of the concepts presented in the lectures.
b. To gain some practice in data collection, analysis and interpretation of resumance.
c. To gain experience and report writing presentation and results.

Brief outline of the course:
Students on practical exercises are working in pairs experimental tasks in the field of electrical, electromagnetic and magnetic properties of matters.

Recommended literature:
Tumanski S, Handbook of magnetic measurements, CRC press, 2011.
Fiorillo F, Characterization and Measurement of Magnetic Materials, Elsevier, 2004.

Course language:
Slovak

Course assessment
Total number of assessed students: 190

A	B	C	D	E	FX
63.16	21.58	13.16	1.58	0.0	0.53

Provides: doc. RNDr. Adriana Zeleňáková, PhD., doc. RNDr. Ján Füzer, PhD.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ ZFP1c/14	**Course name:** Physics Practical III

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

Number of credits: 3

Recommended semester/trimester of the course: 4.

Course level: I.

Prerequisities:

Conditions for course completion:
Measurements of experimental tasks, their evaluation in the form of a written report, which must be defended. As a part of evaluation there is is also a good theoretical preparation for the measurement of the task.

Learning outcomes:
To gain some physical inside into some of the concepts presented in the lectures. b. To gain some practice in data collection, analysis and interpretation of resumance. c. To gain experience and report writing presentation and results.

Brief outline of the course:
Oscilations. Pendulum. Composition and decomposition of oscillations. Resonance. The speed of sound. Refractive index. Lense's focal length. Interference. Diffraction. Diffraction and reflection of waves. Polarization. The speed of light. Quantum optics.

Recommended literature:
Degro,J., Ješková, Z., Onderová,Ľ., Kireš,M.: Základné fyzikálne praktikum I, PF UPJŠ Košice, 2006
P. Kollár a kol. Základné fyzikálne praktikum II, PF UPJŠ Košice, 2006
J. Brož Základy fysikálních měření, SPN Praha, 1981.

Course language:
slovak or english

Course assessment
Total number of assessed students: 42

A	B	C	D	E	FX
83.33	9.52	2.38	2.38	2.38	0.0

Provides: doc. RNDr. Marián Kireš, PhD., doc. RNDr. Ján Füzer, PhD.

Date of last modification: 01.03.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ ZFP1d/14	**Course name:** Physics Practical IV

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

Number of credits: 3

Recommended semester/trimester of the course: 5.

Course level: I.

Prerequisities:

Conditions for course completion:
good theoretical preparation for measurement of the tasks, written tests,measurements of the experimental tasks, written reports of measurements

Learning outcomes:
Practice in nuclear physics.

Brief outline of the course:
Introduction to measurements. Dosimetry measurements. Analysing power of coincidence circuit by random coincidences. Statistic distribution of measured quantities. Measurement time scale selection. Absorption of beta rays. Backward scattering of beta rays. Scintillation gamma spectrometer. Determination of 60Co preparat activity using beta-gamma coincidences. Emulsion detector. Franck Hertz experiment. Beta - spectroscopy.Energy dependence of the gamma-absorption coefficient.

Recommended literature:
1. J.Vrláková, S.Vokál: Základné fyzikálne praktikum III, skriptá PF UPJŠ, Košice, 2012, dostupné
na
http://www.upjs.sk/public/media/5596/Zakladne-fyzikalne-praktikum-III.pdf

Course language:
slovak

Course assessment
Total number of assessed students: 50

A	B	C	D	E	FX
86.0	10.0	2.0	2.0	0.0	0.0

Provides: doc. RNDr. Janka Vrláková, PhD., doc. RNDr. Adela Kravčáková, PhD., RNDr. Filoména Sopková

Date of last modification: 22.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ZMF/17	**Course name:** Introduction to Mathematics for Physicists

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

Number of credits: 3

Recommended semester/trimester of the course: 1.

Course level: I.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Course assessment
Total number of assessed students: 227

A	B	C	D	E	FX
41.41	18.94	18.5	10.57	10.57	0.0

Provides: RNDr. Tomáš Lučivjanský, PhD., doc. RNDr. Jozef Hanč, PhD.

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ ZO1/15	**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 credits: 4

Recommended semester/trimester of the course: 3.

Course level: I.

Prerequisities: ÚBEV/PMZ/10

Conditions for course completion:

Learning outcomes:
Basis of Invertebrata taxonomy including taxonomy of Monocytozoa. 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:

Course assessment
Total number of assessed students: 208

A	B	C	D	E	FX
6.73	19.23	20.19	26.44	19.71	7.69

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 5

Recommended semester/trimester of the course: 3.

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:

Course assessment
Total number of assessed students: 1043

A	B	C	D	E	FX
7.96	15.34	21.67	20.42	25.02	9.59

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 6

Recommended semester/trimester of the course:

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:

Course assessment
Total number of assessed students: 877

A	B	C	D	E	FX
23.26	23.6	25.31	17.9	7.98	1.94

Provides: prof. RNDr. Ľubomír Kováč, CSc.

Date of last modification: 23.02.2018
Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

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 credits: 5

Recommended semester/trimester of the course: 4.

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:

Course assessment
Total number of assessed students: 910

A	B	C	D	E	FX
22.75	27.36	19.23	16.48	10.11	4.07

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚBEV/ZOO1/15	**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 credits: 4

Recommended semester/trimester of the course: 4.

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:

Course assessment
Total number of assessed students: 142

A	B	C	D	E	FX
0.7	19.72	17.61	21.13	26.06	14.79

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

Date of last modification: 23.02.2018

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

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

Number of 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:

Course assessment
Total number of assessed students: 33

abs	n
12.12	87.88

Provides: Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.

Date of last modification: 18.08.2017

Approved: Guaranteeprof. RNDr. Peter Kollár, DrSc.Guaranteeprof. RNDr. Pavol Mártonfi, PhD.