CONTENT

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ NMR1/00	**Course name:** 1D & 2D NMR Spectroscopy

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

Number of ECTS credits: 6

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Active student´s work at seminars and individual homework, written examinations in 7th and 14th semestral week.
Terminal examination in written form (4 exercises from combined applications of 1D a 2D NMR and other spectral methods) and oral form (3 themes) joining theoretical knowledge with a practical solution of selected NMR problems and exercises.

Learning outcomes:
Students will learn how to analyze structure and properties of organic, inorganic and biomolecular compounds by 1D and 2D proton and carbon NMR spectra, quantitative NMR analysis, and practical applications in various fields of science and technology.

Brief outline of the course:
Theoretical principles of nuclear magnetic resonance (NMR), basic NMR pulse techniques and Fourier transformation, NMR spectrometers, description of NMR by vector models. Parameters of one- (1D) and two-dimensional (2D) NMR spectra, practical application of 1H and 13C NMR spectra and basic correlated 2D spectra for structure and stereochemical arrangement, elucidation of reaction mechanisms, molecular dynamics, physico-chemical properties and quantitative analysis of chemical compounds.

Recommended literature:
1. Friebolin H.: Basic One- and Two-Dimensional NMR Spectrocopy, 5. Ed., Wiley, 2010.
2. T. D. W. Claridge: High-Resolution NMR Techniques in Organic Chemistry, Elsevier, 1999.
3. Atta-ur-Rahman, M. I. Choudhary: Solving Problems with NMR spectroscopy, Academic Press 1996.
4. H.-O. Kalinowski, S. Berger, S. Braun: Carbon-13 NMR Spectroscopy. Wiley, New York 1988.
5. A. E. Derome: Modern NMR Techniques for Chemistry Research. Pergamon Press, Oxford 1987.
6. E. Pretsch, B. Buhlmann, C. Affolter: Structure Determination of Organic Compounds. Tables of Spectral Data. Springer Verlag, Berlin 2000.
7. E. Breitmaier: Structure Elucidation by NMR in Organic Chemistry: A Practical Guide, 3rd Ed., Wiley, 2002.

8. E. Breitmaier, W. Voelter: Carbon-13 NMR Spectroscopy. VCH Weinheim, 1990.

Course language:

Notes:

Course assessment
Total number of assessed students: 160

A	B	C	D	E	FX
38.75	25.0	23.75	10.63	1.88	0.0

Provides: doc. RNDr. Ján Imrich, CSc.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ AOL1/06	**Course name:** Analysis of Organic Substances

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

Number of ECTS credits: 6

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Examination.

Learning outcomes:
Methods of analysis of organic substances.

Brief outline of the course:
Characteristics, objectives, methods and basic procedures in qualitative and quantitative analysis of organic compounds (AOC). Evidence and identification, molecular, elemental and structural-analytical methods in AOC. Groups solubility, color and precipitation reactions, identification and determination of functional groups. Optical, electrochemical, separation and other methods used in analysis of organic compounds. Some examples of the use of knowledge for the purposes of research and practice.

Recommended literature:
1. Jerry R. Mohrig et al. Organic Qualitative Analysis, W. H. Freeman and Company, 2003
2. H.T. Openshaw, A Laboratory Manual of Qualitative Organic Analysis, CUP Archive, 1976
3. Oliver Kamm, Qualitative organic analysis, John Wiley & Sons, 1923, Open Library

Course language:

Notes:

Course assessment
Total number of assessed students: 32

A	B	C	D	E	FX
71.88	21.88	3.13	3.13	0.0	0.0

Provides: doc. RNDr. Katarína Reiffová, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/APO1/02	**Course name:** Analysis of Psychotropic and Narcotic Substances

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

Number of ECTS credits: 4

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
Survey of classification, effects/mechanism and properties of psychotropic and narcotic substances, drug dependences and methods used in the (toxicological) analysis of drugs.

Brief outline of the course:
Drug, drug dependence. Psychotropic and narcotic substances - classification, properties and laws. Dose and tolerance, therapy, prevention. Pharmacokinetics of the drug. Biological effects, biotransformations, receptors. The methods used in the analysis of the drugs (clinical, forensic analysis) - opiates, cocaine, amphetamines and their analogues, hallucinogenics, cannabis products, etc.

Recommended literature:
1. M. D. Cole: The Analysis of Controlled Substances, Wiley 2003.
2. E. Hodgson: A Textbook of Modern Toxicology, Wiley 2004.

Course language:

Notes:

Course assessment
Total number of assessed students: 235

A	B	C	D	E	FX
95.32	3.83	0.85	0.0	0.0	0.0

Provides: doc. RNDr. Taťána Gondová, CSc.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ACHSP/14/15	**Course name:** Analytical Chemistry

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

Number of ECTS credits: 4

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 44

A	B	C	D	E	FX
50.0	25.0	20.45	4.55	0.0	0.0

Provides:

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ANCH2/06	**Course name:** Analytical Chemistry III.

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

Number of ECTS credits: 6

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Test
Test

Learning outcomes:
Advanced theoretical and practical knowledge of of instrumental methods of analysis.

Brief outline of the course:
Analytical chemistry. Objects of analysis. Instrumental equipment of a modern analytical laboratory. Relationship between analytical chemistry and other scientific branches. Problems and trends in recent analytical chemistry. Speed and factors affecting the speed of analysis. Validation of analytical methods. Non-destructive methods of analysis, principle, utility. Distance analysis. Automation of analysis, examples. Flow analysis – FIA and SIA. Analytical reaction, chemical equilibrium in solutions. Kinetic analytical methods. Radiochemical analytical methods. Secondary Ion Mass Spectrometry. X-ray Photoelectron spectrometry. Mass pectrometry. Roentgen spectroscopic methods.

Recommended literature:
1. H.H. Willard, L.L. Merritt, Jr., J.A. Dean, F.A. Settle, Jr.: Instrumental Methods of Analysis, Wadsworth Publ. Co., Belmont (CA) 1988, ISBN 0-534-08142-8

Course language:

Notes:

Course assessment
Total number of assessed students: 79

A	B	C	D	E	FX
35.44	34.18	24.05	1.27	3.8	1.27

Provides: prof. Dr. Yaroslav Bazeľ, DrSc., prof. Mgr. Vasiľ Andruch, DSc.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ANS/05	**Course name:** Analytical Sensors

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Test
Examination

Learning outcomes:
Getting a knowledge about the theoretical principles and application of the analytical sensors.

Brief outline of the course:
Optical sensors. Materials for optical sensors. Design of the optical biosensors. Electrochemical sensors.

Recommended literature:
1. Janata J. Principles of Chemical Sensors, Plenum Press, London, 1989.
2. Lakowicz J. R. Principles of Fluorescence Spectrocopy, Plenum Press, New York, 1983.
3. Jameson D. M. Fluorescence Principles, Methodologies and Applications, CRC Press, 1984.
4. Narayanaswamy R., Wolfbeis O.S. Optical Sensors, Springer, 2004, 421 p.
5. Brinker C. J., Scherer G. W. Sol-gel Science, Academic Press, New York, 1990.

Course language:

Notes:

Course assessment
Total number of assessed students: 62

A	B	C	D	E	FX
69.35	1.61	16.13	8.06	4.84	0.0

Provides: prof. Mgr. Vasiľ Andruch, DSc.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KFaDF/ AFS/05	**Course name:** Ancient Philosophy and Present Times

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 31

A	B	C	D	E	FX
80.65	6.45	6.45	0.0	6.45	0.0

Provides: Doc. PhDr. Peter Nezník, CSc.

Date of last modification: 12.02.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ AAS1/03	**Course name:** Atomic Spectrochemistry

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

Number of ECTS credits: 6

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
On the basis of the practical results and seminary works.
On the basis of continuous assessment and oral examination.

Learning outcomes:
Theoretical information and practical experience with atomic absorption and emission methods used in analytical chemistry.

Brief outline of the course:
Information and the role of atomic absorption and emission spectroscopy in analytical chemistry. History of the development of spectral methods.
Theoretical foundations, principles and classification of optical methods. Experimental foundations of spectral methods. Atomic absorption spectrometry. Atomic emission spectrometry.
Atomic fluorescence spectrometry. X-ray spectrometry. Absorption spectroscopy in the visible, ultraviolet and near-infrared region and its analytical applications.

Recommended literature:
I.Němcová, L. Čermáková, P. Rychlovský: Spektrometrické analytické metódy. Karolinum , Praha, 1997.
D. A. Skoog, J. J. Leary: Instrumental Analytics. Springer, Berlin, 1996.
B. Welz, M. Sperling: Atomic Absorption Spectrometry,Wiley-VCH, Weinheim, 1998.
H. Günzler, A. Wiliams: Handbook of Analytical Techniques. Wiley-VCH, Weinheim, 2001.
G. Gauglitz, T. Vo-Dinh: Handbook of Spectroscopy. Wiley-VCH, Weinheim, 2003.

Course language:

Notes:

Course assessment
Total number of assessed students: 86

A	B	C	D	E	FX
37.21	23.26	20.93	13.95	4.65	0.0

Provides: doc. Ing. Viera Vojteková, PhD.

Date of last modification: 03.05.2015
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ BACH1/03	**Course name:** Bioanalytical Chemistry
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 2 / 1 **Per study period:** 28 / 14 **Course method:** present	
Number of ECTS credits: 5	
Recommended semester/trimester of the course: 1.	
Course level: II.	
Prerequisities:	
Conditions for course completion: Written test Oral examination	
Learning outcomes: Theoretical knowledge and practical experience regarding application of analytical chemistry and analytical methods to laboratory medicine.	
Brief outline of the course: Introduction to Bioanalytical Chemistry, biological samples classification. Factors affecting analytes in biological samples. Collection, transport and storage of biological samples. Selected procedures of sample pretreatment Control and management of quality in clinical laboratory. Enzymes in bioanalysis. Mechanism of enzyme catalysis. Enzymes like analytes and analytical reagents. Moderators of enzyme activity. Introduction to Immunochemical methods, Precipitation and Aglutination methods. Immunodiffusional methods. Radioimmunoanalytic methods (RIA). Nonisotopic methods (EIA, ELISA, LIA, FIA). Investigative procedures in medical microbiology. Principles miniaturization of analytical procedures in clinical chemistry, microchips, nanochips, sensors and biosensors.	
Recommended literature: 1. Mikkelsen, S. R., Cortón, E.: Bioanalytical Chemistry, Wiley, 2004. 2. Wilson, I.: Bioanalytical Separations 4, (Handbook of Analytical Separations), Elsevier, 2003. 3. Suelter, C. H., Kricka, L. J.: Methods of Biochemical Analysis, Vol.37, Bioanalytical Instrumentation, Wiley, 1994. 4. Rodriguez-Diaz, R., Wehr, T., Tuck, S.: Analytical Techniques for Biopharmaceutical Development, Marcell Dekker, 2005.	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 93

A	B	C	D	E	FX
33.33	37.63	18.28	9.68	1.08	0.0

Provides: doc. RNDr. Katarína Reiffová, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ BFC1a/01	**Course name:** Biophysical Chemistry I

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

Number of ECTS credits: 5

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

Course level: II.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:

Brief outline of the course:
Matter and its demonstration in living systems
Space and time connections in biological systems
Energy and mass connections in biological systems
Physicochemical properties of water and cell liquids
Reaction kinetics
Ligand binding
Nonequilibrium thermodynamics
Dynamics of conservative systems, chaos
Dissipative systems, attractors
Stability of biomacromolecules
Interfaces and membranes, membrane transports
Dynamics of complex biochemical process
Structuralization of biosystems induced by diffusion

Recommended literature:
Cantor,C.R.,Schimmel,P.R Biophysical Chemistry, W.H. Freeman and Co., S. Francisco,1980
P.Glansdorff, I.Prigogine, Thermodynamics theory of structure, stability and fluctuations, Willey 1971
Voet,D. Voet,J.G. Biochemistry, John Willey @Sons, 1990
Kersal E. van Holde, W. Curtis Johnson, P. Shing Ho: Principles of Physical Biochemistry, Prentise Hall, 1998
Articles from Journals
Marschall, A.G., Biophysical Chemistry, John Wiley & Sons, N.York, 1978
Hoppe, W., Lohmann, W., Markl, H., Ziegler, H., (eds.), Biophysics, Springer V., Berlin, 1983
Peitgen, H. O., Jurgens, H., Saupe, D., Fractals for the Classroom, Springer-Verlag, NY, 1992
Avnir,D (ed.)., The Fractal Approach to Heterogeneous Chemistry, John Wiley &S., NY,1989
Winfree, A. T., The Geometry of Biological Time, Springer-Verlag, NY, 1980

Harrison, L. G., Kinetic Theory of Living Pattrern, Cambridge Univ. Pres., NY, 1993

Course language:

Notes:

Course assessment
Total number of assessed students: 173

A	B	C	D	E	FX
12.14	16.18	35.84	23.7	12.14	0.0

Provides: prof. Ing. Marián Antalík, DrSc.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KFaDF/KDF/05	**Course name:** Chapters from History of Philosophy of 19th and 20th Centuries (General Introduction)

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 10

A	B	C	D	E	FX
50.0	20.0	10.0	0.0	10.0	10.0

Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ACM1/06	**Course name:** Chemometrics

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

Number of ECTS credits: 6

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
On the basis of the tests and seminary works
On the basis of the continuous assesment and examination.

Learning outcomes:
Knowledge about the correct and theoretically based evaluation of analytical results and methods.
Knowledge about the methods of validation and accreditation of laboratories.
Knowledge about the result uncertainties and methods of decision statistics.

Brief outline of the course:
The principles of the mathematic- statistical methods used in analytical chemistry. Probability distribution of the measuring results. Classic and robust estimation of the mean value and variance. Statistical tests and their application. Accuracy, precision, and reliability of the results. Uncertainity of the results. Calibration in the analytical chemistry, linear and nonlinear models.
Evaluation of the analytical methods, the chosen optimization approaches. Solving of the typical examples in the frame of the practical lectures.

Recommended literature:
R. G. Brereton: Chemometrics., Wiley, Chichester, 2003
M. Meloun, J. Militký: Kompendium statistického zpracování dat., Academia, Praha 2006

Course language:

Notes:

Course assessment
Total number of assessed students: 86

A	B	C	D	E	FX
33.72	29.07	24.42	6.98	5.81	0.0

Provides: doc. Ing. Viera Vojteková, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ CHRA1/03	**Course name:** Chromatographic Analysis

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

Number of ECTS credits: 6

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

Course level: II.

Prerequisities:

Conditions for course completion:
Examination.

Learning outcomes:

Brief outline of the course:
General characteristics of chromatographic system and chromatographic separation. Analyte retention in chromatography, retention indices. Models used for chromatographic system description. Parameters affecting quality of chromatographic separation. Sensitivity, separated analytes, separation time, optimisation of chromatographic process. General equation of chromatography.
Evaluation of retention and selectivity of chromatographic process. Stationary phase. Qualitative chromatographic analysis. Quantitative analysis methods, sample preparation. System of analyte separation. Identification in chromatographic analysis.

Recommended literature:
D. A. Skoog, J. J. Leary: Principles of Instrumental Analysis, Saunders, 1992.

Course language:

Notes:

Course assessment
Total number of assessed students: 59

A	B	C	D	E	FX
83.05	6.78	6.78	0.0	3.39	0.0

Provides: prof. RNDr. Andrej Oriňak, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ RP/14	**Course name:** Class Project
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 6	
Recommended semester/trimester of the course:	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 146	

abs	n
98.63	1.37

Provides:
Date of last modification: 03.05.2015
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/KK/07	**Course name:** Communication and Cooperation
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 3.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment

Total number of assessed students: 281

abs	n	z
98.22	1.78	0.0

Provides: Mgr. Ondrej Kalina, PhD., Mgr. Lucia Hricová, PhD.
Date of last modification: 04.09.2019
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ DPO/14	**Course name:** Diploma Thesis and its Defence

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

Number of ECTS credits: 20

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 140

A	B	C	D	E	FX
65.71	25.0	5.71	2.14	1.43	0.0

Provides:

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ EMST/05	**Course name:** Electrophoretic Methods

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
Basic principles of electromigration techniques and their application in practise.

Brief outline of the course:
Principles and classification of electromigration techniques - Zone electrophoresis, The moving boundary method, Focusing methods, Capillary isotachophoresis (cITP), Micellar electrokinetic chromatography (MEKC).Capillary zone electrophoresis (CZE). Principle of separation in an electric field, the phenomena accompanying separation in an electric field - electroosmotic pressure, Joule heat, diffusion, gravity, adsorption, instrumentation, detection, qualitative and quantitative analysis, electrophoretic separation on a microchip. Electrophoresis of nucleic acid, Elektrophoresis of serum proteins

Recommended literature:
1.Handbook of Capillary Electrophoresis, 2nd Ed., CRC, Boca Raton, 1997
2.P.Boček:Basic course and Advanced course of Isotachophoresis,Institute of Analytical Chemistry, Czech Academy of Science, Brno, 1984

Course language:

Notes:

Course assessment
Total number of assessed students: 9

A	B	C	D	E	FX
33.33	66.67	0.0	0.0	0.0	0.0

Provides: doc. RNDr. Katarína Reiffová, PhD.

Date of last modification: 04.02.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ AZP1/04	**Course name:** Environmental Analytical Chemistry

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

Number of ECTS credits: 6

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

Course level: II.

Prerequisities:

Conditions for course completion:
Test / Exam

Learning outcomes:
Getting knowledge about the methods of environmental analysis.

Brief outline of the course:
Sampling techniques and sample pretreatment in environmental analysis. Quality assurance for environmental analysis. Good laboratory practice. Application of the chemometric tools in environmental analysis. Analysis of water, soil, ore, sediment, air, food samples. Analysis of environmental samples by spectroscopic methods. Separation techniques in environmental analysis. Application of electrochemical methods for environmental samples.

Recommended literature:
1. A.M. Ure, C.M. Davidson, Chemical Speciation in the Environment. Blackie, London 1995.
2. J.R. Dean, Extraction Methods for Environmental Analysis. Wiley, 1988.
3. H.D. Belitz, W. Grosch, P. Schieberle, Food Chemistry, Springer Verlag, 2004.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 244

A	B	C	D	E	FX
45.9	16.8	18.03	7.38	11.89	0.0

Provides: prof. Mgr. Vasiľ Andruch, DSc., RNDr. Rastislav Serbin, PhD., RNDr. Jana Šandrejová, PhD., RNDr. Lívia Kocúrová, PhD.

Date of last modification: 31.01.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ EMDP/03	**Course name:** Experimental Methods to Master´s Thesis

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 6 **Per study period:** 84
Course method: present

Number of ECTS credits: 6

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 368

A	B	C	D	E	FX
94.29	3.8	0.54	0.54	0.82	0.0

Provides: RNDr. Martin Vavra, PhD., doc. RNDr. Peter Pristaš, CSc., doc. RNDr. Peter Javorský, DrSc., doc. RNDr. Ján Imrich, CSc., doc. RNDr. Mária Kožurková, CSc., prof. Ing. Marián Antalík, DrSc., prof. RNDr. Juraj Černák, DrSc., prof. RNDr. Katarína Györyová, DrSc., prof. RNDr. Jozef Gonda, DrSc., prof. RNDr. Andrej Oriňak, PhD., doc. RNDr. Zuzana Vargová, Ph.D., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Miroslava Martinková, PhD., prof. RNDr. Renáta Oriňaková, DrSc., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Erik Sedlák, PhD., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Viktor Víglaský, PhD., doc. RNDr. Katarína Reiffová, PhD., RNDr. Miroslava Matiková-Maľarová, PhD., doc. RNDr. Juraj Kuchár, PhD., RNDr. Nataša Tomášková, PhD., RNDr. Andrea Morovská Turoňová, PhD., RNDr. Dušan Koščík, CSc., RNDr. Daniela Kladeková, CSc., RNDr. Slávka Hamuľaková, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD., RNDr. Zuzana Kudličková, PhD., RNDr. Lívia Kocúrová, PhD., prof. Mgr. Vasiľ Andruch, DSc., prof. Dr. Yaroslav Bazeľ, DrSc., RNDr. Ladislav Janovec, PhD., doc. Ing. Viera Vojteková, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ SKACH1/06	**Course name:** Forensic and Clinical Analytical Chemistry

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2., 4.

Course level: II.

Prerequisities:

Conditions for course completion:
Examination.

Learning outcomes:
Application of analytical methods in forensic medicine.

Brief outline of the course:
Basic principles and definition of subject. Basic criminalistic categories. Criminalistic track. Criminalistic technology. Criminalistic methods, resources, procedures and operations. Introduction to forensic chemistry. Chemical, physical and physicochemical methods of research tracks and material evidence. Fingerprints. Forensic biology. Forensic toxicology.

Recommended literature:
1.A. Mozayani, C.Noziglia: The Forensic Laboratory Handbook. Procedures and Practice, Springer, 2006
2.H.Duffus, H.G.J.Worth: Fundamental Toxicology, Springer, 2006
3.R.Bertholf, R.Winecker: Chromatographic Methods in Clinical Chemistry and Toxicology, Wiley. 2007

Course language:

Notes:

Course assessment
Total number of assessed students: 49

A	B	C	D	E	FX
55.1	30.61	14.29	0.0	0.0	0.0

Provides: doc. RNDr. Katarína Reiffová, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ PC1/06	**Course name:** Gas Chromatography

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Laboratory report.
Exam.

Learning outcomes:
Detailed information about GC application.

Brief outline of the course:
Introduction to gas chromatography, basic description of chromatographic process.Chromatographic parameters. Gas chromatography, retention volume, relation between Vg and K. Mobile phase flow rate effect.Mobile phase origin effect. Sample injection in GC. Direct injection into hot injector.split and splitless injection, on-column injection, injector with programmed temperature. Injection by thermodesorption, pyrolysis injector. Valves and loops. Detailed variations in GC sampling. Chromatographic columns in GC. Stationaty phase effects. SOL-GEL and FORTE columns. Detection in GC. Microdetectors and integrated systems. Multidimensional GC, tandem GC, hyphenated GC. Qualitative and quantitative analysis. Novel application in GC. Supercritical GC.

Recommended literature:
1. D.A. Skoog, J.J.Leary: Principles of Instrumental Analysis, Saunders, 1992.
2. K.Grob: On-Column Injection in Capillary Gas Chromatography. Huthig, 1991.

Course language:

Notes:

Course assessment
Total number of assessed students: 59

A	B	C	D	E	FX
66.1	16.95	10.17	3.39	3.39	0.0

Provides: prof. RNDr. Andrej Oriňak, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

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 ECTS credits: 4

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 739

A	B	C	D	E	FX
60.89	13.8	12.58	8.66	3.38	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: 25.03.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ CHHS/07	**Course name:** Hydrochemistry

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

Number of ECTS credits: 6

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

Course level: II.

Prerequisities:

Conditions for course completion:
Test / Exam

Learning outcomes:
Getting knowledge about the hydrochemistry.

Brief outline of the course:
Types of natural waters and their properties. Chemical content and properties of nature water. Surface waters. Chemical content and properties of surface waters. Fundamentals of aquatic chemistry. The hydrologic cycle. Mineral waters, their classification. Chemical content and properties of mineral waters. Underground water. Processes influencing the content of underground water. Sea water. Waste water. Content and properties of waste water. Basic strages of water analysis. Sampling. Physical properties of water. Methods of analysis of water chemical content. Biochemical oxygen demand. Dissolved oxygen. Distributing diagrams. Interaction of content of water and sediments. Test-methods in water analysis. Automatic monitoring stations. Sensor systems. Requirements for water quality.

Recommended literature:
1. Handbook of Water and Wastewater Treatment Technologies. Ed. By Nicholas P Cheremisinoff, Butterworth Heinemann, 2001. 576 p.
2. Principles of Water Quality Control, Ed. by Thy Tebbutt, Butterworth Heinemann, 1997. 288 p.
3. Water Technology. Ed. by N. F. Gray, Butterworth Heinemann, 2005. 600 p.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 119

A	B	C	D	E	FX
25.21	19.33	16.81	19.33	19.33	0.0

Provides: prof. Mgr. Vasiľ Andruch, DSc., RNDr. Rastislav Serbin, PhD., RNDr. Lívia Kocúrová, PhD.
Date of last modification: 31.01.2020
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KFaDF/ IH2/03	**Course name:** Idea Humanitas 2 (General Introduction)

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 8

A	B	C	D	E	FX
87.5	12.5	0.0	0.0	0.0	0.0

Provides: Doc. PhDr. Peter Nezník, CSc.

Date of last modification: 12.02.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ACPE1/03	**Course name:** Industrial Ecology

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: I., II.

Prerequisities:

Conditions for course completion:
On the basis of the written tests and seminary work.
On the basis of the continuous assessment and examination.

Learning outcomes:
The concept of industrial ecology in the frame of environmental chemistry.

Brief outline of the course:
The concept of industrial ecology.
Selected topics of environmental chemistry in the context of industrial ecology.
Selected topics of industrial, clinical toxicology and ecotoxicology.

Recommended literature:
S. E. Manahan: Industrial Ecology., CRC Press, New York, 1999.
S. E. Manahan: Environmental Chemistry. , CRC Press, New York, 2005.

Course language:

Notes:

Course assessment
Total number of assessed students: 158

A	B	C	D	E	FX
25.95	19.62	25.32	15.82	12.66	0.63

Provides: doc. Ing. Viera Vojteková, PhD.

Date of last modification: 01.02.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/KCHR/06	**Course name:** Liquid Chromatography

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
Advanced knowledges about LC applications

Brief outline of the course:
Theoretical principles of liquid chromatography. Selection and optimisation of separation process. Sample pretreatment. New trends in HPLC techniques - uLC, chiral analysis, multidimensional chromatography, combined systems with LC. Applications.

Recommended literature:
Skoog D.A.: Principles of Instrumental Analysis. Saunders, New York 1985.
Mondello L., Lewis A.C., Bartle K.D.: Multidimensional Chromatography, Wiley, 2002.

Course language:

Notes:

Course assessment
Total number of assessed students: 48

A	B	C	D	E	FX
54.17	35.42	8.33	2.08	0.0	0.0

Provides: doc. RNDr. Taťána Gondová, CSc.

Date of last modification: 03.02.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ IMS1/03	**Course name:** Mass Spectrometric Identification

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

Number of ECTS credits: 4

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

Course level: II., III.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
General principles of mass spectrometry. Analytical mass spectrometry. Detectors in mass spectrometry and resolution. Quadrupoles, ion traps, TOF analyzers. Analytes ionization, molecular spectra obtained from different ion sources. Identification with MS. Determination of molar mass. Fragmentation, spectra, and structural information. Identification by spectra comparison. Total ion current. Monitoring of selected ion/fragment. The use of hyphenated and coupled chromatographic methods. Tandem MS-MS, GC-MSD, HPLC-MS, microcolumn application. MALDI ToF MS, ToF SIMS and methods of surface analysis. Evaluation of mass spectrum.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 1

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

Provides: prof. RNDr. Andrej Oriňak, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ MOL/06	**Course name:** Molecular Spectrometry

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

Number of ECTS credits: 6

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Test
Test

Learning outcomes:
Advanced theoretical and practical knowledge of the methods of molecular spectroscopy.

Brief outline of the course:
Molekular spectrophotometry (Ultra-Violet, Visible, Infrared) for Chemical Analysis. Fourier Transform Infrared. Raman spectrometry. Microwave spectrometry. Electron Paramegnetic Resonance. Nuclear Magnetic Resonance.

Recommended literature:
E.D.Olsen. Modern optical methods of analysis. McGraw-Hill, Inc. 1975.
A.Skoog, J.J.Leary. Instrumentelle Analytic. Springer. Berlin-Heidelberg. 1996.

Course language:

Notes:

Course assessment
Total number of assessed students: 57

A	B	C	D	E	FX
38.6	33.33	22.81	5.26	0.0	0.0

Provides: prof. Dr. Yaroslav Bazeľ, DrSc., RNDr. Rastislav Serbin, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ JCH1/04	**Course name:** Nuclear Chemistry

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: I., II.

Prerequisities:

Conditions for course completion:
Presentation.
Examination.

Learning outcomes:
To explain a basic of radioactivity and nuclear reactions.
The course is to provide the students with a knowledge of preparation of the radionuclides and its use in the technical practise, to give the survey of biological effects of nuclear radiation.

Brief outline of the course:
Fundamentals of nuclear chemistry. Elementary particles. Nuclear core. Nuclides and isotopes. Radioactivity and radioactive disintegration kinetics. Radioactive disintegration. Decay law. Half life period. Units of radioactivity. Nuclear reactions. Sources of nuclear radiation. Detection and registration of radiation. Nuclear chemical technology. Radioactive analytical methods. Isotopic dilution method, activation analysis. Biological effects of the nuclear radiation. Nuclear medicine. Nuclear power station.

Recommended literature:
G. R. Choppin, J. Rydberg: Nuclear Chemistry, Theory and Applications, Pergamon Press, 1980.
G. R. Choppin, J. O. Liljenzin, J. Rydberg: Radiochemistry and Nuclear Chemistry, 3rd edition, Woburn, USA, Butterworth-Heinemann, 2002.
W. D. Ehmann, D. E. Vance: Radiochemistry and Nuclear Methods of Analysis, Wiley, New York, 1991.
A. Vértes, I. Kiss: Nuclear Chemistry, Elsevier, 1987.

Course language:

Notes:

Course assessment
Total number of assessed students: 51

A	B	C	D	E	FX
41.18	27.45	17.65	7.84	3.92	1.96

Provides: RNDr. Andrea Morovská Turoňová, PhD., RNDr. František Kaľavský
Date of last modification: 25.03.2020
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: Dek. PF UPJŠ/PPZ/13	**Course name:** Personality Development and Key Competences for Success on a Labour Market

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

Number of ECTS credits: 2

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

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 39

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

Provides: RNDr. Peter Stefányi, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ APC1/03	**Course name:** Practical Chromatography

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Laboratory reports.
Examination.

Learning outcomes:

Brief outline of the course:
Practical aspects of chromatographic instrumentation. Characterisation of HPLC functional composition, injector, column, detectors, data evaluation, errors. Instrumentation in GC, injector, columns, detectors, data evaluation. Practical examples.

Recommended literature:
Dean, R.: A Practical Guide to the Care, Maintenance, and Troubleshooting of Capillary Gas Chromatographic Systems. Huthig, Heidelberg,1991.
Grob, K.: On-Line Coupled LC-GC. Huthig, Heidelberg 1991.

Course language:

Notes:

Course assessment
Total number of assessed students: 21

A	B	C	D	E	FX
85.71	4.76	4.76	4.76	0.0	0.0

Provides: prof. RNDr. Andrej Oriňak, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ PBACH1/03	**Course name:** Practical in Bioanalytical Chemistry

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 ECTS credits: 3

Recommended semester/trimester of the course: 2., 4.

Course level: II.

Prerequisities:

Conditions for course completion:
Assessment

Learning outcomes:
Application of theoretical knowledge to bioanalytical laboratory practise

Brief outline of the course:
Analytical chemistry in laboratory medicine, basic analysis of biological systems, the nature and processing of biological samples, enzymes in bioanalysis, immunochemical methods, radioimunoanalytical methods (RIA), electrophoretic methods, analytical significance of nucleic acid, selected separation methods for the analysis of biomolecules.

Recommended literature:
1. Mikkelsen S.R, Cortón E.: Bioanalytical Chemistry, Wiley, 2004
2. Wilson I.: Bioanalytical Separations 4, (Handbook of Analytical Separations), Elsevier, 2003
3. Suelter C.H.,Kricka L.J.: Methods of Biochemical Analysis, Vol.37, Bioanalytical Instrumentation, Wiley, 1994
4. Rodriguez-Diaz R., Wehr T., Tuck S.: Analytical Techniques for Biopharmaceutical Development, Marcell Dekker, 2005

Course language:

Notes:

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. RNDr. Katarína Reiffová, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/PPZMg/12	**Course name:** Psychology and Health Psychology (Master´s Study)

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

Number of ECTS credits: 4

Recommended semester/trimester of the course:

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 226

A	B	C	D	E	FX
19.47	25.22	25.66	13.27	15.93	0.44

Provides: PhDr. Anna Janovská, PhD., Mgr. Lucia Hricová, PhD.

Date of last modification: 07.03.2018

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ AVZ1/02	**Course name:** Sampling of Analytical Samples

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

Number of ECTS credits: 5

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:
Examination.

Learning outcomes:

Brief outline of the course:
Analytical sample, characterisation. Sampling and norms effecting sampling process. Quantity, number of samples. Sampling techniques. Sampling laboratory equipment. Sampling techniques. Sample pre-concentration. Sample storing and conservation. Matrix simplifying, specific analysis. Chromatographic sample pre-treatment.

Recommended literature:
O. Stoeppler: Sampling and Sample Preparation Practical Guide for Analytical Chemists. Academic Press, London, 2002.
E. P. Popek: Sampling and Analysis of Environmental Chemical Pollutants. Elsevier Science, San Diego, 2003.

Course language:

Notes:

Course assessment
Total number of assessed students: 194

A	B	C	D	E	FX
60.31	21.65	12.89	4.12	1.03	0.0

Provides: prof. RNDr. Andrej Oriňak, PhD., Mgr. Mária Sabalová, PhD.

Date of last modification: 26.09.2017

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

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 ECTS credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:
Conditions for course completion:
Attendance

Learning outcomes:
Learning outcomes:
Students will be provided an overview of possibilities how to spend leisure time in seaside conditions actively and their skills in work and communication with clients will be improved. Students will acquire practical experience in organising the cultural and art-oriented events, with the aim to improve the stay and to create positive experiences for visitors.

Brief outline of the course:
Brief outline of the course:
1. Basics of seaside aerobics
2. Morning exercises
3. Pilates and its application in seaside conditions
4. Exercises for the spine
5. Yoga basics
6. Sport as a part of leisure time
7. Application of projects of productive spending of leisure time for different age and social groups (children, young people, elderly)
8. Application of seaside cultural and art-oriented activities in leisure time

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 42

abs	n
11.9	88.1

Provides: Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.
Date of last modification: 15.03.2019
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ SP1/14	**Course name:** Semestral Project I
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 4	
Recommended semester/trimester of the course: 1.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 148

abs	n
99.32	0.68

Provides: RNDr. Rastislav Serbin, PhD., doc. RNDr. Mária Kožurková, CSc., prof. Dr. Yaroslav Bazeľ, DrSc., prof. RNDr. Jozef Gonda, DrSc., prof. RNDr. Katarína Györyová, DrSc., doc. RNDr. Ján Imrich, CSc., doc. RNDr. Miroslava Martinková, PhD., doc. RNDr. Erik Sedlák, PhD., RNDr. Nataša Tomášková, PhD., doc. RNDr. Viktor Víglaský, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD., RNDr. Jana Šandrejová, PhD., RNDr. Miroslav Almáši, PhD., doc. RNDr. Ivan Potočňák, PhD., prof. RNDr. Juraj Černák, DrSc.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ SPII/14	**Course name:** Semestral Project II
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 6	
Recommended semester/trimester of the course:	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 46

abs	n
100.0	0.0

Provides: prof. Dr. Yaroslav Bazeľ, DrSc., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Katarína Reiffová, PhD., doc. Ing. Viera Vojteková, PhD., prof. Mgr. Vasiľ Andruch, DSc., prof. RNDr. Renáta Oriňaková, DrSc., RNDr. Rastislav Serbin, PhD., RNDr. Jana Šandrejová, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ SPIII/15	**Course name:** Semestral Project III
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of ECTS credits: 6	
Recommended semester/trimester of the course: 4.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 33

abs	n
100.0	0.0

Provides: prof. Mgr. Vasiľ Andruch, DSc., prof. Dr. Yaroslav Bazeľ, DrSc., doc. Ing. Viera Vojteková, PhD., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Katarína Reiffová, PhD., RNDr. Jana Šandrejová, PhD.
Date of last modification:
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ SDP/03	**Course name:** Seminar to Diploma Thesis

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:
Consultations, discussions and presentations.
Assessment of student's work during the semester by supervisor.

Learning outcomes:
Teach the student to prepare presentation of his own results, critical acceptation of information, participate in scientific discussion and formal requirements of written diploma work.

Brief outline of the course:
Presentation of literature information and own experimental results, scientific discussions and writing of scientific text.

Recommended literature:
According to the field of diploma work.

Course language:

Notes:

Course assessment
Total number of assessed students: 302

A	B	C	D	E	FX
96.03	2.32	0.99	0.33	0.0	0.33

Provides: doc. RNDr. Andrea Straková Fedorková, PhD., doc. RNDr. Mária Kožurková, CSc., doc. RNDr. Ján Imrich, CSc., prof. RNDr. Katarína Györyová, DrSc., prof. RNDr. Juraj Černák, DrSc., prof. RNDr. Andrej Oriňak, PhD., prof. RNDr. Jozef Gonda, DrSc., doc. Ing. Viera Vojteková, PhD., doc. RNDr. Katarína Reiffová, PhD., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Mária Reháková, CSc., doc. RNDr. Miroslava Martinková, PhD., doc. RNDr. Zuzana Vargová, Ph.D., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Ivan Potočňák, PhD., prof. RNDr. Renáta Oriňaková, DrSc., RNDr. Dušan Koščík, CSc., RNDr. Andrea Morovská Turoňová, PhD., RNDr. Slávka Hamuľaková, PhD., RNDr. Ladislav Janovec, PhD., RNDr. Zuzana Kudličková, PhD., RNDr. Lívia Kocúrová, PhD., prof. Mgr. Vasiľ Andruch, DSc., prof. Dr. Yaroslav Bazeľ, DrSc.

Date of last modification: 20.09.2017
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: KPPaPZ/SPVKE/07	**Course name:** Social-Psychological Training of Coping with Critical Life Situations
Course type, scope and the method: **Course type:** Practice **Recommended course-load (hours):** **Per week:** 2 **Per study period:** 28 **Course method:** present	
Number of ECTS credits: 2	
Recommended semester/trimester of the course: 2.	
Course level: II.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 126

abs	n	z
97.62	2.38	0.0

Provides: Mgr. Ondrej Kalina, PhD.
Date of last modification: 18.03.2019
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ VSE1a/04	**Course name:** Special Seminar

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Actual problems of physical and analytical chemistry which are connected with the solution of the students theses.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 46

A	B	C	D	E	FX
89.13	4.35	2.17	2.17	2.17	0.0

Provides: prof. Dr. Yaroslav Bazeľ, DrSc., doc. RNDr. Katarína Reiffová, PhD., doc. RNDr. Taťána Gondová, CSc., doc. Ing. Viera Vojteková, PhD., prof. Mgr. Vasiľ Andruch, DSc., doc. RNDr. Andrea Straková Fedorková, PhD., prof. RNDr. Andrej Oriňak, PhD., prof. RNDr. Renáta Oriňaková, DrSc., RNDr. Andrea Morovská Turoňová, PhD., RNDr. Rastislav Serbin, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ VSE1b/04	**Course name:** Special Seminar

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 2.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Actual problems of physical and analytical chemistry which are connected with the solution of the students theses.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 45

A	B	C	D	E	FX
91.11	2.22	4.44	2.22	0.0	0.0

Provides: prof. Dr. Yaroslav Bazeľ, DrSc., doc. RNDr. Andrea Straková Fedorková, PhD., prof. RNDr. Andrej Oriňak, PhD., doc. Ing. Viera Vojteková, PhD., doc. RNDr. Katarína Reiffová, PhD., prof. RNDr. Renáta Oriňaková, DrSc., doc. RNDr. Taťána Gondová, CSc., prof. Mgr. Vasiľ Andruch, DSc., RNDr. Andrea Morovská Turoňová, PhD., RNDr. Rastislav Serbin, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

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 ECTS 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:	
Notes:	

Course assessment
Total number of assessed students: 12947

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
88.64	0.06	0.0	0.0	0.0	0.03	7.22	4.05

Provides: doc. PhDr. Ivan Šulc, CSc., Mgr. Zuzana Küchelová, PhD., Mgr. Peter Bakalár, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD., Mgr. Marcel Čurgali, PaedDr. Jana Potočníková, PhD.

Date of last modification: 18.03.2019

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

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 ECTS 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:

Notes:

Course assessment
Total number of assessed students: 11186

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.58	0.55	0.02	0.0	0.0	0.05	9.99	3.8

Provides: doc. PhDr. Ivan Šulc, CSc., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Peter Bakalár, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD., Mgr. Marcel Čurgali, PaedDr. Jana Potočníková, PhD.

Date of last modification: 18.03.2019

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

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 ECTS 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:

Notes:

Course assessment
Total number of assessed students: 7741

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
90.03	0.04	0.01	0.0	0.0	0.03	4.04	5.85

Provides: doc. PhDr. Ivan Šulc, CSc., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Peter Bakalár, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD., Mgr. Marcel Čurgali, PaedDr. Jana Potočníková, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

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 ECTS 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:

Notes:

Course assessment
Total number of assessed students: 5086

abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.19	0.29	0.04	0.0	0.0	0.0	6.78	7.69

Provides: doc. PhDr. Ivan Šulc, CSc., Mgr. Zuzana Küchelová, PhD., Mgr. Peter Bakalár, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD., Mgr. Marcel Čurgali, PaedDr. Jana Potočníková, PhD.

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ SVK1/00	**Course name:** Students Scientific Conference (Presentation)

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

Number of ECTS credits: 4

Recommended semester/trimester of the course: 2., 4.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 238

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

Provides:

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

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

Course assessment Total number of assessed students: 151	
abs	n
45.03	54.97
Provides: Mgr. Peter Bakalár, PhD.	
Date of last modification: 18.03.2019	
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.	

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 ECTS credits: 2	
Recommended semester/trimester of the course:	
Course level: I., II.	
Prerequisities:	
Conditions for course completion: Conditions for course completion: Attendance Final assessment: continuous fulfilment of all tasks within the course	
Learning outcomes: Learning outcomes: Students will be familiarized with principles of safe stay and movement in extreme natural conditions as they will obtain theoretical knowledge and practical skills to solve the extraordinary and demanding situations connected with survival and minimization of damage to health. The course develops team work and students will learn how to manage and face the situations that require overcoming of obstacles.	
Brief outline of the course: Brief outline of the course: Lectures: 1. Principles of behaviour and safety for movement and stay in unknown mountains 2. Preparation and leadership of tour 3. Objective and subjective danger in mountains 4. Principles of hygiene and prevention of damage to health in extreme conditions Exercises: 1. Movement in terrain, orientation and navigation in terrain (compasses, GPS) 2. Preparation of improvised overnight stay 3. Water treatment and food preparation.	
Recommended literature:	
Course language:	
Notes:	

Course assessment Total number of assessed students: 392	
abs	n
44.39	55.61
Provides: Mgr. Marek Valanský, MUDr. Peter Dombrovský	
Date of last modification: 15.03.2019	
Approved: prof. Dr. Yaroslav Bazeľ, DrSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: KPPaPZ/UPR/03	**Course name:** The Art of Aiding by Verbal Exchange

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

Number of ECTS credits: 2

Recommended semester/trimester of the course: 4.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 49

A	B	C	D	E	FX
85.71	4.08	2.04	2.04	2.04	4.08

Provides: Mgr. Ondrej Kalina, PhD.

Date of last modification: 18.03.2019

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ MSO1/03	**Course name:** Wastes Treatment Methods

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

Number of ECTS credits: 4

Recommended semester/trimester of the course: 3.

Course level: II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:
Wastes clasiffication, wastes separation. Re-cycling of wastes, methods of wastes elimination and re-finishing. Pyrolysis, degradation of wastes by pyrolysis, process optimization.Analytical methods for wastes analysis. Monitoring of wastes degradation pollutants, toxicity of wastes and degradation products.

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 68

A	B	C	D	E	FX
70.59	26.47	2.94	0.0	0.0	0.0

Provides: prof. RNDr. Andrej Oriňak, PhD., Mgr. Mária Sabalová, PhD.

Date of last modification: 26.09.2017

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ ATV1/04	**Course name:** Water Pretreatment

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

Number of ECTS credits: 6

Recommended semester/trimester of the course: 2., 4.

Course level: II.

Prerequisities:

Conditions for course completion:
Test / Exam

Learning outcomes:
Getting a knowledge about the methods of water pretreatment.

Brief outline of the course:
Disinfection of drinking water. Fluoridation of drinking water. Water softening and demineralisation. Waste water. Neutralization of wastewater. Oxidation of wastewater. Physico–chemical methods of waste water treatment. Biological treatment of wastewater.

Recommended literature:
1. Handbook of Water and Wastewater Treatment Technologies. Ed. By Nicholas P Cheremisinoff, Butterworth Heinemann, 2001. 576 p.
2. Principles of Water Quality Control, Ed. by Thy Tebbutt, Butterworth Heinemann, 1997. 288 p.
3. Water Technology. Ed. by N. F. Gray, Butterworth Heinemann, 2005. 600 p.

Course language:
Slovak

Notes:

Course assessment
Total number of assessed students: 172

A	B	C	D	E	FX
37.21	14.53	18.02	18.02	12.21	0.0

Provides: prof. Mgr. Vasiľ Andruch, DSc.

Date of last modification: 31.01.2020

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚTVŠ/ ZKLS//13	**Course name:** Winter Ski Training Course

Course type, scope and the method:
Course type: Practice
Recommended course-load (hours):
Per week: 36 **Per study period:** 504
Course method: present

Number of ECTS credits: 2

Recommended semester/trimester of the course:

Course level: I., II.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 97

abs	n
32.99	67.01

Provides: doc. PhDr. Ivan Šulc, CSc., Mgr. Marek Valanský

Date of last modification: 03.05.2015

Approved: prof. Dr. Yaroslav Bazeľ, DrSc.