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University: P. J. Šafá	University: P. J. Šafárik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ IG/04	1		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours): y period:</b> esent		
Number of ECTS cr			
	ster/trimester of the cours	e: 6., 8.	
Course level: III.			
Prerequisities:			
Conditions for course completion:			
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended literature:			
Course language:			
Notes:			
Course assessment Total number of assessed students: 184			
	abs n		
100.0 0.0			
Provides:			
Date of last modifica	Date of last modification: 03.05.2015		
Approved:			

	University:	ΡJ	Šafárik	University	v in Košice
I	University.	1	Salarik	Oniversity	

Faculty: Faculty of Science

**Course ID:** ÚCHV/ **Course name:** Atomic and Molecular Spectroscopy AMS3/05

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: 8

Recommended semester/trimester of the course: 2.

Course level: III.

**Prerequisities:** 

**Conditions for course completion:** 

#### Learning outcomes:

Advanced theoretical and practical knowledge of the methods of atomic and molecular spectroscopy.

#### **Brief outline of the course:**

Enhanced information about atomic absorption and emission spectral methods. History of the spectral methods development and their use in analytical practice. Optical analytical methods, principles, classification. Theoretical principles of spectroscopy. Experimental basis of spectral methods.

Atomic absorption spectrometry. Atomic emission spectrometry (optical emission spectrometry). Atomic fluorescence spectrometry. Plasma Mass Spectrometry. Mass spectrometry. Spectral methods based on the X-rays observation and observation of the released electrons.

Absorption spectroscopy in the visible and UV region. Emission spectroscopy of molecules. Vibration-rotation spectroscopy in analytical chemistry. Infrared and Raman spectrometry, nuclear magnetic resonance, electron paramagnetic resonance: principles, development in analytical chemistry. Automation and miniaturization of spectral methods. Hybrid spectral methods. Organic reagents. Ionic associates with basic dyes.

#### **Recommended literature:**

Günzler H., Wiliams A.: Handbook of Analytical Techniques. Wiley-VCH, 2001.

Skoog D. A., et al: Principle of Instrumental Analysis, Thomson Brooks/Cole, 2007.

Welz B., Sperling M.: Atomic Absorption Spectrometry, Wiley-VCH, 1998.

Rios, A. Escarpa, B. Simonet: Miniaturization of Analytical Systems: Principles, Designs and Applications. Wiley, 2009

D. Harvey: Modern Analytical Chemistry, McGraw-Hill Companies, Inc., 2000

#### **Course language:**

Notes:

<b>Course assessment</b> Total number of assessed students: 15		
N P		
0.0 100.0		
Provides: prof. Dr. Yaroslav Bazel', DrSc., doc. Ing. Viera Vojteková, PhD.		
Date of last modification: 03.05.2015		
Approved:		

University: P. J. Šafárik University in Košice	Universi	P. J. Š	afárik	University	v in Košice
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Faculty: Faculty of Science

**Course ID:** ÚCHV/ **Course name:** Chemometrics and Experiment Metodics ACM3/05

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: 8

**Recommended semester/trimester of the course:** 1.

Course level: III.

Prerequisities:

#### **Conditions for course completion:**

On the basis of individual work.

On the basis of the continuous assessment and examination.

#### Learning outcomes:

Learning of the basic methodology of experimentation and statistical evaluation of the measurements.

#### **Brief outline of the course:**

The basic methodology of experimentation. The sources of the scientific information. Literature search. Choice and classification of scientific journals. The sample treatment. (sampling, measurements, evaluation of results). Knowledge acquisition of the correct and theoretically-based processing and evaluation of results of chemical analysis: Signal Processing; Calibration, Data Processing. Knowledge acquisition of the methods and methodologies for results evaluation. Decision-making statistics. Information about validation of the method, about metrology, and accreditation of the laboratories. Conception of the uncertainties of results and methods. Practical application of the theoretical knowledge gained during the course.

#### **Recommended literature:**

Brereton R. G.: Chemometrics, Wiley, 2003.

Günzler H., Wiliams A.: Handbook of Analytical Techniques. Wiley-VCH, 2001.

#### **Course language:**

Notes:

#### Course assessment

Total number of assessed students: 21

Ν	Р	
0.0	100.0	
Provides: prof. Dr. Yaroslav Bazel', DrSc., doc. Ing. Viera Vojteková, PhD.		
Date of last modification: 03.05.2015		

Approved:

University: P. J. Šafárik University in Košice		
Faculty: Faculty of Science		
Course ID: ÚCHV/ Course name: Chromatographic Separation Methods CHR3/05		
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: 8		
Recommended semester/trimester of the course: 2.		
Course level: III.		
Prerequisities:		
Conditions for course completion:		
<b>Learning outcomes:</b> Basic and advanced theory of chromatographic separation methods and their possibilities and us in research and analytical practice.		
Brief outline of the course:		
Recommended literature: Skoog D.A., Leary J.J.,Principles of Instrumental Analysis, Saunders, 1997. Lehotay J., Separačné metódy v analytickej chémii,STU Bratislava 2009.		
Course language:		
Notes:		
Course assessment Total number of assessed students: 9		
N P		
0.0 100.0		
Provides: prof. RNDr. Andrej Oriňak, PhD., doc. RNDr. Taťána Gondová, CSc.		
Date of last modification: 03.05.2015		
Approved:		

University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚCHV/ CZC/04				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period: esent			
Number of ECTS cr				
	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for course completion:				
Learning outcomes:				
Brief outline of the course:				
Recommended literature:				
Course language:				
Notes:				
<b>Course assessment</b> Total number of asse	ssed students: 49			
	abs n			
100.0 0.0				
Provides:				
Date of last modifica	tion:			
Approved:				

University: P. J. Šafá	University: P. J. Šafárik University in Košice		
Faculty: Faculty of S	Faculty: Faculty of Science		
Course ID: ÚCHV/ CDC/04			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent		
Number of ECTS cr			
	ster/trimester of the cours	se:	
Course level: III.			
Prerequisities:	Prerequisities:		
Conditions for course completion:			
Learning outcomes:			
Brief outline of the course:			
Recommended litera	Recommended literature:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 1		
abs n			
100.0 0.0			
Provides:		·	
Date of last modifica	tion:		
Approved:			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of Science			
Course ID: ÚCHV/ CM/04			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period: esent		
Number of ECTS cr			
	ster/trimester of the cou	rse:	
Course level: III.			
Prerequisities:	Prerequisities:		
Conditions for course completion:			
Learning outcomes:			
Brief outline of the course:			
Recommended literature:			
Course language:			
Notes:	Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 3		
	abs n		
100.0 0.0			
Provides:		•	
Date of last modifica	ntion:		
Approved:			_

University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science		
Course ID: ÚCHV/ SDPR/04	Course ID: ÚCHV/ Course name: Co-worker of a Local Project		
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent		
Number of ECTS cr			
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:	Prerequisities:		
Conditions for course completion:			
Learning outcomes:			
Brief outline of the course:			
Recommended literature:			
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 446		
abs n			
99.78 0.22			
Provides:			
Date of last modifica	ition:		
Approved:			

University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science		
<b>Course ID:</b> ÚCHV/ SMPR/04	5		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours):</b> l <b>y period:</b> esent		
Number of ECTS cr			
	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for course completion:			
Learning outcomes:			
Brief outline of the course:			
Recommended literature:			
Course language:			
Notes:	Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 38		
abs n			
100.0 0.0			
Provides:			
Date of last modifica	tion:		
Approved:			

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚCHV/ ODZP/2014/15				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours):</b> y period: esent			
Number of ECTS cr				
	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 50				
N P				
0.0 100.0				
Provides:				
Date of last modification: 03.05.2015				
Approved:	Approved:			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ PPC/04			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period: esent		
Number of ECTS cr			
	ster/trimester of the cour	se:	
Course level: III.			
Prerequisities:			
Conditions for cours	se completion:		
Learning outcomes:			
Brief outline of the o	course:		
Recommended litera	ature:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 394		
abs n			
100.0 0.0			
Provides:			
Date of last modifica	ation:		
Approved:			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ DZS/15			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent		
Number of ECTS cr			
Recommended seme	ster/trimester of the cou	rse:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 51		
N P			
0.0 100.0			
Provides:			
Date of last modifica	tion: 03.05.2015		
Approved:			

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚCHV/ EACH3/05				
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 2 Per Course method: pre	re / Practice rse-load (hours): study period: 28 / 28			
Number of ECTS cr				
Recommended seme	ster/trimester of the cours	e: 4.		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
<b>Course assessment</b> Total number of asse	ssed students: 3			
N P				
0.0 100.0				
Provides: doc. RNDr	Provides: doc. RNDr. Andrea Straková Fedorková, PhD.			
Date of last modification: 20.09.2017				
Approved:				

University: P. J. Š	afárik Univers	ity in Košice			
Faculty: Faculty of	of Science				
Course ID: CJP/ AJD1/07	Course na	Course name: English Language for PhD Students 1			
Course type, scop Course type: Pra Recommended o Per week: 2 Per Course method:	actice course-load (h study period:	ours):			
Number of ECTS	credits: 2				
Recommended se	mester/trimes	ster of the cours	<b>e:</b> 1.		
Course level: III.					
Prerequisities:					
Conditions for co Written assignment distance mode of	nts - profession	nal CV, short aca	demic biography	y (200-350 words	).
Learning outcom	es:				
Brief outline of th	e course:				
Recommended lit	erature:				
<b>Course language:</b>					
Notes:					
<b>Course assessmer</b> Total number of a		ts: 654			
N	Ne	Р	Pr	abs	neabs
0.0	0.0	51.38	0.0	48.62	0.0
Provides: PhDr. H	Ielena Petruňo	vá, CSc., Mgr. Z	uzana Kolaříkov	vá, PhD.	
Date of last modi	fication: 11.02	2.2021			
Approved:					

	COURSE INFORMATION LETTER			
University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: CJP/ AJD2/07				
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	ce rse-load (hours): ıdy period: 28			
Number of ECTS cr	redits: 3			
Recommended seme	ester/trimester of the course: 2.			
Course level: III.				
Prerequisities:				
	struction. Online consultations. cordance with the exam requirements (https://www.upjs.sk/filozoficka-fakulta/			
(selected aspects of pragmatic competence	udents'language skills, improvement of students'linguistic competencies English pronunciation, vocabulary and syntax), development of students's ce (selected aspects of functional grammar) with focus on English for academic s. B2/C1 level of lanugage competence (according to CEFR.)			
(noun and verb colloc language, etc.), select etc.), selected function	course: academic and professional English with focus on vocabulary development cations, phrasal verbs, prepositional phrases, word-formation, formal/informati ted aspects of English grammar (prepositions, grammar tenses, passive voice onal grammar (expressing opinion, cause/effect, arguments, examples, etc.). cation. Cross-language interference.			
Recommended litera	ature:			
UPJŠ Košice, 2015 McCarthy, M., O'Del Štepánek, L., J. De H 2011 Blašková, K.: Handb Dušková, L. a kol.: H Bratislava, 1982 Armer, T.: Cambridg Porter, D.: Check you	<ul> <li>nňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica).</li> <li>II, F.: Academic Vocabulary in Use. CUP, 2008</li> <li>Iaff a kol.: Academic English-Akademická angličtina. Grada Publishing, a.s.</li> <li>book of English for Postgraduate Students. Vyd. SPRINT Bratislava, 2007</li> <li>Hovorová angličtina pre vedeckých a odborných pracovníkov. Veda.</li> <li>ge English for Scientists. CUP, 2011</li> <li>ur vocabulary for Academic English. Macmillan Publishers Limited, 2008</li> <li>Dictionary for students of English. OUP, 2002</li> </ul>			
lms.upjs.sk				

B2/C1 level according to CEFR					
Notes:	Notes:				
Course assessme Total number of	ent f assessed studer	nts: 649			
Ν	Ne	Р	Pr	abs	neabs
0.31	0.0	93.07	1.23	5.39	0.0
Provides: PhDr.	. Helena Petruňo	vá, CSc., Mgr. Zu	ızana Kolaříková	, PhD.	•
Date of last mo	dification: 10.02	2.2021			
Approved:					

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of Science				
Course ID: ÚCHV/ SSOL/04				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours): y period:</b> esent			
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	ture:			
Course language:				
Notes:				
<b>Course assessment</b> Total number of asse	ssed students: 195			
	abs n			
100.0 0.0				
Provides:	Provides:			
Date of last modifica	tion: 03.05.2015			
Approved:				

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ MK/04			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent		
Number of ECTS cr			
Recommended seme	ster/trimester of the cour	rse:	
Course level: III.			
Prerequisities:			
Conditions for cours	se completion:		
Learning outcomes:			
Brief outline of the c	course:		
Recommended litera	ature:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 214		
	abs n		
100.0 0.0			
Provides:			
Date of last modifica	ntion: 03.05.2015		
Approved:			

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚCHV/ ZKC/04				
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent			
Number of ECTS cr	edits: 20			
Recommended seme	ster/trimester of the cours	2:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	ature:			
Course language:				
Notes:				
Course assessment Total number of asse	ssed students: 302			
abs n				
99.67 0.33				
Provides:	Provides:			
Date of last modifica	Date of last modification: 03.05.2015			
Approved:				

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚCHV/ ZNC/04				
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present				
Number of ECTS cr				
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	ture:			
Course language:				
Notes:				
<b>Course assessment</b> Total number of asses	ssed students: 21			
abs n				
100.0 0.0				
Provides:	Provides:			
Date of last modifica	Date of last modification: 03.05.2015			
Approved:				

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ NEM/04	HV/ <b>Course name:</b> Introduction of a New Experimental Method		
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent		
Number of ECTS cr			
	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours	se completion:		
Learning outcomes:			
Brief outline of the c	course:		
Recommended litera	ature:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 9		
abs n			
100.0 0.0			
Provides:			
Date of last modifica	ntion:		
Approved:			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ DK/04			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period: esent		
Number of ECTS cr			
	ster/trimester of the cou	rse:	
Course level: III.			
Prerequisities:			
Conditions for cours	se completion:		
Learning outcomes:			
Brief outline of the o	course:		
Recommended litera	ature:		
Course language:			
Notes:	· · · ·		
<b>Course assessment</b> Total number of asse	ssed students: 116		
abs n			
100.0 0.0			
Provides:			
Date of last modifica	ntion:		
Approved:			

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚCHV/ DKZU/04				
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent			
Number of ECTS cr	edits: 4			
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:	Learning outcomes:			
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
<b>Course assessment</b> Total number of asse	ssed students: 216			
	abs n			
100.0 0.0				
Provides:	Provides:			
Date of last modifica	ition: 03.05.2015			
Approved:				

University: P. J. Šafá	University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
<b>Course ID:</b> ÚCHV/ DKC/04				
Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of ECTS cr				
	ster/trimester of the cours	se:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	ture:			
Course language:	Course language:			
Notes:				
Course assessment Total number of assessed students: 10				
abs n				
100.0 0.0				
Provides:	Provides:			
Date of last modifica	Date of last modification: 03.05.2015			
Approved:				

University: P. J. Šafá	University: P. J. Šafárik University in Košice		
Faculty: Faculty of Science			
Course ID: ÚCHV/ DNC/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours):</b> y period: esent		
Number of ECTS cr			
	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:	Learning outcomes:		
Brief outline of the c	ourse:		
Recommended litera	ture:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asses	ssed students: 18		
abs n			
100.0 0.0			
Provides:	Provides:		
Date of last modifica	tion: 03.05.2015		
Approved:			

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
Course ID: ÚCHV/ POVK/04	ourse ID: ÚCHV/ Course name: Membership in a Conference organizing Committee			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours):</b> y <b>period:</b> esent			
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:	Learning outcomes:			
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
<b>Course assessment</b> Total number of asse	ssed students: 39			
	abs n			
100.0 0.0				
Provides:	Provides:			
Date of last modifica	tion:			
Approved:				

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ MET3/05	V/ <b>Course name:</b> Metodológia chemickej analýzy environmentálnych systémov a biologických systémov	
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 2 Per Course method: pro	re / Practice rse-load (hours): study period: 28 / 28	
Number of ECTS cr	edits: 8	
Recommended seme	ster/trimester of the cours	<b>e:</b> 4.
Course level: III.		
Prerequisities:		
Conditions for cours	se completion:	
Learning outcomes:		
Brief outline of the o	course:	
Recommended litera	ature:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 9	
	Ν	Р
	0.0	100.0
<b>Provides:</b> prof. Dr. Y Andruch, DSc.	aroslav Bazel', DrSc., doc. F	NDr. Katarína Reiffová, PhD., prof. Mgr. Vasiľ
Date of last modifica	ation: 03.05.2015	
Approved:		

University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	Faculty: Faculty of Science			
<b>Course ID:</b> ÚCHV/ MAS3/05	Course name: Miniaturization of Analytical Systems			
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	e / Practice rse-load (hours): study period: 28 / 28			
Number of ECTS cr	edits: 8			
Recommended seme	ster/trimester of the cours	e: 1.		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
electrochemical sense of biosensors in b	cation of sensors. Chemical ors. Electrode with liquid me	sensors. Electrochemical sensors . Potentiometric embrane. Biosensors. Optical sensors. Application for medicine and environment monitoring. es. Flow injection analysis .		
-	of Chemical Sensors, Plen	um Press, London, 1989. nsors, Springer, 2004, 421 p.		
Course language:				
Notes:				
<b>Course assessment</b> Total number of asses	ssed students: 18			
	Ν	Р		
	0.0 100.0			
Provides: prof. Dr. Ya	aroslav Bazel', DrSc., prof.	Mgr. Vasil' Andruch, DSc.		
Date of last modifica	tion: 03.05.2015			
Approved:				

University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science			
Course ID: ÚCHV/ NZ/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours): y period:</b> esent		
Number of ECTS cr	edits: 2		
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:	Prerequisities:		
Conditions for cours	Conditions for course completion:		
Learning outcomes:	Learning outcomes:		
Brief outline of the c	ourse:		
Recommended litera	ture:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asses	ssed students: 173		
	abs n		
100.0 0.0			
Provides:	Provides:		
Date of last modifica	tion: 03.05.2015		
Approved:	Approved:		

University: P. J. Šafárik University in Košice				
Faculty: Faculty of Science				
<b>Course ID:</b> ÚCHV/ PVS/04	, , ,			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present				
Number of ECTS cr				
	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	ture:			
Course language:	Course language:			
Notes:	Notes:			
Course assessment Total number of assessed students: 0				
abs n				
0.0 0.0				
Provides:				
Date of last modifica	Date of last modification:			
Approved:				

University: P. J. Šaf	ărik University	v in Košice	
Faculty: Faculty of	Science		
<b>Course ID:</b> KPE/ PgVU/17	Course nam	e: Pedagogy for university	teachers
Course type, scope Course type: Lectu Recommended cou Per week: Per stu Course method: p	are urse-load (hou dy period: 28s	ırs):	
Number of ECTS c	redits: 5		
Recommended sem	ester/trimeste	r of the course:	
Course level: III.			
Prerequisities:			
Conditions for cour	rse completion	:	
Learning outcomes	•		
Brief outline of the	course:		
Recommended liter	ature:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of ass	essed students:	33	
abs n neabs			
100.0 0.0 0.0			
Provides: doc. Paed	Dr. Renáta Oro	osová, PhD.	· · · · · · · · · · · · · · · · · · ·
Date of last modific	cation: 08.06.2	021	
Approved:			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		-
<b>Course ID:</b> ÚCHV/ VYS/04			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period: esent		
Number of ECTS cr			_
	ster/trimester of the cour	se:	
Course level: III.			
Prerequisities:			
<b>Conditions for cours</b>	se completion:		
Learning outcomes:			
Brief outline of the c	course:		
Recommended litera	ature:		_
Course language:			
Notes:			_
<b>Course assessment</b> Total number of asse	ssed students: 182		
	abs n		
100.0 0.0			
Provides:		•	_
Date of last modifica	ition:		
Approved:			

University: P. J. Šafárik U	niversity in Košice			
Faculty: Faculty of Science	e			
Course ID: KPPaPZ/PsVU/17				
Course type, scope and the Course type: Lecture Recommended course-lo Per week: Per study per Course method: present	oad (hours):			
Number of ECTS credits	:5			
Recommended semester/	trimester of the course:			
Course level: III.				
Prerequisities:				
Conditions for course co	npletion:			
Learning outcomes:				
selected areas of cognitiv	on to students and as part of the tead e psychology, psychology of emotion logy, educational psychology and hea t.	ns and motivation, developmental		
Schneider F., Gruman J., G Fry, H., Ketteridge, S., & education: Enhancing acad Mareš, J.: Pedagogická ps Kniha psychologie. Unive Čáp, J., Mareš, J.: Psychol	plying social psychology to education Coutts L.–Sage Publications, Inc, 205- Marshall, S. (2008). A handbook for t demic practice. Routledge. ychologie. Portál, 2013.	-228. teaching and learning in higher		
Course language:				
Notes:				
<b>Course assessment</b> Total number of assessed a	students: 37			
abs	n	neabs		
100.0	0.0	0.0		
Provides: PhDr. Anna Jan	ovská, PhD.			
Date of last modification:	28.06.2021			

Approved:

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ VPBP/04		
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	<b>rse-load (hours):</b> ly <b>period:</b> esent	
Number of ECTS cr		
	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	ature:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 64	
abs n		
100.0 0.0		
Provides:		
Date of last modifica	ition:	
Approved:		

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ RZ/04		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period: esent	
Number of ECTS cr		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 321	
abs n		
100.0 0.0		
Provides:		
Date of last modifica	tion: 03.05.2015	
Approved:		

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ SCI/04			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period: esent		
Number of ECTS cr			
	ster/trimester of the cou	irse:	
Course level: III.			
Prerequisities:			
<b>Conditions for cours</b>	se completion:		
Learning outcomes:			
Brief outline of the c	course:		
Recommended litera	ature:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 206		
abs n			
100.0 0.0			
Provides:		· · · · ·	
Date of last modifica	ntion:		
Approved:			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> Dek. PF UPJŠ/JSD/14			
Course type, scope a Course type: Lectur Recommended cour Per week: Per stud Course method: pre	re rse-load (hours): ly period: 4d		
Number of ECTS cr	edits: 2		
Recommended seme	ster/trimester of the cours	2:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:	Learning outcomes:		
Brief outline of the c	ourse:		
Recommended literature:			
Course language:			
Notes:			
<b>Course assessment</b> Total number of asses	ssed students: 154		
abs n			
100.0 0.0			
Provides: doc. RNDr	. Marián Kireš, PhD.		
Date of last modifica	tion: 03.05.2015		
Approved:			

University: P. J. Šafá	rik University in Košic	e
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ ZSP/04	5 5	
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period: esent	
Number of ECTS cr		
	ster/trimester of the c	ourse: 6., 8.
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b>	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	ature:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 80	
abs n		
100.0 0.0		
Provides:		· · ·
Date of last modifica	ition:	
Approved:		

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of Science			
<b>Course ID:</b> ÚCHV/ VBP/04	······································		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	r <b>se-load (hours):</b> y <b>period:</b> esent		
Number of ECTS cr			
	ster/trimester of the cours	<b>e:</b> 6., 8.	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 300		
abs n			
100.0 0.0			
Provides:			
Date of last modifica	tion:		
Approved:			

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ VPSV/04	1	
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	<b>rse-load (hours):</b> ly <b>period:</b> esent	
Number of ECTS cr		
	ster/trimester of the cours	e: 6., 8.
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 73	
abs n		
100.0 0.0		
Provides:		
Date of last modifica	ition:	
Approved:		

University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	cience		
Course ID: ÚCHV/ TZAC3/05	Course ID: ÚCHV/Course name: Theoretical basics of analytical chemistryTZAC3/05		
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: 8			
Recommended semester/trimester of the course: 1.			
Course level: III.			
Prerequisities:	Prerequisities:		
Conditions for course completion:			

Learning outcomes:

#### **Brief outline of the course:**

Analytical chemistry. Relationship between analytical chemistry and other scientific branches. History of analytical chemistry. Problems and trends in recent analytical chemistry. Objects of analysis. Instrumental equipment of a modern analytical laboratory. Research analytical chemistry and analytical practice. Validation of analytical methods. Factors important to bear in mind when choosing a proper method. Reasons of improper analytical results. Modern, highly selective methods of analysis. Speed and factors affecting the speed of analysis. Test and screening methods. Field analysis. Primary X-ray spectrometry, microprobe. Non-destructive methods of analysis, principle, utility. Distance analysis. Automation of analysis, examples. Flow analysis - FIA and SIA. Miniaturization of analytical measurements. Economic aspects of analysis. Analytical reaction, chemical equilibrium in solutions. Gravimetric. Volumetric. Instrumental methods of qualitative and quantitave determination of analytes. Absorption and emission spectroscopy, UV-VIS spectrometry, fluorescence and phosphorence spectrophotometry, emission and atomic absorption spectroscopy, infrared spectrometry, Raman spectroscopy, Roentgen spectroscopic methods, radiochemical methods, NMR spectroscopy, mass spectrometry. Electroanalytical methods (voltamperometry, potenciometry, electroseparation, coulometry and conductometry). Thermical analysis. Kinetic methods of analysis. Separation methods. Microextraction techniques (DLLME, SDME, SPME). Gas chromatography. Liquid chromatography, TLC, HPLC.

#### **Recommended literature:**

1. D. Harvey, Modern Analytical Chemistry, 2000, McGraw-Hill Companies, Inc.

2. H.H. Willard, L.L. Merritt, J.A. Dean, F.A. Settle, Instrumental Methods of Analysis, 1988, Wadsworth Publ. Co.

3. A. Rios, A. Escarpa, B. Simonet, Miniaturization of Analytical Systems, 2009, John Wiley &Sons, Ltd.

4. Jaromír Ružicka, Elo Harald Hansen, Flow Injection Analysis, 1988, John Wiley & Sons.5. John R. Dean, Extraction Techniques in Analytical Sciences, 2009, John Wiley & Sons.

#### **Course language:**

Notes:		
<b>Course assessment</b> Total number of assessed students: 24		
N P		
0.0 100.0		
<b>Provides:</b> prof. RNDr. Andrej Oriňak, PhD., prof. Dr. Yaroslav Bazel', DrSc., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Katarína Reiffová, PhD., doc. Ing. Viera Vojteková, PhD., prof. Mgr. Vasil' Andruch, DSc.		
Date of last modification: 03.05.2015		
Approved:		

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
<b>Course ID:</b> ÚCHV/ PDS/18			
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period: esent		
Number of ECTS cr			
	ster/trimester of the co	burse:	
Course level: III.			
Prerequisities:			
Conditions for cours	se completion:		
Learning outcomes:			
Brief outline of the o	course:		
Recommended litera	ature:		
Course language:			
Notes:			
<b>Course assessment</b> Total number of asse	ssed students: 6		
N P			
0.0 100.0			
Provides:			
Date of last modifica	ntion:		
Approved:			