

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> CJP/AJD1/07		<b>Course name:</b> English Language for PhD Students 1			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 2					
<b>Recommended semester/trimester of the course:</b> 1.					
<b>Course level:</b> III.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 558					
N	Ne	P	Pr	abs	neabs
0.0	0.0	56.99	0.0	43.01	0.0
<b>Provides:</b> PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, PhD., Mgr. Zuzana Nad'ová					
<b>Date of last modification:</b> 06.02.2018					
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice					
<b>Faculty:</b> Faculty of Science					
<b>Course ID:</b> CJP/AJD2/07		<b>Course name:</b> English Language for PhD Students 2			
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 <b>Per study period:</b> 28 <b>Course method:</b> present					
<b>Number of credits:</b> 3					
<b>Recommended semester/trimester of the course:</b> 2.					
<b>Course level:</b> III.					
<b>Prerequisites:</b>					
<b>Conditions for course completion:</b>					
<b>Learning outcomes:</b>					
<b>Brief outline of the course:</b>					
<b>Recommended literature:</b>					
<b>Course language:</b>					
<b>Course assessment</b> Total number of assessed students: 558					
N	Ne	P	Pr	abs	neabs
0.0	0.0	92.29	1.43	6.27	0.0
<b>Provides:</b> PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, PhD.					
<b>Date of last modification:</b> 06.02.2018					
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.					

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ CDC/04	<b>Course name:</b> Citation in the Local Scientific Journal
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 5	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 1	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ CHN/2014/15	<b>Course name:</b> 2D chémia a nanotechnológia
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present	
<b>Number of credits:</b> 10	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Final examination.	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b> Explanation of the processes running at nanostructured substrates by quantum and computer chemistry. Characterisation by a methods of surface analysis.	
<b>Recommended literature:</b> Somorjai,G.A.: Introduction to surface chemistry and catalysis, Wiley, New York, 1994.	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 9	
abs	n
100.0	0.0
<b>Provides:</b> prof. RNDr. Andrej Oriňak, PhD., prof. RNDr. Renáta Oriňaková, DrSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ CM/04	<b>Course name:</b> Citation in the Monograph
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 20	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 3	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ CZC/04	<b>Course name:</b> Citation in the International Scientific Journal
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 10	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 36	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/DK/04	<b>Course name:</b> Local Conference
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 95	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ DKC/04	<b>Course name:</b> Local Currented Journal
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 15	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 10	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/DKZU/04	<b>Course name:</b> Local Conference with Foreign Participation
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 4	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 185	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ DNC/04	<b>Course name:</b> Local Non-Currented Journal
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 5	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 17	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ DZS/15	<b>Course name:</b> Doctoral Exam
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 5	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 37	
N	P
0.0	100.0
<b>Provides:</b>	
<b>Date of last modification:</b> 21.09.2017	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/EECH/03		<b>Course name:</b> Environmental Chemistry					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present							
<b>Number of credits:</b> 5							
<b>Recommended semester/trimester of the course:</b>							
<b>Course level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b> Examination.							
<b>Learning outcomes:</b>							
<b>Brief outline of the course:</b> The subject of environmental chemistry. Matter cycles on Earth. Geochemical cycles. Carbon, nitrogen, sulphur, phosphorous cycles. Metals and environment. Special cycles. Earth atmosphere composition, functions of atmosphere. Physical and chemical processes in atmosphere. Atmospheric photochemistry. Pollutants in atmosphere and greenhouse effect. Models of greenhouse effects. Principles of air quality control. Energetic Earth balance. Water environment and pollutants monitored. Classification of pollutants and ways of elimination. Waste water cleaning processes. Analytical methods in environmental chemistry, applications. Soil analysis, biogeochemical processes. Acid rain, metal ions in soil. Environmental analysis, strategy and concepts.							
<b>Recommended literature:</b> 1. G. Schwedt: The Essential Guide to Environmental Chemistry, Wiley and Sons, London 2001 2. R.N. Reeve, J.D. Barnes: General Environmental Chemistry, Wiley, London 1994							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 105							
A	B	C	D	E	FX	N	P
48.57	20.95	17.14	2.86	3.81	0.0	0.0	6.67
<b>Provides:</b> doc. RNDr. Andrea Straková Fedorková, PhD.							
<b>Date of last modification:</b> 21.09.2017							
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/ FKK1/03		<b>Course name:</b> Kinetics and Catalysis					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present							
<b>Number of credits:</b> 5							
<b>Recommended semester/trimester of the course:</b>							
<b>Course level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b> Test. Examination.							
<b>Learning outcomes:</b> Detailed and particular explanation of different types of reactions, homogeneous and heterogeneous catalysis.							
<b>Brief outline of the course:</b> Classification of chemical reactions. Reaction rates. Rate laws. Reaction order. Elementary reactions. Complicated reactions. Theory of chemical kinetics. Experimental methods of chemical kinetics. Complex reactions mechanism. Explosions. Photochemical reactions. Essence of adsorption, types of adsorption, adsorption isotherms. Essence of catalytic processes. Catalysis influenced phenomena. Homogeneous and heterogeneous catalysis. Enzymatic catalysis.							
<b>Recommended literature:</b> P. W. Atkins : Physical Chemistry, Oxford University Presss, Oxford 1986, 1990, 1994, 1998. Richard I. Masel: Chemical Kinetics & Catalysis, Wiley-Interscience, 2001. I. CHORKENDORFF, J. W. NIEMANTSVERDRIET: Fundamentals of Kinetics and Catalysis, CONCEPTS OF MODERN CATALYSIS AND KINETICS, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, 2003.							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 40							
A	B	C	D	E	FX	N	P
70.0	5.0	2.5	0.0	0.0	0.0	0.0	22.5
<b>Provides:</b> prof. RNDr. Renáta Oriňaková, DrSc., RNDr. František Kaľavský							
<b>Date of last modification:</b> 21.09.2017							
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/ FMP1/03		<b>Course name:</b> Modelling of Physicochemical Processes					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present							
<b>Number of credits:</b> 6							
<b>Recommended semester/trimester of the course:</b>							
<b>Course level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b> Seminar work. Examination.							
<b>Learning outcomes:</b> To explain general principles of modelling, to report the examples of mathematic models of basic physicochemical processes.							
<b>Brief outline of the course:</b> Modelling and processes control. General principles of modelling. Examples of mathematical models of processes dynamics. Dynamic properties of processes. Dynamic characteristics of processes. Computational models.							
<b>Recommended literature:</b> William L. Luyben: Process Modeling, Simulation, and Control for Chemical Engineers (2nd edition), McGraw-Hill College, 1990. Richard G. Rice, Duong D. Do, D. Do Duong: Applied Mathematics and Modeling for Chemical Engineers, John Wiley & Sons Inc, 1995.							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 28							
A	B	C	D	E	FX	N	P
67.86	0.0	3.57	0.0	0.0	0.0	0.0	28.57
<b>Provides:</b> prof. RNDr. Renáta Oriňaková, DrSc.							
<b>Date of last modification:</b> 21.09.2017							
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/IG/04	<b>Course name:</b> Acquirement of Internal Grant
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 10	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 173	
abs	n
100.0	0.0
<b>Provides:</b> prof. RNDr. Jozef Gonda, DrSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/IMS1/03		<b>Course name:</b> Mass Spectrometric Identification					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present							
<b>Number of credits:</b> 4							
<b>Recommended semester/trimester of the course:</b>							
<b>Course level:</b> III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b>							
<b>Learning outcomes:</b>							
<b>Brief outline of the course:</b> 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.							
<b>Recommended literature:</b>							
<b>Course language:</b>							
<b>Course assessment</b> 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
<b>Provides:</b> prof. RNDr. Andrej Oriňak, PhD., RNDr. Ondrej Petruš, PhD.							
<b>Date of last modification:</b> 21.09.2017							
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.							



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/MCV1/03		<b>Course name:</b> Methods of Chemical Research					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 1 <b>Per study period:</b> 28 / 14 <b>Course method:</b> present							
<b>Number of credits:</b> 5							
<b>Recommended semester/trimester of the course:</b>							
<b>Course level:</b> II., III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b> The students are expected to actively participate in seminars by demonstrating solutions to selected problems (a presentation of a real problem) in front of their course-fellows. Examination							
<b>Learning outcomes:</b> To make students known with the physicochemical parameters' means of measurement, evaluation, and interpretation for the study of the process, i.e. the rate of reaction, mechanism, intermediates and final products in both homogeneous and heterogeneous systems.							
<b>Brief outline of the course:</b> Overview of basic principles of the determination of physicochemical quantities (dissociation constant, activity coefficient, solubility product, stability constant of complex, diffusion coefficient). Calorimetry and its utilisation. Experimental methods in kinetics. The Butler-Volmer equation. Survey of selected key topics in colloid chemistry. Adsorption-BET equation. Determination of molecular mass of macromolecules. A discussion of topics selected from active research fields.							
<b>Recommended literature:</b> W.J. Moore: Physical Chemistry, Longman Group Limited, London 1972 H. H. Willard et al.: Instrumental Methods of Analysis, Wadsworth, Belmont 1988 J. Koryta, J. Dvořák, L. Kavan: Principles of Electrochemistry, John Wiley & Sons, New York 1993 P.W. Atkins: Physical Chemistry, Oxford University Press, Oxford, New York 2002 D. Kladeková: Supportive Textbooks in Course: Methods of Chemical Research, The ESF project no. SOP HR 2005/NP1-051 11230100466, Košice 2008							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 35							
A	B	C	D	E	FX	N	P
48.57	28.57	2.86	5.71	0.0	0.0	0.0	14.29

<b>Provides:</b> doc. RNDr. Andrea Straková Fedorková, PhD.
<b>Date of last modification:</b> 21.09.2017
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ MK/04	<b>Course name:</b> International Conference
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 6	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 195	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ NEM/04	<b>Course name:</b> Introduction of a New Experimental Method
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 15	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 7	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ NZ/04	<b>Course name:</b> Not-Reviewed International or Local Proceedings
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 162	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ ODZP/2014/15	<b>Course name:</b> Obhajoba dizertačnej práce
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 30	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 32	
N	P
0.0	100.0
<b>Provides:</b>	
<b>Date of last modification:</b> 21.09.2017	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ PDS/18	<b>Course name:</b> Writing Dissertation Work
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 15	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 5	
N	P
0.0	100.0
<b>Provides:</b>	
<b>Date of last modification:</b> 17.04.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ PFCH1/2014/14	<b>Course name:</b> Pokročilá fyzikálna chémia 1
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present	
<b>Number of credits:</b> 10	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Final examination.	
<b>Learning outcomes:</b> Experiences in heterogenous catalysis.	
<b>Brief outline of the course:</b> Completed knowledges from heterogenous catalysis, methods of catalysts study, catalytic reactions study. Transport phenomena during heterogenous catalysis. Calculation of kinetic constants and methods of catalysts characterisation. Main impact is in area of catalysts for methane conversion to hydrogen or useful chemicals.	
<b>Recommended literature:</b> 1. Atkins : Physical Chemistry I.-IV. 2. P.C.Schmidt: Methods in Physical Chemistry, Wiley-VCH GmbH, 2012.	
<b>Course language:</b> Slovak, English	
<b>Course assessment</b> Total number of assessed students: 7	
N	P
0.0	100.0
<b>Provides:</b> prof. RNDr. Andrej Oriňak, PhD., prof. RNDr. Renáta Oriňaková, DrSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guarantee prof. RNDr. Renáta Oriňaková, DrSc. Co-guaranteed doc. RNDr. Zuzana Vargová, Ph.D. Guarantee prof. RNDr. Andrej Oriňak, PhD.	



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ PFCH2/2014/14	<b>Course name:</b> Pokročilá fyzikálna chémia 2
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 2 / 2 <b>Per study period:</b> 28 / 28 <b>Course method:</b> present	
<b>Number of credits:</b> 10	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b> Final exam.	
<b>Learning outcomes:</b> Exam.	
<b>Brief outline of the course:</b> Covered is scientific problem of fast reactions, photochemistry and laser spectroscopy as well as electrochemical reactions. It forms a basis for PhD students to solve problems in experimental work and to find suitable evaluations.	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 11	
N	P
0.0	100.0
<b>Provides:</b> prof. RNDr. Andrej Oriňak, PhD., doc. RNDr. Zuzana Vargová, Ph.D., prof. RNDr. Renáta Oriňaková, DrSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guarantee prof. RNDr. Renáta Oriňaková, DrSc. Co-guaranteed doc. RNDr. Zuzana Vargová, Ph.D. Guarantee prof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ POVK/04	<b>Course name:</b> Membership in a Conference organizing Committee
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 33	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ PPC/04	<b>Course name:</b> Direct Pedagogical Activities
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 1	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 347	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ PPC/04	<b>Course name:</b> Direct Pedagogical Activities
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 1	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 347	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/ PPCHR1/03		<b>Course name:</b> Pokročilý kurz chromatografie					
<b>Course type, scope and the method:</b> <b>Course type:</b> Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 <b>Per study period:</b> 42 <b>Course method:</b> present							
<b>Number of credits:</b> 6							
<b>Recommended semester/trimester of the course:</b>							
<b>Course level:</b> III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b>							
<b>Learning outcomes:</b>							
<b>Brief outline of the course:</b>							
<b>Recommended literature:</b>							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 1							
A	B	C	D	E	FX	N	P
0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
<b>Provides:</b> prof. RNDr. Andrej Oriňak, PhD.							
<b>Date of last modification:</b> 21.09.2017							
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ PVS/04	<b>Course name:</b> Patents, Inventions, Software
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 0	
abs	n
0.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice		
<b>Faculty:</b> Faculty of Science		
<b>Course ID:</b> KPE/ PgVU/17	<b>Course name:</b> Pedagogy for university teachers	
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 28s <b>Course method:</b> present		
<b>Number of credits:</b> 5		
<b>Recommended semester/trimester of the course:</b>		
<b>Course level:</b> III.		
<b>Prerequisites:</b>		
<b>Conditions for course completion:</b>		
<b>Learning outcomes:</b>		
<b>Brief outline of the course:</b>		
<b>Recommended literature:</b>		
<b>Course language:</b>		
<b>Course assessment</b> Total number of assessed students: 12		
abs	n	neabs
100.0	0.0	0.0
<b>Provides:</b> PaedDr. Renáta Orosová, PhD.		
<b>Date of last modification:</b> 05.02.2018		
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.		

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice		
<b>Faculty:</b> Faculty of Science		
<b>Course ID:</b> KPPaPZ/PsVU/17	<b>Course name:</b> Psychology for University Lecturers	
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> 28s <b>Course method:</b> present		
<b>Number of credits:</b> 5		
<b>Recommended semester/trimester of the course:</b>		
<b>Course level:</b> III.		
<b>Prerequisites:</b>		
<b>Conditions for course completion:</b>		
<b>Learning outcomes:</b>		
<b>Brief outline of the course:</b>		
<b>Recommended literature:</b>		
<b>Course language:</b>		
<b>Course assessment</b> Total number of assessed students: 12		
abs	n	neabs
100.0	0.0	0.0
<b>Provides:</b> Mgr. Marta Dobrowolska Kulanová, PhD., doc. PhDr. Beata Gajdošová, PhD.		
<b>Date of last modification:</b> 20.02.2018		
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.		



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ RZ/04	<b>Course name:</b> Reviewed International or Local Proceedings
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 5	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 265	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ SCI/04	<b>Course name:</b> SCI Citation
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 20	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 128	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ SDPR/04	<b>Course name:</b> Co-worker of a Local Project
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 348	
abs	n
99.71	0.29
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ SMPR/04	<b>Course name:</b> Co-worker of an International Project
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 15	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 36	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice							
<b>Faculty:</b> Faculty of Science							
<b>Course ID:</b> ÚCHV/ TFCH/03		<b>Course name:</b> New Trends in Analytical Chemistry					
<b>Course type, scope and the method:</b> <b>Course type:</b> Lecture / Practice <b>Recommended course-load (hours):</b> <b>Per week:</b> 3 / 1 <b>Per study period:</b> 42 / 14 <b>Course method:</b> present							
<b>Number of credits:</b> 5							
<b>Recommended semester/trimester of the course:</b>							
<b>Course level:</b> III.							
<b>Prerequisites:</b>							
<b>Conditions for course completion:</b> Seminar work. Examination.							
<b>Learning outcomes:</b> News in physical chemistry developments.							
<b>Brief outline of the course:</b> New trends in physical chemistry methods, physical functions of nanostructured surfaces, spectral signal enhancement, separation of the nanoobjected films, nanocatalysis; theoretical background and applications of electrochemical impedance spectroscopy, progress and new trends in chemical sensors, electrochemical sensors and biosensors. Moderné mikroskopické metódy. Advanced Microscopic Methods. Overview of various microscopy methods - light microscopy, electron microscopy, scanning probe microscopy. Principles, theory and examples of practical application of electrochemical impedance spectroscopy. 3D interpretation of the impedance spectra. Modeling of equivalent circuits. Basic electrochemical properties of Li-ion batteries - cycling, capacity, intercalation and conversion.							
<b>Recommended literature:</b> Peter C. Schmidt: Methods in Physical Chemistry, Wiley-VCH Verlag GmbH and Co., 2012. Scientific journals articles.							
<b>Course language:</b>							
<b>Course assessment</b> Total number of assessed students: 7							
A	B	C	D	E	FX	N	P
100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> doc. RNDr. Andrea Straková Fedorková, PhD., prof. RNDr. Andrej Oriňák, PhD., prof. RNDr. Renáta Oriňáková, DrSc., RNDr. Andrea Morovská Turoňová, PhD.							
<b>Date of last modification:</b> 21.09.2017							
<b>Approved:</b> Co-guarantee prof. RNDr. Renáta Oriňáková, DrSc. Co-guaranteed doc. RNDr. Zuzana Vargová, Ph.D. Guarantee prof. RNDr. Andrej Oriňák, PhD.							

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ VBP/04	<b>Course name:</b> Supervision of Bachelor Thesis
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 6	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 282	
abs	n
100.0	0.0
<b>Provides:</b> prof. RNDr. Jozef Gonda, DrSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ VPBP/04	<b>Course name:</b> Review of a Bachelor Thesis
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 60	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/VPSV/04	<b>Course name:</b> Supervision of a Students Scientific Work
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 6	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 64	
abs	n
100.0	0.0
<b>Provides:</b> prof. RNDr. Jozef Gonda, DrSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	



## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ VYS/04	<b>Course name:</b> Presentation in Seminar
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 173	
abs	n
100.0	0.0
<b>Provides:</b> prof. RNDr. Jozef Gonda, DrSc.	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňaková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňak, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ ZKC/04	<b>Course name:</b> International Currented Journal
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 20	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 244	
abs	n
99.59	0.41
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ ZNC/04	<b>Course name:</b> International Non-Currented Journal
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 5	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 16	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	

## COURSE INFORMATION LETTER

<b>University:</b> P. J. Šafárik University in Košice	
<b>Faculty:</b> Faculty of Science	
<b>Course ID:</b> ÚCHV/ ZSP/04	<b>Course name:</b> Study Stay Abroad
<b>Course type, scope and the method:</b> <b>Course type:</b> <b>Recommended course-load (hours):</b> <b>Per week: Per study period:</b> <b>Course method:</b> present	
<b>Number of credits:</b> 2	
<b>Recommended semester/trimester of the course:</b>	
<b>Course level:</b> III.	
<b>Prerequisites:</b>	
<b>Conditions for course completion:</b>	
<b>Learning outcomes:</b>	
<b>Brief outline of the course:</b>	
<b>Recommended literature:</b>	
<b>Course language:</b>	
<b>Course assessment</b> Total number of assessed students: 75	
abs	n
100.0	0.0
<b>Provides:</b>	
<b>Date of last modification:</b> 26.02.2018	
<b>Approved:</b> Co-guaranteeprof. RNDr. Renáta Oriňáková, DrSc.Co-guaranteedoc. RNDr. Zuzana Vargová, Ph.D.Guaranteeprof. RNDr. Andrej Oriňák, PhD.	