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University: P. J. Š	afárik Univers	ity in Košice				
Faculty: Faculty of	of Science					
Course ID: ÚCH BAP/15	Durse ID: ÚCHV/ AP/15Course name: Advanced Practical from Coordination and Bioinorganic Chemistry					
Course type, scop Course type: Pra Recommended o Per week: 2 Per Course method:	be and the met actice course-load (h study period: present	hod: ours): 28				
Number of ECTS	credits: 3					
Recommended se	mester/trimes	ter of the cours	e: 1.			
Course level: II.						
Prerequisities:						
Conditions for co	urse completi	on:				
Learning outcom	es:					
Brief outline of th	e course:					
Recommended lit	terature:					
Course language:						
Notes:						
Course assessmen Total number of a	nt ssessed studen	ts: 33				
A	В	С	D	Е	FX	
72.73	72.73 18.18 9.09 0.0 0.0 0.0					
Provides: doc. RN	IDr. Zuzana Va	urgová, Ph.D., do	c. RNDr. Mirosl	av Almáši, PhD.		
Date of last modi	fication: 03.05	.2015				
Approved:				_		

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty	of Science					
Course ID: KF/ AFS/05	Course ID: KF/ Course name: Ancient Philosophy and Present Times AFS/05					
Course type, sco Course type: Pr Recommended Per week: 2 Per Course method	pe and the met ractice course-load (h r study period: : present	thod: ours): 28				
Number of ECT	S credits: 2					
Recommended s	semester/trimes	ster of the cours	e: 2.			
Course level: II.						
Prerequisities:						
Conditions for c	ourse completi	on:				
Learning outcor	nes:					
Brief outline of t	the course:					
Recommended I	iterature:					
Course language	e:					
Notes:						
Course assessme Total number of	ent assessed studen	ts: 31				
A	В	С	D	E	FX	
80.65	80.65 6.45 6.45 0.0 6.45 0.0					
Provides: Doc. P	Provides: Doc. PhDr. Peter Nezník, CSc.					
Date of last mod	Date of last modification: 17.09.2020					
Approved:				-		

Faculty: Faculty of Science

**Course ID:** ÚCHV/ **Course name:** Bioanalytical Chemistry BACH1/03

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.

Wilson, I.: Bioanalytical Separations 4, (Handbook of Analytical Separations), Elsevier, 2003.
 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: 100						
A B C D E FX						
34.0	37.0	19.0	9.0	1.0	0.0	
Provides: doc. RNDr. Katarína Reiffová, PhD.						
Date of last modification: 03.05.2015						
Approved:	Approved:					

University: P. J.	University: P. J. Šafárik University in Košice					
Faculty: Faculty	Faculty: Faculty of Science					
<b>Course ID:</b> ÚCH BCM/04	Course ID: ÚCHV/ Course name: Biochemistry of Microorganisms BCM/04					
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 ECT	S credits: 6					
Recommended s	emester/trimes	ter of the cours	e: 3.			
Course level: II.						
Prerequisities:						
<b>Conditions for c</b> 2 tests test	ourse completi	on:				
Learning outcor The aim of bio microorganisms.	nes: chemistry of m	icroorgamism te	aching is to ac	quire knowledge	in the field of	
<b>Brief outline of the course:</b> Structure and physiology of microorganisms; microbial nutrition, growth and control; microbial molecular biology and genetics; medical microbiology; immunology and applied microbiology; microbial diseases and their control.						
Recommended literature: McCall D., Stock D., Achrey P., Introduction to Microbiology, Blackwell Science, USA, 2001 Willey, J.M., Sherwood L.M., Woolverton C.J., Prescott, Harley, and Klein's Microbiology, McGraw-Hill Int. Ed., USA, 2008 Black J.G., Microbiology, John Wiley and Sons, USA, 2008						
Course language	2:					
Notes:						
Course assessment Total number of assessed students: 164						
А	В	С	D	Е	FX	
51.22	51.22 25.0 16.46 6.71 0.61 0.0					
Provides: prof. F	NDr. Mária Ko	žurková, CSc.				
Date of last modification: 03.05.2015						
Approved:						

University: P. J	University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science						
<b>Course ID:</b> ÚC BAC1/04	Course ID: ÚCHV/ Course name: Bioinorganic Chemistry I BAC1/04					
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 EC	<b>FS credits:</b> 5					
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1., 3.			
Course level: I.	, II.					
Prerequisities:						
<b>Conditions for</b> Test or seminar examination	<b>course completi</b> works	on:				
Learning outco The basic know biocatalysis, me metals in the en	Learning outcomes: The basic knowledges about biometal interactions with biomolecules, biomaterials, biominerals, biocatalysis, metals in biology and medicine, metal-based drugs, toxic metals for biosystems and metals in the environment.					
<b>Brief outline of the course:</b> Metalic and non-metalic elements and their roles in biological systems (biometals, bulk biological elements, essential trace elements). Biocoordination compounds, bioligands. Biocatalyzers. Oxygen carriers and oxygen transport proteins. Photochemical process. Catalysis and regulation processes. Calcium biominerals and biomineralization. Toxic metals. Application of knowledge of bioinorganic chemistry in pharmacy, chemotherapy (e.g. platinum complexes in cancer therapy) radiodiagnostics, mineral biotechnology, ecology and in other branches of life.						
<ul> <li>Recommended literature:</li> <li>1. Shriver D. F., Atkins P. W., Overton T. L., Rourke J.P., Weller M.T., Amstrong F.A.: Shiver &amp; Atkins. Inorganic Chemistry. Oxford University Press, Oxford 2006.</li> <li>2. Kaim W., Schwederski B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life. Wiley, Chichester 1998.</li> <li>3. Wilkins P. C., Wilkins R. G.: Inorganic Chemistry in Biology. OCP, Oxford 1997.</li> </ul>						
Course language:						
Notes:						
Course assessm Total number of	Course assessment Total number of assessed students: 304					
А	В	С	D	E	FX	
41.12	28.29	18.75	5.92	5.59	0.33	
Provides: doc. RNDr. Zuzana Vargová, Ph.D.						

**Date of last modification:** 03.05.2015

Approved:

Hattan D. I. Čaffaila Hattan ita in Katian						
University: P. J. Safarik University in Kosice						
Faculty: Faculty of Science						
Course ID: ÚCHV/ Course name: Bioinorganic Chemistry II BAC2/05						
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: ÚCHV/BAC1/04						
Conditions for course completion:						
Goal of the course is to provide the students with a knowledge of biocoordination compounds and their physicochemical properties, biological efficiency of some coordination compounds with transition elements (Zn, Fe, Co, Mn, Cu). <b>Brief outline of the course:</b> Goal of the course is to provide the students with a knowledge of biocoordination compounds and their physicochemical properties, biological efficiency of some coordination compounds with transition elements (Zn, Fe, Co, Mn, Cu).						
<b>Recommended literature:</b> Kendrick J. M., May M. T., Plishka M. J., Robinson K. D.: Metals in biological systems, Ellis						
Horwood, New York, 1992. Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, John Wiley and Sons, Chichester 1994.						
Horwood, New York, 1992. Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, John Wiley and Sons, Chichester 1994. Course language:						
Horwood, New York, 1992. Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, John Wiley and Sons, Chichester 1994. Course language: Notes:						
Horwood, New York, 1992. Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, John Wiley and Sons, Chichester 1994. Course language: Notes: Course assessment Total number of assessed students: 30						
Horwood, New York, 1992.Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry ofLife, John Wiley and Sons, Chichester 1994.Course language:Notes:Course assessmentTotal number of assessed students: 30EFX						
Horwood, New York, 1992.Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry ofLife, John Wiley and Sons, Chichester 1994.Course language:Notes:Course assessmentTotal number of assessed students: 30ABCDEFX76.676.6716.670.00.00.0						
Horwood, New York, 1992.Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, John Wiley and Sons, Chichester 1994.Course language:Notes:Course assessment Total number of assessed students: 30ABCDEFX76.676.6716.670.0Provides: doc. RNDr. Zuzana Vargová, Ph.D.						
Horwood, New York, 1992.Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, John Wiley and Sons, Chichester 1994.Course language:Notes:Image: Course assessment Total number of assessed students: 30ABCDEFX76.676.6716.670.00.00.0Provides: doc. RNDr. Zuzana Vargová, Ph.D.Date of last modification: 03.05.2015						

University: P. J. Safái	rik University in Košice
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Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Bioinorganic Chemistry III
BAC3/04	

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

Course method: present

**Number of ECTS credits:** 5

Recommended semester/trimester of the course: 3.

Course level: II.

**Prerequisities:** ÚCHV/BAC2/05

Conditions for course completion:

Test.

#### Learning outcomes:

To make the acquaintance of actual status and selected topics of the research in bioinorganic chemistry.

#### Brief outline of the course:

Singlet and triplet dioxygen and organisms. Oxygen atom transfer reactions. Dioxygen radical generating systems. Inorganic compounds as the analogues of the active sites of the metalloproteins. Construction of Small molecule enzyme mimics as drugs (SOD mimics). Metals in medical applications (the use of chelating agents, metal based chemotherapeutic drugs, metallodrugs as diagnostic agents, metals as biomaterials). Physical methods.

#### **Recommended literature:**

1. Kaim, W., Schwederski, B.: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, John Wiley and Sons, Chichester 1994.

2. Wilkins P.C., Wilkins R.G.: Inorganic Chemistry in Biology. Oxford Science Publications, Oxford 1997.

3. Kendrick M.J. a kol.: Metals in biological systems, Ellis Horwood Limited, Chichester, England, 1992

4. Helsen, J.A. Breme H.J.: Metals as biomaterials, Wiley, Chichester, England, 1998.

### **Course language:**

Notes:

### Course assessment

Total number of assessed students: 23

А	В	С	D	Е	FX	
65.22	17.39	17.39	0.0	0.0	0.0	
Provides: doc. RNDr. Zuzana Vargová, Ph.D.						
Date of last modification: 03.05.2015						

Approved:

University: P. J.	Šafárik Univers	ity in Košice					
Faculty: Faculty	of Science						
<b>Course ID:</b> ÚCH BACM/14	Course ID: ÚCHV/ Course name: Bioinorganic Chemistry and Toxicology BACM/14						
Course type, sco Course type: Recommended Per week: Per Course method	pe and the met course-load (he study period: : present	hod: ours):					
Number of ECT	S credits: 4						
Recommended s	emester/trimes	ter of the cours	e:				
Course level: II.							
Prerequisities: Ú	CHV/BAC3/04	,ÚCHV/TOX1/(	)3				
Conditions for co	ourse completi	on:					
Learning outcon	nes:						
Brief outline of t	he course:						
Recommended li	iterature:						
Course language	2:						
Notes:	,						
Course assessme Total number of a	ent assessed student	ts: 3					
A	В	С	D	Е	FX		
66.67	5.67 33.33 0.0 0.0 0.0 0.0						
Provides:			<u>I</u>	-	1		
Date of last mod	ification: 03.05	.2015					
Approved:							

Faculty: Faculty of Science

Course ID: ÚCHV/ Course name: Bioorganic chemistry BOC/03

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

Number of ECTS credits: 5

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

Course level: II.

Prerequisities:

Conditions for course completion:

Examinationn

#### Learning outcomes:

Explanation of fundamental principles for the construction of bioorganic molecular models of biochemical precesses using the tools of organic chemistry.

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

1. Introduction: Basic consideration, proximity effects in biochemistry, Molecular adaptation, Molecular recognition at the supramolecular level.

2. Bioorganic Chemistry of amino acids and polypeptides: Chemistry of the living cells, Analogy between organic reactions and biochemical tranformations, Chemistry of the peptide bond, Nonribosomal peptide formation, Asymmetric synthesis od amino acids, Asymmetric synthesis with chiral organometalic catalysts, Transition state analogs, Antibodies as enzymes, Chemical mutations, Molecular recognition and Drug design.

3. Bioorganic Chemistry of the Phosphate groups and polynucleotides: Energy storage, DNA intercalates, RNA molecules as catalysts.

4. Enzyme Chemistry: Introduction to catalysis and enzymes, Multifuntional catalysis and Simple models, alfa-Chymotrypsin, Other hydrolytic enzymes, Strereoelectronic control in hydrolytic reactions, Immobilized enzymes, Enzymes in synthetic organic chemistry, Enzyme-Analog-Built polymers, Design of molecular clefts.

5. Enzyme Models: Host-Guest complexation chemistry, New development in crown ether chemistry, Membrane chemistry and micelles, Polymers, Cyclodextrins, Enzyme design using steroid template, Remote functionalisation reactions, Polyene biomimetic cyclisations.

6. Metal Ions: Metal ions in proteins and biological molecules, Carbopeptidase A, Hydrolysis of amino acid esters and peptides, Iron and oxygen transport, Cooper ion, Cobalt and vitamin B12 action, Oxidoreduction, Pyridoxal phosphate, Biotin.

### **Recommended literature:**

Voet J. : Biochemistry, Springer Verlag, 1998 Dugas H.: Bioorganic Chemistry, Springer Verlag, 1999.

#### Course language:

Notes:						
Course assessment Total number of assessed students: 157						
А	В	С	D	Е	FX	
82.8	5.1	7.01	3.82	1.27	0.0	
Provides: prof. RNDr. Jozef Gonda, DrSc.						
Date of last modification: 03.05.2015						
Approved:						

University: P. J.	. Šafárik Univers	ity in Košice				
Faculty: Faculty	y of Science					
Course ID: KF/ KDF/05	<b>Course name:</b> Chapters from History of Philosophy of 19th and 20th Centuries (General Introduction)					
Course type, sc Course type: I Recommended Per week: 2 Pe Course metho	ope and the met Practice I course-load (h er study period: d: present	hod: ours): 28				
Number of EC	<b>FS credits:</b> 2					
Recommended	semester/trimes	ter of the cours	e: 2.			
Course level: II	•					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:					
Course languag	ge:					
Notes:						
Course assessm Total number of	ent f assessed studen	ts: 10				
А	В	С	D	E	FX	
50.0	20.0	10.0	0.0	10.0	10.0	
Provides: PhDr.	Dušan Hruška, I	PhD.	<u>I</u>		<u>I</u>	
Date of last mo	dification: 03.05	.2015				
Approved:						

University: P. J.	. Šafárik Univers	ity in Košice				
<b>Faculty:</b> Faculty	y of Science					
Course ID: ÚCHV/ Course name: Chemical Excursion CHE2/03						
Course type, sc Course type: F Recommended Per week: Per Course metho	ope and the met Practice I course-load (h r study period: 1 d: present	thod: ours): lt				
Number of EC	<b>FS credits:</b> 4					
Recommended	semester/trimes	ster of the cours	se: 2., 4.			
Course level: II	•					
Prerequisities:						
Conditions for	course completi	on:				
Learning outco	mes:					
Brief outline of	the course:					
Recommended	literature:			-		
Course languag	ge:					
Notes:						
Course assessm Total number of	ent f assessed studen	ts: 94		-		
Α	В	С	D	E	FX	
89.36	10.64	0.0	0.0	0.0	0.0	
Provides: doc. I	RNDr. Zuzana Va	argová, Ph.D.	I			
Date of last mo	dification: 03.05	5.2015				
Approved:						

University: P. J. Š	afárik Univers	ity in Košice					
Faculty: Faculty o	f Science						
Course ID: ÚCHV TOX1/03	ÚCHV/ Course name: Chemical Toxicology						
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 set	mester/trimes	ter of the cours	e: 1., 3.				
Course level: II.							
Prerequisities:							
Conditions for co	urse completi	on:					
Learning outcome Goal of the course effect, interactions	es: is to provide between chen	the students with nicals and biolog	a knowledge of ical systems.	f toxic substance:	s and their toxic		
Historical aspects compounds (absor toxic responses). T Food additives and safety practices w European Union a	, types of tox ption, distribu ypes of expose contaminants rith chemical s nd order of Gc	ic substances, d tion, excretion, n ure and response. Pesticides. Env substances, design overnment of Slo	lose-response re netabolism of to Drugs as toxic s ironmental pollu gnation of subst vak Republic.	elationship. Dispa xic compounds, f substances. Indus itants. Natural pro ances in accorda	osition of toxic factors affecting strial toxicology. oducts. Risk and ince of norm of		
Recommended literature: J. A. Timbrell: Introduction to Toxicology, Taylor and Francis, London 1989 V. E. Forbes, T. L. Forbes: Toxicology in Theory and Practice, Chapmane Hall, London 1994 H. M. Stahr: Analytical Methods in Toxicology, John Wiley & Sons, New York 1991							
<b>Course language:</b>							
Notes:							
Course assessment Total number of assessed students: 47							
А	В	С	D	Е	FX		
29.79	29.79	23.4	10.64	2.13	4.26		
Provides: RNDr. N	Airoslava Mati	ková Maľarová,	PhD.				
Date of last modif	ication: 03.05	.2015					
Approved:							

[	<u> </u>						
<b>University:</b> P. J.	Safárik Unive	ersity in Košice					
Faculty: Faculty	Faculty: Faculty of Science						
Course ID: ÚC CMG/03	HV/ Course	name: Chemical m	nanagement				
Course type, sc Course type: I Recommended Per week: 3 Pe Course method	ope and the m Lecture l course-load er study perio d: present	nethod: (hours): d: 42					
Number of EC	<b>FS credits:</b> 5						
Recommended	semester/trim	ester of the cours	e: 1.				
Course level: II							
Prerequisities:	,						
Conditions for	course comple	etion:					
Learning outco The main goal i the basic princ pharmaceutical	mes: s thorough the iples of produ industry.	lectures of top ma ction management	nagers from slo , marketing, s	ovak chemical con strategy building	mpanies ilustrate in chemical and		
Brief outline of Basic processes Slovak chemica	the course: connected to l companies	industry manufactu	uring and mana	agement of chemic	cal production in		
Recommended Internal sources	literature:						
Course languag	ge:						
Notes:							
Course assessment Total number of assessed students: 170							
А	В	С	D	Е	FX		
54.12	2 44.71 1.18 0.0 0.0 0.0						
Provides: RND	r. Ján Elečko, I	PhD.		·			
Date of last mo	dification: 03.	05.2015					
Approved:							

University:	P. J. Šafár	ik University in	n Košice				
Faculty: Fac	culty of So	cience					
Course ID: CNM/15	Course ID: ÚCHV/ Course name: Chemistry of nanomaterials CNM/15						
Course type Course typ Recommer Per week: Course me	e, scope an be: Lecture ided cour 2 / 1 Per s ethod: pre	nd the method e / Practice se-load (hours study period: 2 sent	: 5): 28 / 14				
Number of	ECTS cre	edits: 5					
Recommend	ded semes	ster/trimester	of the cours	se: 1., 3.			
Course leve	<b>l:</b> II., III.						
Prerequisiti	es:						
Conditions	for cours	e completion:					
Learning ou	itcomes:						
Brief outlin	e of the co	ourse:					
Recommend	ded litera	ture:					
Course lang	guage:						
Notes:							
Course assessment Total number of assessed students: 28							
A	В	C	D	E	FX	N	Р
71.43	14.29	7.14	0.0	0.0	0.0	0.0	7.14
Provides: pr	Provides: prof. RNDr. Vladimír Zeleňák, DrSc.						
Date of last	modifica	tion: 03.05.201	5				
Approved:							

University: P. J. Šafá	rik University in Košice				
Faculty: Faculty of S	cience				
Course ID: ÚCHV/ RP/14	Course name: Class Project				
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent				
Number of ECTS cr	edits: 6				
Recommended seme	ster/trimester of the cours	e: 2.			
Course level: II.					
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 asse	ssed students: 181				
	abs	n			
	98.9	1.1			
Provides: doc. RNDr RNDr. Zuzana Vargov RNDr. Juraj Kuchár, J prof. Dr. Yaroslav Baz PhD., doc. RNDr. Tat Serbin, PhD., RNDr.	Miroslav Almáši, PhD., R vá, Ph.D., RNDr. Martin Vav PhD., prof. RNDr. Vladimír zeľ, DrSc., prof. Mgr. Vasiľ ana Gondová, CSc., doc. In Jana Šandrejová, PhD.	NDr. Miroslava Matiková Maľarová, PhD., doc. /ra, PhD., prof. RNDr. Juraj Černák, DrSc., doc. Zeleňák, DrSc., doc. RNDr. Ivan Potočňák, PhD., Andruch, DSc., doc. RNDr. Katarína Reiffová, g. Viera Vojteková, PhD., RNDr. Rastislav			
Date of last modifica	ition: 03.05.2015				
Approved:					

University: P. J. Šafá	rik Universi	ty in Košice			
Faculty: Faculty of S	cience				
<b>Course ID:</b> KPPaPZ/KK/07	Course ID: Course name: Communication and Cooperation				
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	nd the met ce rse-load (ho dy period: esent	hod: ours): 28			
Number of ECIS cr	edits: 2				
Recommended seme	ster/trimes	ter of the course: 3.			
Course level: 11.					
Prerequisities:					
Conditions for cours	e completio	on:			
Learning outcomes:					
Brief outline of the c	ourse:				
<b>Recommended litera</b>	iture:				
Course language:					
Notes:					
Course assessment Total number of asses	ssed student	s: 281			
abs		n	Z		
98.22 1.78 0.0					
Provides: Mgr. Ondrej Kalina, PhD., Mgr. Lucia Barbierik, PhD.					
Date of last modifica	tion: 24.06	.2021			
Approved:					

University: P. J. Šafárik University in Košice							
Faculty: Faculty	Faculty: Faculty of Science						
Course ID: ÚC VMS1/03	<b>Course ID:</b> ÚCHV/ <b>Course name:</b> Computing Methods in X-Ray Structure Analysis VMS1/03						
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 EC	<b>FS credits:</b> 2						
Recommended	semester/trimes	ster of the cours	se: 2., 4.				
Course level: II	•						
Prerequisities:	ÚCHV/STA1/03						
Conditions for Semester project	<b>course completi</b> et.	ion:					
Learning outco Crystal structur	<b>mes:</b> e analysis of sim	ple samples, tab	ular and graphica	al processing of th	ne results.		
<b>Brief outline of the course:</b> Practical course of crystal structures solution for substances with the number of atoms less than 1000 since data processing to publishing structures: selection of the right space group and generate the necessary files for the structure solution (Wingx); search for the model of the structure (SHELX, SIR and SUPERFLIP), refinement of the model (SHELX); graphical representation of the structure (DIAMOND); drawing of the structural scheme (ISIS DRAW); calculations of bond lengths, angles and hydrogen bonds (PARST); tabulation of the results of crystal structure analysis, obtaining the necessary data for similar structures from the Cambridge Structural Database System. Processing of results of powder diffraction technique, modeling of powder diffraction patterns (MER CUPY)							
<b>Recommended</b> Manuals for the	<b>literature:</b> programs.						
Course languag Slovak and Eng	Course language: Slovak and English						
Notes:							
Course assessment Total number of assessed students: 64							
А	В	С	D	E	FX		
81.25	10.94	3.13	4.69	0.0	0.0		
Provides: doc. 1	RNDr. Ivan Poto	čňák, PhD.	·	·			
Date of last mo	dification: 25.03	3.2020					
Approved:							

University: P. J. Ša	afárik Univers	ity in Košice					
Faculty: Faculty o	f Science						
Course ID: ÚCHV KCH/14	Course ID: ÚCHV/ Course name: Coordination Chemistry KCH/14						
Course type, scop Course type: Recommended co Per week: Per st Course method:	e and the met ourse-load (h cudy period: present	thod: ours):					
Number of ECTS	credits: 4						
Recommended ser	mester/trimes	ster of the cours	e:				
Course level: II.							
Prerequisities: ÚC	CHV/KCH1/00	),ÚCHV/VES/03					
Conditions for cou	urse completi	on:					
Learning outcome	es:						
Brief outline of th	e course:						
Recommended lite	erature:						
Course language:							
Notes:							
Course assessmen Total number of as	t ssessed studen	ts: 32					
A	В	С	D	E	FX		
68.75	25.0	3.13	0.0	3.13	0.0		
Provides:							
Date of last modif	ication: 03.05	5.2015					
Approved:							

University. 1. J	. Šafárik Univer	sity in Košice						
Faculty: Facult	y of Science							
Course ID: ÚC KCH1/00	HV/ Course name: Coordination Chemistry							
Course type, so Course type: 1 Recommende Per week: 2 / Course metho	ope and the me Lecture / Practic d course-load (I 1 Per study per d: present	ethod: e nours): iod: 28 / 14						
Number of EC	TS credits: 5							
Recommended	semester/trime	ster of the cours	e: 1.					
Course level: I								
Prerequisities:								
<b>Conditions for</b>	course complet	ion:						
The student ac properties of c compounds.	juires knowledg oordination con	e on the coordin pounds as well	nation compoun as about the ch	ds, preparation, emical bonding	isomerism and in coordination			
Definition and numbers. Isom coordination co	nomenclature of erism, preparatio mpounds.	coordination con on and stability of	npounds. Centra f coordination c	l atom and ligand ompounds, chem	ds, coordination ical bonding in			
Recommended	literature:							
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance	A. Keiter, R. L Introduction to	ry, Wiley-VCH, V . Keiter: Inorganio O Coordination Ch	c Chemistry, Ha emistry, Wiley,	per Collins, New 2010.	York, 1993.			
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance Course languag	A. Keiter, R. L Introduction to	ry, Wiley-VCH, V . Keiter: Inorganie o Coordination Ch	c Chemistry, Ha eemistry, Wiley,	per Collins, New 2010.	York, 1993.			
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance Course languag Notes:	A. Keiter, R. L Introduction to	ry, Wiley-VCH, V . Keiter: Inorganio O Coordination Ch	c Chemistry, Ha	per Collins, New 2010.	York, 1993.			
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance Course languag Notes: Course assessm Total number o	A. Keiter, R. L in Introduction to ge: Introduction to Introduction to Intr	ry, Wiley-VCH, V Keiter: Inorganio o Coordination Ch	c Chemistry, Ha	per Collins, New 2010.	York, 1993.			
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance Course languag Notes: Course assessm Total number o A	A. Keiter, R. L in Introduction to ge: Introduction to ge: Introduction to B	ry, Wiley-VCH, V Keiter: Inorganio o Coordination Ch nts: 108	D	per Collins, New 2010.	York, 1993.			
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance Course languag Notes: Course assessm Total number o A 55.56	A. Keiter, R. L in the introduction to introduction to ge: nent f assessed studen B 17.59	ry, Wiley-VCH, V . Keiter: Inorganic o Coordination Ch nts: 108 C 12.96	D 7.41	E 6.48	York, 1993. FX 0.0			
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance <b>Course languag</b> <b>Notes:</b> <b>Course assessm</b> Total number o A 55.56 <b>Provides:</b> prof.	A. Keiter, R. L in troduction to ge: Tent f assessed studen B 17.59 RNDr. Juraj Čen	ry, Wiley-VCH, V . Keiter: Inorganic o Coordination Ch nts: 108 C 12.96 mák, DrSc., doc. I	D 7.41 RNDr. Juraj Kuc	per Collins, New 2010. E 6.48 hár, PhD.	York, 1993. FX 0.0			
J. Ribas: Coord J. C. Huheey, E G. A. Lawrance <b>Course languag</b> <b>Notes:</b> <b>Course assessm</b> Total number o A 55.56 <b>Provides:</b> prof. <b>Date of last mo</b>	A. Keiter, R. L in troduction to ge: nent f assessed studen B 17.59 RNDr. Juraj Čen dification: 03.0	ry, Wiley-VCH, V . Keiter: Inorganic o Coordination Ch nts: 108 C 12.96 mák, DrSc., doc. I 5.2015	D 7.41 RNDr. Juraj Kuc	per Collins, New 2010. E 6.48 hár, PhD.	York, 1993. FX 0.0			

University: P. J	. Šafárik Univer	sity in Košice						
Faculty: Facult	y of Science							
Course ID: ÚC DPO/14	Course ID: ÚCHV/ Course name: Diploma Thesis and its Defence DPO/14							
Course type, sc Course type: Recommended Per week: Per Course metho	cope and the mo d course-load ( r study period: d: present	ethod: hours):						
Number of EC	IS credits: 20							
Recommended	semester/trime	ester of the cours	e:					
Course level: II	•							
Prerequisities:								
Conditions for	course comple	ion:						
Learning outco	omes:							
Brief outline of	the course:							
Recommended	literature:							
Course languag	ge:							
Notes:								
<b>Course assessm</b> Total number of	nent f assessed stude	nts: 167						
А	В	C	D	Е	FX			
68.26	68.26         22.75         5.99         1.8         1.2         0.0							
Provides:				·				
Date of last modification: 03.05.2015								
Approved:								

University: P. J	. Šafárik Univers	ity in Košice					
Faculty: Facult	y of Science						
Course ID: KF/ DF2p/03	Course na	Course name: History of Philosophy 2 (General Introduction)					
Course type, sc Course type: I Recommended Per week: 2 / 2 Course metho	ope and the met Lecture / Practice d course-load (h l Per study peri d: present	thod: ours): od: 28 / 14					
Number of EC	<b>FS credits:</b> 4						
Recommended	semester/trimes	ster of the cours	e:				
Course level: I.	, II						
Prerequisities:							
<b>Conditions for</b>	course completi	on:					
Learning outco	omes:						
Brief outline of	the course:						
Recommended	literature:						
Course languag	ge:						
Notes:							
Course assessm Total number of	ent f assessed studen	ts: 742					
А	В	С	D	Е	FX		
60.78	13.88	12.67	8.63	3.37	0.67		
<b>Provides:</b> Doc. Stojka, PhD.	PhDr. Peter Nezi	ník, CSc., PhDr. ]	Katarína Mayero	vá, PhD., doc. M	gr. Róbert		
Date of last mo	dification: 25.03	3.2020					
Approved:							

University: P. J.	Šafárik Univers	ity in Košice					
Faculty: Faculty	of Science						
<b>Course ID:</b> ÚCH HGS/15	HV/ Course name: Host-Guest and Supramolecular Systems						
Course type, sco Course type: Le Recommended Per week: 1 / 1 Course method	pe and the met ecture / Practice course-load (h Per study perio : present	thod: ours): od: 14 / 14					
Number of ECT	S credits: 3		1				
Course level: II	emester/trimes	ster of the course	2:1.				
Prerequisities.							
Conditions for co	ourse completi	on:					
Learning outcon	nes:						
Clathate, inclusio thiourea, Hofmar cryptates, possib and importance c	on compound, in type clathates ilities of their p of weak interact	supramolecular s s and its analogs, ' practical use. From ions in supramole	ystems. Water Werner-type cla n molecular to ccular chemistr	clathates, clathra athtaes, calixarend supramolecular y, crystal enginee	ates of urea and es, crown-ethers, chemistry, types ering.		
Recommended li Beer P.D., Gale F 2003.	<b>iterature:</b> P.A., Smith D.K	.: Supramolecula	r Chemistry, O	xford University	Press, Oxford,		
Course language	2:						
Notes:							
<b>Course assessme</b> Total number of a	ent assessed studen	ts: 12					
Α	В	С	D	Е	FX		
83.33	8.33	8.33	0.0	0.0	0.0		
<b>Provides:</b> RNDr.	Miroslava Mat	iková Maľarová,	PhD.				
Date of last mod	ification: 03.05	5.2015					
Approved:							

University: P. J.	. Šafárik Univers	ity in Košice					
Faculty: Faculty	y of Science						
Course ID: KF/ IH2/03	Course name: Idea Humanitas 2 (General Introduction)						
Course type, sc Course type: F Recommended Per week: 2 Po Course metho	ope and the met Practice I course-load (h er study period: d: present	thod: ours): 28					
Number of EC	<b>FS credits:</b> 2						
Recommended	semester/trimes	ster of the cours	e: 3.				
Course level: II							
Prerequisities:							
Conditions for	course completi	ion:					
Learning outco	mes:						
Brief outline of	the course:						
Recommended	literature:						
Course languag	ge:						
Notes:							
Course assessm Total number of	ent f assessed studen	ts: 10					
А	В	С	D	E	FX		
90.0	10.0	0.0	0.0	0.0	0.0		
Provides: Doc.	PhDr. Peter Nezi	ník, CSc.			1		
Date of last mo	dification: 12.02	2.2021					
Approved:							

University: P. J.	Šafári	ik Universi	ty in Košice					
Faculty: Faculty	of Sc	ience						
Course ID: ÚCH AKO/15	Course ID: ÚCHV/ Course name: Inorganic Polymers, Clusters and Organometallics							
Course type, sco Course type: L Recommended Per week: 2 / 1 Course method	ope an ecture cours Per s l: pres	nd the met / Practice se-load (ho tudy perio sent	hod: ours): od: 28 / 14					
Number of ECT	S cre	dits: 5						
<b>Recommended</b>	semes	ter/trimes	ter of the cour	<b>:se:</b> 2., 4.				
Course level: II.								
Prerequisities:								
Conditions for <b>c</b>	ourse	completio	on:					
Learning outco	mes:							
Definition and c glasses, BN, bon Boranes and het cyanocomplexes Cluster compoun Organometallic <b>Recommended</b> Ray, N.H.: Inorg Haiduc I., Zucke Gupta, B.D., Eli Hyderabad (Indi	lassific rate gla erobon s. nds, m compc literat ganic F erman as, A a), 20	cation of in asses. Quar ranes, poly netal-metal bunds, bond <b>cure:</b> Polymers, <i>A</i> J.J.: Basic J.: Basic O 10.	organic polym rtz and silicate roxovanadium bonding in clu dings M-C, typ Academic Pres Organometalli rganometallic	ers. Linear polym glasses. Crystalli compounds. Hete sters, intersticial a os of ligands, prep s, New York, 1978 c Chemistry, W. d Chemistry, CRC H	ers S, Se, Te, (SN) ne silicates and al ro and isopolyani atoms. aratin and their pr 8. le Gruyter, Berlin, Press, Taylor and I	)x. Chalkogenic luminosilicates. ions. Polymeric ropereties. , N.Y. 1985. Francis group,		
Chandrasekhar, Archer, R.D.: In Greenwood, N.N	Hyderabad (India), 2010. Chandrasekhar, V.: Inorganic and Organometallic Polymers, Springer, Berlin, 2005. Archer, R.D.: Inorganic and Organometallic Polymers, Wiley, New York, 2001. Greenwood, N.N., Earnshaw, A.: Chemie prvku I a II, Informatorium, Praha, 1993							
Course languag	e:							
Notes:								
Course assessm Total number of	ent assess	sed student	s: 13					
А		В	С	D	E	FX		
30.77	1	5.38	0.0	38.46	15.38	0.0		
Provides: RNDr	. Miro	slava Mati	ková Maľarov	á, PhD.				
Date of last mod	Date of last modification: 03.05.2015							
Approved:								

University: P. J.	. Šafárik Univers	ity in Košice			
Faculty: Faculty	y of Science				
Course ID: ÚC MAG/03	HV/ Course na	ame: Magnetoche	emistry		
Course type, sc Course type: I Recommended Per week: 2 / 1 Course metho	ope and the met Lecture / Practice d course-load (h l Per study peri d: present	thod: c ours): od: 28 / 14			
Number of EC	<b>TS credits:</b> 5				
Recommended	semester/trimes	ster of the cours	e: 3.		
Course level: II	•				
Prerequisities:					
<b>Conditions for</b> exam	course completi	on:			
Introduction to correlations bet methods used in and EPR, since of material espe	the basic interactive ween the structure of the analysis of the study of mage the study at low terms the study at low terms and the study at low terms at low terms and the study at low terms at low	tions in the electric re and magnetic thermodynamic properties y pperatures.	on subsystem of properties. Stud data (specific he vield an importat	f insulators, demo ents will learn the eat, susceptibility, nt information abo	onstration of the e basic standard magnetization) out the structure
Brief outline of Bohr model of field. Specific I the paramagnetic at paramagnetic dimen of exchange com	the course: atom. Hydroger heat, susceptibili ts. Atom in the toms in the crysta . Long-range and upling. Exchange	a atom. Paramagi ty, magnetizatior crystal field. Sp al field. Exchange d short- range ord e anisotropy. Heis	netic and diama and electron p bin Hamiltonian e and dipole inte er. Low-dimens senber, Ising and	gnetic atoms. At aramagnetic reso . Thermodynami raction. Heisenbe ional magnets. Sp l XY model.	om in magnetic nance (EPR) in cs and EPR of org Hamiltonian. patial anisotropy
Recommended 1. R.L. Carlin, A metal compoun 2. A.P.P. Lever:	<b>literature:</b> A.J. Duyneveldt: ds. New York, in Inorganic electr	Magnetic proper c. Springer Verla onic spectroscopy	ties of transitior g, 1977. y, Elsevier, Ams	terdam, 1987.	
Course languag	ge:				
Notes:					
Course assessm Total number of	ent f assessed studen	its: 27			
А	В	С	D	Е	FX
40.74	25.93	18.52	14.81	0.0	0.0
Provides: doc. 1	RNDr. Alžbeta C	rendáčová, DrSc	•	L	<u>.</u>
Date of last mo	dification: 15.06	5.2021			

Approved:

University: P. J. Šafárik University in Košice
Faculty: Faculty of Science
Course ID: ÚCHV/ Course name: Mechanisms of Inorganic Reactions MAB/15
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: two written tests
<b>Learning outcomes:</b> Basic knowledges about inorganic reaction mechanisms and its application, mainly in some new technological processes.
Brief outline of the course: Introduction of inorganic reaction mechanisms. Relationship between mechanism and structure of reactants. Classification of reaction mechanism. Kinetic of reactions and mechanism. Inclusion compounds, intercalates. Mechanism of photochemical reactions, photochromical reactions and its application. Electrochromism, electrochromic materials and its application. Photovoltaic systems. Homogeneous and heterogeneous catalysis mechanism. Mechanisms of reactions of coordination and biocoordination compounds.
<ul> <li>Recommended literature:</li> <ol> <li>Housecroft C.E., Sharpe A.G.: Inorganic Chemistry. Pearson Education Limited, Harlow 2005.</li> <li>Shriver D. F., Atkins P. W., Overton T. L., Rourke J.P., Weller M.T., Armstrong F.A.: Inorganic Chemistry. Oxford University Press, Oxford 2006.</li> <li>Tobe M.L.: Inorganic Chemistry-Reaction Mechanism in Inorganic Chemistry. vol.9.Butterworths, London 1974.</li> </ol></ul>
Course language:
Notes:
Course assessment Total number of assessed students: 18
A B C D E FX
61.11 11.11 22.22 5.56 0.0 0.0
Provides: doc. RNDr. Zuzana Vargová, Ph.D.
Date of last modification: 03.05.2015

Approved:

University: P I	Šafárik Univers	ity in Košice			
Faculty. Faculty	v of Science				
Course ID: ÚC FMCH/04	HV/ Course na	me: Medicinal c	chemistry		
Course type, sc Course type: I Recommended Per week: 3 / 1 Course metho	ope and the met Lecture / Practice d course-load (h l Per study perio d: present	thod: ours): od: 42 / 14			
Number of EC	<b>FS credits:</b> 6				
Recommended	semester/trimes	ster of the cours	<b>e:</b> 1.		
Course level: II	•				
Prerequisities:					
<b>Conditions for</b> Two tests at sen	<b>course completi</b> ninars, Written ex	<b>on:</b> xam			
Explanation of of structure-acti chemical and p the present state or antitumor dru	basic principles i ivity relationship hysico-chemical e in the field of s ugs.	n the research an s including space properties influe selected importan	d development o structure and chi encing biological at groups of drugs	f chemical drugs irality and their co activity. Gaining s, such as antibac	, understanding onsequences on g knowledge of cterial, antiviral
Brief outline of Introduction, cl generation, drug of central, per compounds, ant	<b>the course:</b> assification of dr g chirality, search ipheral and veg titussives and exp	rugs, factors infl for new drugs, s getative nervous pectorants, disinf	uencing design a tructure-activity i system, antibac ectants.	nd activity of dru relationships, che eterial, antitumor	ugs of the third motherapeutics r and antiviral
Recommended 1. Medicinal Ch Chemistry, Tho 2. Advances in 3. Gareth T.: M	<b>literature:</b> nemistry: Princip mas Graham Hor Drug Discovery edicinal Chemist	les and Practice, use, Cambridge, Techniques: Har ry: An introducti	King F. D., Ed., 7 1994. vey A. L., Ed., W on. John Willey a	The Royal Societ 7iley & Sons, Chi & Sons, 2000.	ty of chester, 1998.
<b>Course languag</b> Slovak	ge:				
Notes:					
Course assessm Total number of	<b>ent</b> f assessed studen	ts: 114			
А	В	С	D	Е	FX
58.77	20.18	14.91	3.51	1.75	0.88
Provides: RND	r. Mariana Budov	vská, PhD.			
Date of last mo	dification: 24.01	.2020			

Approved:
University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	cience					
<b>Course ID:</b> ÚCHV/ JCH1/04	Course name: Nuclear Chemistry					
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 1 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 14 esent					
Number of ECTS cr	edits: 5					
Recommended seme	ster/trimester of the course:					
Course level: I., II.						
Prerequisities:						
Conditions for cours	e completion:					

Practical exercise.

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:

<b>Course assessment</b> Total number of assessed students: 53							
A B C D E FX							
43.4	26.42	16.98	7.55	3.77	1.89		
<b>Provides:</b> RNDr. Andrea Morovská Turoňová, PhD., RNDr. František Kaľavský, doc. RNDr. Andrea Straková Fedorková, PhD.							
Date of last modification: 12.05.2021							
Approved:							

University: P. J.	Šafárik Univers	ity in Košice						
Faculty: Faculty	of Science							
Course ID: ÚCI OS/03	Course ID: ÚCHV/ Course name: Organic synthesis OS/03							
Course type, sco Course type: L Recommended Per week: 2 / 1 Course method	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14							
Number of ECT	<b>FS credits:</b> 5							
Recommended	semester/trime	ster of the cours	e:					
Course level: II.								
Prerequisities:								
Conditions for of Midterm exam. Presentation of a Final written ex	c <b>ourse complet</b> i a multistep syntl am.	ion: nesis.						
<b>Learning outco</b> The aim is to b compounds, the	mes: become familiar ir combination a	with the most nd application in	important methors the synthesis of	ods for the synth	esis of organic les.			
Brief outline of Retrosynthetic backbone using bonds. Synthesi molecules, nitro complex molecu	the course: analysis of orga organometallic of s of cyclic mole ogen derivatives. ales and natural	anic compounds compounds and en cules. Synthesis of Protecting group products.	and synthesis nolates. Reaction of halogenderiva ps and special sy	planning. Buildir is resulting in crea tives, oxygen con ynthetic technique	ng of a carbon tion of multiple ataining organic es. Synthesis of			
<b>Recommended</b> Carruthers W., C University Press Hanson, J. R.: C	<b>literature:</b> Coldham I.: Mod 5, 2005 Organic Synthetic	lern Methods of ( c Methods, The F	Organic Synthes Royal Society of	is, Fourth Edition Chemistry 2002.	, Cambridge			
Course languag	je:			_				
Notes:								
Course assessment Total number of assessed students: 169								
A	В	С	D	E	FX			
53.85	53.85 29.59 11.24 2.96 2.37 0.0							
Provides: RND	: Ján Elečko, Ph	D.						
Date of last mod	dification: 05.02	2.2021						
Approved:								
L								

University: P. J. Šafá	rik University in Košice	2		
Faculty: Faculty of S	cience			
<b>Course ID:</b> ÚCHV/ FAK1a/07	Course name: Pharma	acology I		
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 28 esent			
Number of ECTS cr	edits: 4			
Recommended seme	ster/trimester of the co	ourse: 1.		
Course level: II.				
Prerequisities: ÚCH	V/FMCH/04			
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of asses	ssed students: 12			
	abs	n		
100.0 0.0				
Provides: prof. MVD	r. Ján Mojžiš, DrSc.			
Date of last modifica	tion: 03.05.2015			
Approved:				

University: P. J.	Šafárik Univers	ity in Košice			
Faculty: Faculty	of Science	-			
Course ID: ÚCH FAK1b/07	V/ Course na	me: Pharmacolo	gy II		
Course type, sco Course type: Lo Recommended Per week: 2 / 2 Course method	pe and the met ecture / Practice course-load (h Per study peri- : present	thod: ours): od: 28 / 28			
Number of ECT	S credits: 6				
Recommended s	emester/trimes	ster of the cours	e: 4.		
Course level: II.					
Prerequisities: Ú	CHV/FAK1a/0	7			
Conditions for c	ourse completi	on:			
Learning outcon	nes:				
Brief outline of t	he course:				
Recommended li	iterature:				
Course language	2:				
Notes:					
Course assessme Total number of	ent assessed studen	ts: 9			
A	В	С	D	Е	FX
0.0	11.11	33.33	11.11	44.44	0.0
Provides: prof. N	IVDr. Ján Mojž	iš, DrSc.		<u> </u>	
Date of last mod	ification: 03.05	5.2015			
Approved:	,				

		COUR	SE INFORN	AATION LI	ETTER		
University:	P. J. Šafári	k University in	n Košice				
Faculty: Fa	culty of Sc	ience					
<b>Course ID:</b> ADP/03	ÚCHV/	Course name:	Porous mate	erials and the	eir applicatio	ns	
Course type Course type Recomment Per week: Course model	e, scope an pe: Lecture nded cours 2 / 1 Per s ethod: pres	d the method / Practice se-load (hours tudy period: 2 sent	: 9): 28 / 14				
Number of	ECTS cree	dits: 5					
Recommen	ded semes	ter/trimester	of the cours	e: 2.			
Course leve	el: I., II., III	[.					
Prerequisit	ies:						
<b>Conditions</b> Written test	for course in the mid	completion: dle and the end	d of the seme	ester.			
Learning of To make the investigation area and po	utcomes: e acquainta n. To gen u re size of d	ince of various up the students lifferent types	types of advised types of advised types of advised types of a straight the metric of porous matrix and the straight types of porous matrix and the straight types of a	vanced poro thods used i aterials.	us solids and n characteris	basic methoration of spec	ods for their cific surface
Brief outlin Terminolog Methodolog area and po advanced m	e of the co y and pri gy of adsor prosity. Ino naterials) ar	urse: ncipal terms ption at the gas rganic materia nd phenomeno	associated s-solid interf ls (active ca n of adsorpti	with powde ace, liquid-s rbon, metal on. Applicat	ers, porous olid interface oxides, zeol ion in the inc	solids and e. Assessmen ites, clay mi dustry and ev	adsorption nt of surface inerals, new veryday life
Recommen 1. F. Rouqu press, Lond 2. S. J. Greg UK, 1982. 3. V. Zeleňa	ded literat erol, J. Rou lon, UK, 19 gg, K.S.W. ák: Adsorpt	<b>ure:</b> uquerol, K. Sir 999 Sing: Adsorpt tion and porosi	ng: Adsorptio	on by powde area and por ubstances, ir	ers and porou rosity, Acade nternal study	s solids, Aca mic Press, L text, PF UP.	ademic ondon,, JŠ, 2007.
Course lang	guage:						
Notes:							
Course asso Total numb	essment er of assess	sed students: 8	8				
А	В	C	D	Е	FX	N	Р
77.27	10.23	2.27	0.0	0.0	0.0	0.0	10.23
Provides: p	rof. RNDr.	Vladimír Zele	ňák, DrSc.		1	<u>.                                    </u>	<u>.</u>
Date of last	modificat	ion: 03.05.201	.5				

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 the continuous assessment during the semester: Active work (maximum 5 points, 2 absences are allowed). Preparation, presentation and discussion on a selected topic - max. 15 points. Written examination (maximum 30 points). Conditions for admission to the exam: min. 25 points. Conditions for the final assessment: Exam: written form (max. 50 points, min. 25 points) Conditions for successful completion of the course: participation in lessons, fulfillment of assignments and at least 66 points from the overall evaluation. Detailed information in the electronic bulletin board of the course in AIS2. The teaching of the subject will be realized by a combined method.
Learning outcomes: The student will understand the basic concepts and theories of health psychology, can explain salutogenic factors as well as the consequences of risk behavior related to health. He is able to apply the knowledge especially in the field of prevention of burnout syndrome and support of mental health in the work of a teacher.
Brief outline of the course:1 Introduction to health psychology2 Psychoimmunology3 Personality factors and health4 Social support as a protective factor in relation to health5 Subjective well-being6 Stress and stressful situations and ways to manage them7 Burnout syndrome8 Health-promoting behavior, mental hygiene9 Health risk behavior10 School as an important factor of health
Recommended literature: Křivohlavý, J.: Psychologie zdraví. Portál, Praha 2001.

Křivohlavý, J.: Psychologie nemoci. Grada, Praha, 2002.

Křivohlavý, J.: Psychologie moudrosti a dobrého života. Grada, Praha, 2009.

Kebza, V.: Psychosociální determinanty zdraví. Academia, Praha 2005.

Kahneman, D., Diener, E., Schwarz, N.(Eds), Well-Being. The Foundations of Hedonic

Psychology. New York, Russell Sage Foundation, 2003.

Kaplan, R. M.: Zdravie a správanie človeka. SPN, Bratislava 1996.

Sarafino, E. P.: Health Psychology. Biopsychosocial interactions. John Wiley and sons 1994.

Baštecký, J., Šavlík, J., Šimek, J. 1993. Psychosomatická medicína. Praha: Grada

Tress, W., Krusse, J., Ott, J.: Základní psychosomatická péče. Portál, Praha 2008.

### Course language:

slovak

### Notes:

### **Course assessment**

Total number of assessed students: 226

А	В	С	D	Е	FX
19.47	25.22	25.66	13.27	15.93	0.44

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

Date of last modification: 07.07.2021

University: P. J. Šafári	ik University in Košice
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Faculty: Faculty of Science

**Course ID:** ÚCHV/ **Course name:** Quantum Chemistry KOC1/01

Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours):

Per week: 3 / 1 Per study period: 42 / 14

Course method: present

Number of ECTS credits: 5

Recommended semester/trimester of the course: 1.

Course level: II.

Prerequisities:

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

Activity within practice will be evaluated. Two written tests will be realized in 7-th and 14-th week, resp. during the term of the course.

The examination will consist of written and verbal test. Continuous evaluation will be also taken into account.

#### Learning outcomes:

Students will intensify their knowledge in the field of valence-bond based on molecular orbital theory (MO) and self-reliant perform basic quantum chemical calculations (molecular geometry optimization, transition states, vibrational analysis, etc.).

#### Brief outline of the course:

Development of valence-bond theory. Time-independent Schrodinger equation. Basic approximations in molecular orbital valence-bond theory. Variant methods of calculation in the framework of molecular orbital valence-bond theory. Chemical reactivity. Potential energy hypersurfaces of molecules. Reaction coordinate. Calculation of the absolute and relative equilibrium and rate constants, resp. in gas phase. Solvatation energy calculation.

#### **Recommended literature:**

1. Jensen F.: Introduction to Computational Chemistry, Wiley, 2000.

- 2. Leach A. R.: Molecular Modelling, Addison Wesley Longman Ltd. 1998.
- 3. Náray-Szabó G., Surján P. R., Ángyán J. G.: Applied Quantum

Chemistry, Akadémia Kiadó, Budapest, 1987.

#### **Course language:**

slovak language and english language

#### Notes:

#### Course assessment

Total number of assessed students: 32

А	В	С	D	Е	FX
81.25	15.63	3.13	0.0	0.0	0.0

Provides: doc. RNDr. Ladislav Janovec, PhD.

Date of last modification: 03.05.2015

University: P. J. Šafá	rik University in Košice						
Faculty: Faculty of S	Science						
Course ID: ÚTVŠ/ ÚTVŠ/CM/13	Course name: Seaside Aer	robic Exercise					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 36s Course method: combined, present							
Number of ECTS cr	edits: 2						
Recommended seme	ester/trimester of the cours	e:					
Course level: I., II.	-						
Prerequisities:							
<b>Conditions for cours</b> Conditions for cours Attendance	se completion: e completion:						
Learning outcomes: Students will be pro- conditions actively a Students will acquire the aim to improve the	ovided an overview of pos and their skills in work and e practical experience in org he stay and to create positive	sibilities how to spend leisure time in seaside l communication with clients will be improved. anising the cultural and art-oriented events, with e experiences for visitors.					
<b>Brief outline of the o</b> Brief outline of the o I. Basics of seaside a 2. Morning exercises 3. Pilates and its app 4. Exercises for the s 5. Yoga basics 6. Sport as a part of I 7. Application of pro (children, young peo 8. Application of sea	course: ourse: aerobics lication in seaside conditions pine eisure time jects of productive spending ple, elderly) iside cultural and art-oriented	s of leisure time for different age and social groups d activities in leisure time					
Recommended literature:							
Course language:							
Notes:							
<b>Course assessment</b> Total number of asse	essed students: 41						
	abs	n					
	12.2	87.8					

Provides: Mgr. Agata Horbacz, PhD.

Date of last modification: 15.03.2019

University: P. J.	Šafáı	rik Univers	ity in Košice					
Faculty: Faculty	y of Se	cience						
Course ID: ÚC VKA/04	Course ID: ÚCHV/ Course name: Selected Topics in Inorganic Chemistry VKA/04							
Course type, sc Course type: I Recommended Per week: 2 / 1 Course metho	ope an Lectur I cour I Per s d: pre	nd the met e / Practice cse-load (he study perio	hod: ours): od: 28 / 14					
Number of EC	ГS cre	edits: 5						
Recommended	seme	ster/trimes	ter of the course	e: 3.				
Course level: II	•							
Prerequisities:								
Conditions for	cours	e completi	on:					
<b>Learning outco</b> To make the acc	<b>mes:</b> quaint	ance of act	ual status of resea	arch in inorganic	chemistry.			
Cu-Zn heterobin Biological and ligands. Pentacoordinate Structure, spect Hydrothermal s Materials on the	ed Cop ral and ynthese basis	ic compound cochemica oper(II) con d thermal p sis in inorga s of inclusio	nds: preparation, l properties of s npounds: a trigor roperties of cyan anic chemistry. on compounds, th	structure and pro- some zinc komp nal bipyramid or oargentates.	operties. olex compounds a tetragonal pyra operties and appli	with bioactive mid? ication.		
<ul> <li>Recommended literature:</li> <li>1. Greenwood, N.N., Earnshaw, A.: Chemistry of the elements I and II, Pergamon Press N.Y., 1993</li> <li>2. J. E. Huheey, E.A. Keiter, R.L. Keiter: Inorganic Chemistry: Principles of Structure and Reactivity (4th Edition, Addison-Wesley Pub Co. 4th edition, 1997)</li> </ul>								
Course languag	ge:							
Notes:								
Course assessment Total number of assessed students: 230								
А		В	С	D	Е	FX		
44.35 27.83 16.52 6.96 4.35 0.0								
Provides: RNDr. Martin Vavra, PhD., prof. RNDr. Juraj Černák, DrSc., doc. RNDr. Zuzana Vargová, Ph.D., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Juraj Kuchár, PhD., RNDr. Miroslava Matiková Maľarová, PhD.								
Date of last mo	difica	tion: 03.05	.2015					

University: P. J. Šafá	University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science								
Course ID: ÚCHV/ SP1/14	ourse ID: ÚCHV/ Course name: Semestral Project I P1/14							
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present								
Number of ECTS cr	edits: 4							
Recommended seme	ster/trimester of the cours	<b>e:</b> 1.						
Course level: II.								
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: 174							
	abs	n						
	99.43	0.57						
Provides: RNDr. Rastislav Serbin, PhD., prof. RNDr. Mária Kožurková, CSc., prof. Dr. Yaroslav Bazel', DrSc., prof. RNDr. Jozef Gonda, DrSc., doc. RNDr. Ján Imrich, CSc., doc. RNDr. Miroslava Martinková, PhD., doc. RNDr. Erik Sedlák, DrSc., RNDr. Nataša Tomášková, PhD., doc. RNDr. Viktor Víglaský, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD., RNDr. Jana Šandrejová, PhD., doc. RNDr. Ivan Potočňák, PhD., RNDr. Marián Fabián, CSc., doc. RNDr. Miroslav Almáši, PhD., RNDr. Miroslava Matiková Maľarová, PhD., doc. RNDr. Zuzana Vargová, Ph.D., RNDr. Martin Vavra, PhD., prof. RNDr. Juraj Černák, DrSc., doc. RNDr. Juraj Kuchár, PhD., prof. RNDr. Vladimír Zeleňák, DrSc.								
Date of last modifica	ntion: 03.05.2015							
Approved:								

University: P. J. Šafá	rik University in Košice							
Faculty: Faculty of S	cience							
Course ID: ÚCHV/ SP2/14	Course ID: ÚCHV/ Course name: Semestral Project II SP2/14							
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent							
Number of ECTS cr	edits: 6							
Recommended seme	ster/trimester of the cours	e: 3.						
Course level: II.								
Prerequisities:								
Conditions for cours	se 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: 125							
	abs	n						
	100.0	0.0						
Provides: RNDr. Ras Andruch, DSc., prof. Sedlák, DrSc., doc. R PhD., RNDr. Monika PhD., prof. RNDr. Joz Zeleňák, DrSc., doc. I Katarína Reiffová, Ph RNDr. Danica Sabolo RNDr. Jana Šandrejov Maľarová, PhD., doc. Juraj Kuchár, PhD.	tislav Serbin, PhD., prof. RN Ing. Marián Antalík, DrSc., NDr. Miroslava Martinková Tvrdoňová, PhD., doc. RNI zef Gonda, DrSc., doc. Ing. RNDr. Ján Imrich, CSc., doc D., RNDr. Nataša Tomáško ová, PhD., RNDr. Rastislav vá, PhD., doc. RNDr. Mirosl RNDr. Zuzana Vargová, Ph	NDr. Mária Kožurková, CSc., prof. Mgr. Vasil prof. Dr. Yaroslav Bazel', DrSc., doc. RNDr. Erik , PhD., doc. RNDr. Andrea Straková Fedorková, Dr. Mária Ganajová, CSc., RNDr. Martin Vavra, Viera Vojteková, PhD., prof. RNDr. Vladimír 2. RNDr. Ivan Potočňák, PhD., doc. RNDr. vá, PhD., doc. RNDr. Viktor Víglaský, PhD., Varhač, PhD., doc. RNDr. Peter Pristaš, CSc., lav Almáši, PhD., RNDr. Miroslava Matiková a.D., prof. RNDr. Juraj Černák, DrSc., doc. RNDr.						

University: P. J. Šafárik University in Košice								
Faculty: Faculty	Faculty: Faculty of Science							
Course ID: ÚC NPC1a/00	HV/ Course na	ame: Seminar fro	om Advanced Ino	rganic Chemistr	У			
Course type, sc Course type: I Recommended Per week: 1 Pe Course metho	ope and the me Practice I course-load (h er study period d: present	thod: iours): : 14						
Number of EC	<b>FS credits:</b> 1							
Recommended	semester/trime	ster of the cours	e:					
<b>Course level:</b> II								
Prerequisities:								
Conditions for	course complet	ion:						
<b>Learning outco</b> To make the acc	mes: quaintance of act	tual status of rese	arch in inorganic	chemistry.				
<b>Brief outline of</b> Selected topics publications. El	the course: from inorganic aboration of the	and coordination chemical information	chemistry. Stud	y of the scientif	ic literature and			
Recommended Actual scientific chemistry. Shriver D.F. Sh	<b>literature:</b> c papers and lite river, Atkins P.W	rature concerning	the actual resear mistry. Oxford U	ch topics in inor niversity Press, (	ganic Oxford 1999.			
Course languag	ge:							
Notes:								
Course assessm Total number of	ent f assessed studer	nts: 66						
А	В	С	D	Е	FX			
78.79	15.15	6.06	0.0	0.0	0.0			
<b>Provides:</b> RND Zeleňák, DrSc., Miroslav Almáš PhD.	r. Martin Vavra, doc. RNDr. Ivar i, PhD., RNDr. M	PhD., prof. RND Potočňák, PhD., Miroslava Matiko	r. Juraj Černák, I doc. RNDr. Zuz vá Maľarová, Ph	DrSc., prof. RND ana Vargová, Ph D., doc. RNDr. J	ur. Vladimír .D., doc. RNDr. Juraj Kuchár,			
Date of last mo	dification: 03.03	5.2015						
Approved:								

University: P. I. Šafárik University in Košice								
Faculty · Faculty of Science								
Course ID: ÚC NPC2/02	HV/	Course na	me: Seminar fro	m Advanced In	organic Chemistr	у		
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 1 Per study period: 14 Course method: present								
Number of EC	TS cre	dits: 1						
Recommended	semes	ter/trimes	ster of the cours	e:				
Course level: II								
Prerequisities:								
Conditions for	course	e completi	on:					
Learning outco	omes: quainta	ance of act	ual status of resea	arch in inorgani	c chemistry.			
Brief outline of Selected topics publications. El	from i aborat	ourse: inorganic a ion of the o	and coordination chemical information	chemistry. Stud	dy of the scientif	ic literature and		
Recommended Actual scientific chemistry. Shriver D. F. Sh	literat c paper	t <b>ure:</b> rs and liter Atkins P. V	ature concerning W.: Inorganic Cho	the actual resea	urch topics in inor University Press	rganic , Oxford 1999.		
Course languag	ge:							
Notes:								
Course assessm Total number of	Course assessment Total number of assessed students: 73							
А		В	С	D	Е	FX		
89.04	(	6.85	4.11	0.0	0.0	0.0		
<b>Provides:</b> RNDr. Martin Vavra, PhD., prof. RNDr. Juraj Černák, DrSc., doc. RNDr. Zuzana Vargová, Ph.D., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Juraj Kuchár, PhD., doc. RNDr. Miroslav Almáši, PhD., RNDr. Miroslava Matiková Maľarová, PhD.								
Date of last mo	dificat	tion: 03.05	5.2015					
Approved:								

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
Course ID: ÚCI SDP/03	HV/ Course n	ame: 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 EC	<b>FS credits:</b> 2						
Recommended	semester/trime	ster of the cours	<b>e:</b> 4.				
Course level: II	•						
Prerequisities:							
Conditions for Consultations, c Assessment of s	course complet liscussions and j student's work d	ion: presentations. uring the semeste	r by supervisor.				
<b>Learning outco</b> Teach the stude participate in sc	mes: ent to prepare pr ientific discussion	esentation of his on and formal rec	own results, crit uirements of wri	tical acceptation tten diploma wo	of information, rk.		
Brief outline of Presentation of writing of scien	the course: literature infor tific text.	mation and own	experimental re-	sults, scientific	discussions and		
Recommended According to th	literature: e field of diplon	na work.					
Course languag	ge:						
Notes:				<u>.</u>			
Course assessm Total number of	ent f assessed studer	nts: 329					
Α	В	C	D	E	FX		
95.74	2.13	1.22	0.3	0.3	0.3		
<b>Provides:</b> RNDr. Martin Vavra, PhD., doc. RNDr. Andrea Straková Fedorková, PhD., prof. RNDr. Mária Kožurková, CSc., prof. RNDr. Juraj Černák, DrSc., prof. Dr. Yaroslav Bazel', DrSc., prof. RNDr. Andrej Oriňak, PhD., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Zuzana Vargová, Ph.D., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Katarína Reiffová, PhD., prof. Mgr. Vasil' Andruch, DSc., prof. RNDr. Renáta Oriňaková, DrSc., RNDr. Miroslava Matiková Maľarová, PhD., doc. RNDr. Juraj Kuchár, PhD., RNDr. Andrea Morovská Turoňová, PhD., RNDr. Lívia Kocúrová, PhD., doc. RNDr. Miroslav Almáši, PhD.							
Date of last mo	dification: 20.0	9.2017					
Approved:							

University: P. J. Šafá	rik Univers	ity in Košice				
Faculty: Faculty of S	cience					
<b>Course ID:</b> KPPaPZ/SPVKE/07	Course ID: Course name: Social-Psychological Training of Coping with Critical Life Situations					
Course type, scope a Course type: Practic Recommended course Per week: 2 Per stu Course method: pre	nd the met ce rse-load (h dy period: esent	hod: ours): 28				
Number of ECTS cr	edits: 2					
Recommended seme	ster/trimes	ter of the course: 2.				
Course level: II.						
Prerequisities:						
Conditions for cours	e completi	on:				
Learning outcomes:						
Brief outline of the c	ourse:					
<b>Recommended litera</b>	iture:					
Course language:						
Notes:						
Course assessment Total number of asses	ssed studen	ts: 126				
abs		n	Z			
97.62	97.62 2.38 0.0					
Provides: Mgr. Ondrej Kalina, PhD.						
Date of last modification: 11.02.2021						
Approved:						

University: P. J. Šafárik University in Košice									
Faculty: Faculty of Science									
Course ID: ÚC CTF1/00	Course ID: ÚCHV/ Course name: Solid State Chemistry CTF1/00								
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 EC	ГS cre	edits: 5							
Recommended	semes	ster/trimes	ster of the course	<b>e:</b> 1., 3.					
Course level: II									
Prerequisities:									
Conditions for	cours	e completi	on:						
Learning outco	mes:								
significance of a Historical deve General fundan crystals, diffusi surface oxidation defects on the r quenching, dopt	solid s lopme nentals on in on, rea reactiv	state and re ent of solid s and impo solids, No ction betwo vity of solid radiation, r	action in the solid state chemistry ortant properties of on-catalysed reac een solids, chemic ds. Generation of nechanical activa	d state. and its signific of solids: ideal ctions involving cal dissolution. defects by van tion and low te	cance for technolo and real crystals, g solids: thermal The influence of r rious methods of t mperature decomp	ogical progress. deformation of decomposition, non-equilibrium reatment: rapid position.			
Recommended 1. West A. R.: E 2. Tkáčová, K.:	litera Basic S Mech	<b>ture:</b> Solid State anical Act	Chemistry, J. Wil	ley, Chichester, ls. Elsevier, Ar	1999. nsterdam, 1989.				
Course languag	ge:								
Notes:									
Course assessment Total number of assessed students: 72									
A		В	С	D	Е	FX			
55.56	55.56 27.78 13.89 1.39 1.39 0.0								
Provides: RND	Provides: RNDr. Martin Vavra, PhD.								
Date of last mo	difica	tion: 03.05	5.2015						
Approved:									

University: P. J. Šafárik University in Košice								
Faculty: Faculty	Faculty: Faculty of Science							
Course ID: ÚCH NPC3/02	Course ID: ÚCHV/ Course name: Special Seminar NPC3/02							
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 s	semester/trimes	ster of the cours	e:					
Course level: II.				_				
Prerequisities:								
Conditions for c	ourse completi	on:						
Learning outcor	nes:							
Brief outline of t	the course:							
Recommended I	iterature:							
Course language	e:							
Notes:								
Course assessme Total number of	e <b>nt</b> assessed studen	ts: 30						
Α	В	С	D	E	FX			
80.0	16.67	0.0	3.33	0.0	0.0			
<b>Provides:</b> RNDr. Martin Vavra, PhD., prof. RNDr. Juraj Černák, DrSc., doc. RNDr. Zuzana Vargová, Ph.D., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Juraj Kuchár, PhD., doc. RNDr. Miroslav Almáši, PhD., RNDr. Miroslava Matiková Maľarová, PhD.								
Date of last modification:								
Approved:								

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚTVŠ/ TVa/11	Course name: Sports Activities I.
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: cou	nd the method: ce rse-load (hours): dy period: 28 mbined, present
Number of EC15 cr	tents: 2
Recommended seme	ster/trimester of the course: 1.
Course level: 1., 1.11.,	11
Prerequisities:	
<b>Conditions for cours</b> Min. 80% of active p	articipation in classes.
Learning outcomes: Sports activities in all They have a great im enables students to s improve.	their forms prepare university students for their professional and personal life. pact on physical fitness and performance. Specialization in sports activities strengthen their relationship towards the selected sport in which they also
<b>Brief outline of the c</b> Brief outline of the co Within the optional s University provides badminton, body forr indoor football, S-M In the first two seme and particularities of the physical condition, co Last but not least, the means of a special pro-	<b>pourse:</b> ourse: ubject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik for students the following sports activities: aerobics, aikido, basketball, n, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, systems, step aerobics, table tennis, tennis, volleyball and chess. sters of the first level of education students will master basic characteristics individual sports, motor skills, game activities, they will improve level of their oordination abilities, physical performance, and motor performance fitness. e important role of sports activities is to eliminate swimming illiteracy and by ogram of medical physical education to influence and mitigate unfitness.

In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.

### **Recommended literature:**

### **Course language:**

Notes:

Course assessment Total number of assessed students: 12859									
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs		
87.01	0.08	0.0	0.0	0.0	0.04	8.1	4.77		
<b>Provides:</b> Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, PhD., Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Mgr. Patrik Berta, Mgr. Ladislav Kručanica, PhD., Bc. Richard Melichar, Mgr. Petra Tomková, PhD.									
Date of last modification: 13.05.2021									
Approved:									

University:	University: P. J. Šafárik University in Košice									
Faculty: Fa	Faculty: Faculty of Science									
<b>Course ID:</b> TVb/11	ÚTVŠ/	Course name	: Sports Acti	vities II.						
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined, present										
Number of	ECTS cred	lits: 2								
Recommen	ded semest	er/trimester	of the cours	e: 2.						
Course leve	e <b>l:</b> I., I.II., II	[.								
Prerequisit	ies:									
Conditions active partic	for course cipation in c	<b>completion:</b> classes - min.	80%.							
<b>Learning outcomes:</b> Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.										
improve. <b>Brief outline of the course:</b> Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess. In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness. In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.										
Recommended literature:										
Course lang	Course language:									
Notes:										
Course asse Total numb	essment er of assess	ed students: 1	1675							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs			
84.52	0.56	0.02	0.0	0.0	0.05	10.63	4.22			

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

Date of last modification: 13.05.2021

University:	University: P. J. Šafárik University in Košice								
Faculty: Fa	Faculty: Faculty of Science								
<b>Course ID:</b> TVc/11	ÚTVŠ/ C	ourse name	: Sports Acti	vities III.					
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined, present									
Number of	ECTS cred	its: 2							
Recommen	ded semeste	er/trimester	of the cours	<b>e:</b> 3.					
Course leve	el: I., I.II., II.								
Prerequisit	ies:								
<b>Conditions</b> min. 80% c	<b>for course o</b> f active part	<b>completion:</b> icipation in c	lasses						
<b>Learning outcomes:</b> Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.									
improve. <b>Brief outline of the course:</b> Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess. In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness. In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.									
Recommended literature:									
Course lan	Course language:								
Notes:									
Course ass Total numb	essment er of assesse	ed students: 7	873						
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs		
88.8	0.05	0.01	0.0	0.0	0.03	4.08	7.04		

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

Date of last modification: 13.05.2021

University: P. J. Šafárik University in Košice							
Faculty: Faculty of Science							
<b>Course ID:</b> TVd/11	ourse ID: ÚTVŠ/ Course name: Sports Activities IV. Vd/11						
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: combined, present							
Number of	ECTS credi	its: 2					
Recommen	ded semeste	er/trimester	of the cours	<b>e:</b> 4.			
Course leve	e <b>l:</b> I., I.II., II.						
Prerequisit	ies:						
<b>Conditions</b> min. 80% o	<b>for course o</b> f active part	<b>completion:</b> icipation in c	lasses				
<b>Learning outcomes:</b> Sports activities in all their forms prepare university students for their professional and personal life. They have a great impact on physical fitness and performance. Specialization in sports activities enables students to strengthen their relationship towards the selected sport in which they also improve.							
<b>Brief outline of the course:</b> Within the optional subject, the Institute of Physical Education and Sports of Pavol Jozef Šafárik University provides for students the following sports activities: aerobics, aikido, basketball, badminton, body form, bouldering, floorball, yoga, power yoga, pilates, swimming, body-building, indoor football, S-M systems, step aerobics, table tennis, tennis, volleyball and chess. In the first two semesters of the first level of education students will master basic characteristics and particularities of individual sports, motor skills, game activities, they will improve level of their physical condition, coordination abilities, physical performance, and motor performance fitness. Last but not least, the important role of sports activities is to eliminate swimming illiteracy and by means of a special program of medical physical education to influence and mitigate unfitness. In addition to these sports, the Institute offers for those who are interested winter and summer physical education trainings with an attractive program and organises various competitions, either at the premises of the faculty or University or competitions with national or international participation.							
Recommended literature:							
Course language:							
Notes:							
Course assessment Total number of assessed students: 5125							
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
83.14	0.31	0.04	0.0	0.0	0.0	7.75	8.76

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

Date of last modification: 13.05.2021

University: P. J. Š	Safárik Univers	sity in Košice			
Faculty: Faculty of Science					
Course ID: ÚCH SAZ1/15	V/ Course na	Course name: Stereochemistry of Inorganic Compounds			
Course type, scop Course type: Pra Recommended o Per week: 2 Per Course method:	oe and the me actice course-load (h study period: present	thod: ours): 28			
Number of ECTS	S credits: 3				
Recommended se	emester/trime	ster of the course	e: 1., 3.		
Course level: II.					
Prerequisities:					
Conditions for co	ourse completi	ion:			
Learning outcom	Learning outcomes:				
<b>Brief outline of the course:</b> Symmetry, elements of symmetry, point groups, symmetrical properties of orbitals and bonds. Principles of stereochemistry, VSEPR, configuration of molecules, polyhedra, regular and semiregular polyhedra. Valence shells with 4–12 electron pairs, geometry of molecules and periodic system.					
Recommended lin Kepert, D. L.: Inc Kettle, S. F. A.: S	terature: organic Stereoc ymmetry and S	hemistry. Springe Structure. John W	er-Verlag, Berli ïley & Sons, N	in, 1982. Iew York, 1985.	
Course language:					
Notes:					
Course assessment Total number of assessed students: 22					
A	В	C	D	E	FX
59.09 13.64 18.18 9.09 0.0 0.0					
Provides: prof. RNDr. Vladimír Zeleňák, DrSc.					
Date of last modification: 03.05.2015					
Approved:					

<b>University:</b> P. J. Safárik	Cuniversity in Košice
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Faculty: Faculty of Science

**Course ID:** ÚCHV/ **Course name:** Structure Analysis STA1/03

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:**

2 written tests.

30%

The final examination is in a written form. The final mark is based on the results from current and final tests.

#### Learning outcomes:

Students get an overview about the symmetry at the micro- and macrostructure level and about diffraction methods used for the crystal structure determination and they will learn how to use the results of the crystal structure analysis in their own work.

#### Brief outline of the course:

Macrostructure and microstructure symmetry, individual work with space groups. Theoretical basis of the diffraction experiment. Practical aspects of crystal structure solution. Processing the results of structural analysis. Theoretical basis, practical aspects and possibilities of X-ray powder diffraction analysis, its use at work of a chemist.

#### **Recommended literature:**

Massa, W.: Crystal structure determination, 2nd edition. Springer 2004.

Clegg, W. et al.: Crystal structure analysis. Principles and practice. Oxford University Press 2009. Hahn, T.: International tables for crystallography, Vol. A. Kluwer Academic Publishers 2002. Stout, G.H. & Jensen, L.H.: X-ray Structure Determination. Macmillan Publishing Co., Inc. 1968. Klug, H.P. & Alexander, L.E.: X-Ray diffraction procedures for polycrystalline and amorphous materials. John Wiley & Sons, Inc. 1970.

#### **Course language:**

Slovak and English

Notes:

Course assessment Total number of assessed students: 119						
A B C D E FX						
28.57 16.81 26.05 19.33 8.4 0.84						
Provides: doc. RNDr. Ivan Potočňák, PhD.						
Date of last modification: 03.05.2015						
Approved:						

University: P. J. Ša	University: P. J. Šafárik University in Košice				
Faculty: Faculty of	Science				
Course ID: ÚCHV SVKA1/00	Course ID: ÚCHV/ Course name: Students Scientific Conference (Presentation) SVKA1/00				
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 sen	nester/trimes	ster of the cours	e:		
Course level: II.					
Prerequisities:					
Conditions for cou	rse completi	on:			
Learning outcome	s:				
Brief outline of the course:					
Recommended literature:					
Course language:					
Notes:					
Course assessment Total number of assessed students: 17					
A	В	С	D	Е	FX
100.0	0.0	0.0	0.0	0.0	0.0
<b>Provides:</b> prof. RNDr. Juraj Černák, DrSc., prof. RNDr. Vladimír Zeleňák, DrSc., doc. RNDr. Miroslav Almáši, PhD., doc. RNDr. Ivan Potočňák, PhD., RNDr. Miroslava Matiková Maľarová, PhD., doc. RNDr. Zuzana Vargová, Ph.D., doc. RNDr. Juraj Kuchár, PhD., RNDr. Martin Vavra, PhD.					
Date of last modification: 03.05.2015					
Approved:					

University: P. J. Šafá	rik University in Košice			
<b>Faculty:</b> Faculty of S	cience			
Course ID: ÚTVŠ/ Course name: Summer Course-Rafting of TISA River				
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	nd the method: ce rse-load (hours): ly period: 36s esent			
Number of ECTS cr	edits: 2			
Recommended seme	ster/trimester of the course:			
Course level: I., II.				
Prerequisities:				
<b>Conditions for course</b> Conditions for course Attendance Final assessment: Ra	e completion: completion: ft control on the waterway (attended/not attended)			
Learning outcomes: Learning outcomes: Students have knowled	edge of rafts (canoe) and their control on waterway.			
<ul> <li>Brief outline of the c</li> <li>Brief outline of the c</li> <li>Brief outline of the c</li> <li>1. Assessment of diff</li> <li>2. Safety rules for raf</li> <li>3. Setting up a crew</li> <li>4. Practical skills trai</li> <li>5. Canoe lifting and c</li> <li>6. Putting the canoe i</li> <li>7. Getting in the canoe</li> <li>8. Exiting the canoe o</li> <li>9. Taking the canoe o</li> <li>10. Steering</li> <li>a) The pry stroke (on</li> <li>b) The draw stroke</li> <li>11. Capsizing</li> <li>12. Commands</li> </ul>	ourse: ourse: iculty of waterways ting ning using an empty canoe carrying n the water without a shore contact be out of the water fast waterways)			
Recommended litera	iture:			
Course language:				
Notes:				

Course assessment Total number of assessed students: 153							
abs n							
45.75 54.25							
Provides: Mgr. Dávid Kaško, PhD.							
Date of last modification: 18.03.2019							
Approved:							
University: P. J. Šafárik University in Košice							
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Faculty: Faculty of Science							
Course ID: ÚCHV/ SMCH/03Course name: Supramolecular 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: 4							
<b>Recommended semester/trimester of the course:</b> 1., 3.							
Course level: II.							
Prerequisities:							
Conditions for course completion: Presentation of a chosen topic. Final written exam.							
Learning outcomes:							
Brief outline of the course:							
Recommended literature: 1. Lecture handouts can be found at http://lms.upjs.sk/course/view.php?id=385 2. J.W.Steed and J.L.Atwood, Supramolecular chemistry, Wiley : Chichester, 2000. 3. F.Vogtle, Supramolecular chemistry: an introduction, Wiley : Chichester, 1991.							
Course language:							
Notes:							
Course assessment Total number of assessed students: 67							
A B C D E FX							
62.69 22.39 11.94 1.49 1.49 0.0							
Provides: RNDr. Martin Walko, PhD.							
Date of last modification: 03.05.2015							
Approved:							

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚTVŠ/ KP/12	Course name: Survival Course
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: cor	nd the method: ce rse-load (hours): y period: 36s mbined, present
Number of ECTS cro	edits: 2
Recommended seme	ster/trimester of the course:
Course level: I., II.	
Prerequisities:	
<b>Conditions for cours</b> Conditions for course Attendance Final assessment: cor	e completion: completion: ntinuous fulfilment of all tasks within the course
Learning outcomes: Learning outcomes: Students will be fan conditions as they wi and demanding situa course develops team require overcoming o	niliarized with principles of safe stay and movement in extreme natural ll obtain theoretical knowledge and practical skills to solve the extraordinary tions connected with survival and minimization of damage to health. The n work and students will learn how to manage and face the situations that f obstacles.
<ul> <li>Brief outline of the c Brief outline of the co Lectures:</li> <li>1. Principles of behave</li> <li>2. Preparation and leat</li> <li>3. Objective and subjing</li> <li>4. Principles of hygiene</li> <li>Exercises:</li> <li>1. Movement in terration of imp</li> <li>3. Water treatment and</li> </ul>	ourse: burse: viour and safety for movement and stay in unknown mountains adership of tour ective danger in mountains ne and prevention of damage to health in extreme conditions in, orientation and navigation in terrain (compasses, GPS) rovised overnight stay d food preparation.
Recommended litera	ture:
Course language:	
Notes:	

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

University:	University: P. J. Šafárik University in Košice								
Faculty: Fa	culty of S	cience							
<b>Course ID:</b> TA1/03	ÚCHV/	V/ Course name: Thermal Analysis							
Course typ Course typ Recomme Per week: Course mo	e, scope an pe: Lectur nded cour 2 / 1 Per s ethod: pre	nd the method e / Practice se-load (hours study period: 2 sent	: ): 28 / 14						
Number of	ECTS cre	edits: 5							
Recommen	ded seme	ster/trimester	of the cours	e: 2.					
Course leve	el: II., III.								
Prerequisit	ies:								
Conditions	for cours	e completion:							
Goal of the techniques, compounds <b>Brief outlin</b> Introduction thermal an reflectance	course is the use and reactine of the con, experim alysis, the spectrosco	to provide the of thermoanaly on kinetics. <b>Durse:</b> tental thermoar ermomagnetic py). The use of	students wit rtic methods halytical tech techniques, `thermoanaly	h a knowled for charac miques (then thermodilate ytic methods	ge of experiment terization of rmogravimet ometric anal for character	mental thern inorganic a ric analysis, lysis, high rization of ir	noanalytical and organic differential temperature norganic and		
Recommen Wendlandt, Schultze, D Heide, K.: 1 Leipzig, 19	ded litera W. W.: Th D: Differer Dynamiscl 79.	ture: hermal Methods itialthermoanaly he thermische A	s of Analysis yse, VEB De analysenmet	s, 2. vydanie, eutsch Verlag hoden, VEB	, New York, g Wissenscha Deutsch Ver	1985. Iften, Berlin, lag Wissens	, 1969. chaften,		
Course lan	guage:								
Notes:									
Course assessment Total number of assessed students: 67									
А	В	C	D	Е	FX	N	Р		
53.73	19.4	11.94	1.49	1.49	0.0	0.0	11.94		
Provides: prof. RNDr. Vladimír Zeleňák, DrSc.									
Date of last modification: 03.05.2015									
Approved:	Approved:								

University: P. J.	Safárik Univers	ity in Košice							
Faculty: Faculty	Faculty: Faculty of Science								
Course ID: ÚCH VES/03	HV/ Course na	Course name: Vibrational and electronic spectroscopy							
Course type, sco Course type: L Recommended Per week: 2 / 1 Course method	ope and the met ecture / Practice course-load (h Per study perio l: present	thod: ; ours): od: 28 / 14							
Number of ECT	S credits: 5								
Recommended s	semester/trimes	ster of the cours	<b>e:</b> 2.						
Course level: II.									
Prerequisities:									
Conditions for <b>c</b>	course completi	on:							
Learning outco	mes:								
Brief outline of	the course:								
Recommended literature:									
Course languag	e:								
Notes:									
Course assessment Total number of assessed students: 79									
A	В	С	D	Е	FX				
64.56	13.92	10.13	6.33	3.8	1.27				
Provides: doc. R	NDr. Juraj Kucl	hár, PhD.		<u> </u>					
Date of last modification: 03.05.2015									
Approved:									