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University: P. J. Šafárik University in Košice		
Faculty: Faculty of Science		
Course ID: ÚCHV/ DPACH/13Course name: Advanced Inorganic Chemistry		
Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present		
Number of ECTS credits: 9		
Recommended semester/trimester of the course: 1., 3.		

Course level: III.

Prerequisities:

### Conditions for course completion:

To successfully complete the course, the student must demonstrate a sufficient understanding of all aspects of inorganic chemistry of non-metallic and metallic elements. The course is implemented in a combined form; the direct teaching (full-time form, distance form or combined form) contribution represents of 10 % of the total hourly allowance, another 10 to 15% are individual consultations and the emphasis is put on self-study. The condition for successful completion of the course is the elaboration of a presentation on a selected problem of inorganic chemistry using monograph(s) and/ or scientific journal(s) and success in the oral theoretical examination.

The course represents the following student workload: self-study of recommended supplementary literature and direct teaching in the form of consultations - 3 credits, elaboration of a year project on a selected topic - 3 credits, preparation of a ppt presentation from the year project - 2 credits, exam - 1 credit. The final evaluation can be "passed" or "failed".

### Learning outcomes:

After completing the course, the doctoral student will gain a thorough knowledge of the properties of elements and their compounds, knowledges about bonding and structure of elements and compounds, their application possibilities, their environmental aspects, as well as an overview of currently studies problems studied in inorganic chemistry. Theoretical mastery of the content of the course will help him in the successful preparation of the written part of the dissertation exam, subsequent dissertation work, as well as will be helpful in implementation of the scientific part of the doctoral study.

#### Brief outline of the course:

### **Recommended literature:**

N. N. Greenwood, A. Earnshaw: Chemistry of the Elements, 2nd Ed., Elsevier, 1999.

J. C. Huheey, E. A. Keiter, R. L. Keiter: Inorganic Chemistry, Haper Collins, New York, 1993.

F. A. Cotton et al.: Advanced Inorganic Chemistry, 6th Ed., Wiley-Interscience, 1999.

Shriver a Atkins: Inorganic Chemistry, 5th Ed., Oxford University Press, 2006.

M. Weller, J. Rourke, T. Overton, F. Aemstrong, Inorganic Chemsitry, Oxford Unievrsoty Press, 6th Ed., Oxford, UK, 2014.

Monographies and currect papers in scientific journals.

Course language: English language	
<b>Notes:</b> Direct teaching and consultations will be carried or distance education, or using a combination of these specified by the teacher at at the beginning of the s	e methods. The form of teaching will be
Course assessment Total number of assessed students: 23	
N	Р
0.0	100.0
Provides: prof. RNDr. Juraj Černák, DrSc.	
Date of last modification: 21.11.2021	
Approved: prof. RNDr. Juraj Černák, DrSc.	

University: P. J. Šafárik University in Košice		
Faculty: Faculty of Science		
Course ID: ÚCHV/ DBACH/13Course name: Bioinorganic Chemistry		
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present		
Number of ECTS credits: 9		
Recommended semester/trimester of the course:		
Course level: III.		
Prerequisities:		

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

In order for a student to successfully pass the course, he/she must understand sufficient knowledge of the structure, properties and especially the function of biocoordination compounds and biominerals. Moreover, students must be able to explain the relationship between structural, chemical and biological properties of the above compounds and the use of knowledge from bioinorganic chemistry in practice, in medicine, pharmacy, industry and society. Within the subject, students confirm their knowledge by elaborating a annual project using current scientific literature on the assigned topic to the extent defined by the teacher. The credit evaluation of the subject takes into account the following student workload: self-study of recommended supplementary literature and direct teaching in the form of consultations - 3 credits, elaboration of an annual project on a selected topic - 3 credits, preparation of ppt presentations from the annual project - 2 credits, exam from the subject - 1 credit. The subject takes place in a combined form, while direct teaching (full - time, suitable distance form in the online space or in combination) contributes to the total hourly subsidy of 5%, another 45% represent individual consultations and the focus is on self-study (50%). Minimum limit for obtaining the evaluation (passed) is the elaboration of an annual project on a selected topic, preparation of ppt presentations from the annual project and passing the exam from the subject in the assigned scope.

### Learning outcomes:

After the lectures, consultations and self-study, the student will demonstrate adequate mastery of the course content standard, which is defined by the brief content of the course and the recommended literature. He will gain and deepen his knowledge of the structure, importance and function of biometals in living organisms, including biominerals and new biomaterials used in practice

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

Metal complexes in living systems - metalloproteins, metalloenzymes, metallophosphates, Fe-S clusters, their function. Biometals, their transport. Ion channels, ionophores. Biological redox processes. Role of biometals in biophotochemical processes. Biominerals, biomaterials, biosenzors. Bioinorganic chemistry of toxic elements and compounds. Chemistry of elements in medicine, metal complexes in diagnostics. New trends in bioinorganic chemistry.

### **Recommended literature:**

1. D. F. Shriver, P. W. Atkins, T. L. Overton, J. P. Rourke, M. T. Weller, F. A. Amstrong:

Inorganic Chemistry, kapitola 26. Oxford University Press, Oxford 2006.

2. C. E. Housecroft, A.G. Sharpe: Inorganic Chemistry, kapitola 28. Pearson Education, Harlow 2005.

3. C. M. Lukehart, R. A. Scott: Nanomaterials: Inorganic and Bioinorganic Perspectives, kapitoly 1-5. J. Wiley, Chichester 2008.

4. W. Kaim, B. Schvederski: Bioinorganic Chemistry, J. Wiley&Sons, New York 1994.

5. J. C. Dabrowiak: Metals in Medicine. J. Wiley&Sons, Chichester 2009.

Ivano Bertini, Harry B. Gray, Edward I. Stiefel, Joan Selverstone Valentine, Biological Inorganic Chemistry, University Science Books, Melville USA, 2007, ISBN 978-1-938787-96 current review of scientific journals

# Course language:

english

# Notes:

Direct teaching and consultations will be carried out in person or in a suitable form of online distance learning, or using a combination of these methods. The teaching form will be specified by the teacher at the beginning of the semester, or according to the current situation.

### **Course assessment**

Total number of assessed students: 14

Ν	Р	
0.0	100.0	
Provides: prof. RNDr. Zuzana Vargová, Ph.D.		
Date of last modification: 18.11.2021		
Approved: prof. RNDr. Juraj Černák, DrSc.		

University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science			
Course ID: ÚCHV/ Course name: Certified training course COK/22			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:		
Number of ECTS cr	edits: 4		
Recommended seme	ster/trimester of the cours	se:	
Course level: III.			
Prerequisities:			
I conditions for course	e completion.		
Learning outcomes:	fied professional/training co		
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own	fied professional/training contraining contraining contraining contraining contraining contraining contraining units and the scientific labels with the method contraining con	course. consection of scientific apabilities of scientific alogies of making scientific knowledge available. other course participants, develops the abilities of	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own	fied professional/training conjuires up-to-date scientific less himself with the methodo knowledge and skills with e given scientific field.	knowledge, develops the capabilities of scientific logies of making scientific knowledge available.	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the	fied professional/training conjuires up-to-date scientific less himself with the methodor knowledge and skills with e given scientific field.	knowledge, develops the capabilities of scientific logies of making scientific knowledge available.	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the Brief outline of the c	fied professional/training conjuires up-to-date scientific less himself with the methodor knowledge and skills with e given scientific field.	knowledge, develops the capabilities of scientific logies of making scientific knowledge available.	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the Brief outline of the c Recommended litera	fied professional/training conjuires up-to-date scientific less himself with the methodor knowledge and skills with e given scientific field.	knowledge, develops the capabilities of scientific logies of making scientific knowledge available.	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the Brief outline of the c Recommended litera Course language:	ified professional/training conjuires up-to-date scientific less himself with the methodor knowledge and skills with e given scientific field.	knowledge, develops the capabilities of scientific logies of making scientific knowledge available.	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the Brief outline of the c Recommended litera Course language: Notes: Course assessment	ified professional/training conjuires up-to-date scientific less himself with the methodor knowledge and skills with e given scientific field.	knowledge, develops the capabilities of scientific logies of making scientific knowledge available.	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	fied professional/training conjuires up-to-date scientific less himself with the methodo a knowledge and skills with e given scientific field.	knowledge, develops the capabilities of scientific logies of making scientific knowledge available. other course participants, develops the abilities of	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	fied professional/training conjuires up-to-date scientific less himself with the methodo a knowledge and skills with e given scientific field.	n	
Completion of a certi Learning outcomes: The PhD student acq work and familiarize He confronts his own peer discussion in the Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	ified professional/training conjuires up-to-date scientific less himself with the methodo is knowledge and skills with e given scientific field.	n	

University: P. J. Šafárik University in Košice		
Faculty: Faculty of Science		
Course ID: ÚCHV/ DCKOK/13Course name: Chemistry of Coordination, Organometallic and Cluster Compounds		
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: 9		
Recommended semester/trimester of the course:		
Course level: III.		
Prerequisities:		

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

To successfully complete the course, the student have to demonstrate a sufficient understanding of all aspects of coordination chemistry, chemistry of organometallic and cluster compounds. The course is implemented in a combined form, while direct teaching (full-time, suitable distance form in the online space or combined) contributes to the total hourly allowance of 10 %, another 10 to 15 % represent individual consultations and the emphasis is put on self-study. The condition for successful completion of the course is the elaboration of a presentation on a selected problem of the acquired material using scientific books and/or journals and success in the oral theoretical exam. The course represents the following student workload: self-study of recommended supplementary literature and direct teaching in the form of consultations - 3 credits, elaboration of a year project on a selected topic - 3 credits, preparation of a ppt presentation from the year project - 2 credits, exam - 1 credit. The final evaluation can be "passed" or "failed".

#### Learning outcomes:

After completing the course, the doctoral student will gain a general overview of coordination chemistry, chemistry of organometals and clusters as well as he becomes familiar with the latest advances and trends in these areas. Theoretical mastery of the content of the course allows him to succeed in preparing a written part of the dissertation exam and subsequent dissertation thesis, as well as facilitate the implementation of the scientific part of the doctoral study.

### Brief outline of the course:

Coordination compounds, their components: central atoms and ligands, preparation, stereochemistry, isomerism, thermodynamic and kinetic stability and properties of coordination compounds. Bonding in coordination compounds. Methods of study of coordination compounds. Complex compounds with mixed valence states. Current trends in modern coordination chemistry. Organometallic compounds of transition metals, their importance. Transition metal clusters, metal-metal bonding.

#### **Recommended literature:**

J. Ribas: Coordination Chemistry, Wiley-VCH, Weinheim, 2008.

R. H. Crabtree: The Organometallic Chemistry of the Transition Metals, 5th Ed., J. Wiley, Hoboken, 2009.

King, R. B. Transition Metal Cluster Compounds, in Progress in Inorganic Chemistry, Volume 15, (ed. S. J. Lippard), J. Wiley & Sons, Hoboken, 2007.

J. C. Huheey, E. A. Keiter, R. L. Keiter: Inorganic Chemistry, Haper Collins, New York, 1993

### **Course language:**

English language

### Notes:

Direct teaching and consultations will be carried out carried out in person or in a suitable form of online distance learning, or using a combination of these methods. The teaching form will be specified by the teacher at the beginning of the semester, or according to the current situation.

# **Course assessment**

Total number of assessed students: 10

N	Р
0.0	100.0

**Provides:** doc. RNDr. Juraj Kuchár, PhD., prof. RNDr. Juraj Černák, DrSc., RNDr. Miroslava Matiková Maľarová, PhD.

Date of last modification: 21.11.2021

Approved: prof. RNDr. Juraj Černák, DrSc.

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

Faculty: Faculty of Science

Course ID: ÚCHV/	Course name: Chemistry of nanomaterials
DCNM/13	

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: 9

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

### Conditions for course completion:

Successful completion of two written tests. Successful completion of each of the tests is in accordance with the UPJŠ Study Rules conditioned by obtaining at least 51% of the maximum possible points.

Active and mandatory participation in seminars, elaboration of seminar papers. Each student will prepare one seminar paper on a given topic.

#### Learning outcomes:

The doctoral student will gain detailed knowledge of nanochemistry, methods of synthesis of nanomaterials, techniques used in their study and the most important groups of nanomaterials and their properties.

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

The lecture provides a comprehensive view of synthesis methods, characterization of different types of nanomaterials (nanopowders, nanoporous materials, thin films), their unique physicochemical properties and areas of most promising applications (energy, magnetism, biotechnology, catalysis, separation, etc.).

1. Nanochemistry - definition, area of research, nature of bonds in nanoparticles and nanopowders, interactions between nanoparticles.

- 2. New methods of nanomaterials synthesis.
- 3. Unique physical properties of nanomaterials.
- 4. Nanostructured micro- and mesoporous materials.
- 5. Arranged two- and three-dimensional nanocrystals.
- 6. Nanotubes and nanowires.
- 7. Nanoparticles based on metal oxides.
- 8. Semiconductors nanoparticles and their importance.
- 9. Photochemistry of nanomaterials.
- 10. Nanomaterials for energy applications.
- 11. Nanostructured materials for hydrogen storage.
- 12. Nanocatalysis.
- 13. Nanolithography.
- 14. Biological and environmental aspects of nanomaterials.

Recommended literature:		
Course language:		
<b>Notes:</b> The course is standardly realized in full-time form, in distance.	case of necessary circumstances by	
Course assessment Total number of assessed students: 18		
N P		
0.0	100.0	
Provides: prof. RNDr. Vladimír Zeleňák, DrSc.		
Date of last modification: 22.11.2021		
Approved: prof. RNDr. Juraj Černák, DrSc.		

University: P. J. Šafárik University in	Košice			
Faculty: Faculty of Science				
Course ID: ÚCHV/ Course name: ( CZC/22	Citation in the International Scientific Journal			
Course type, scope and the method: Course type: Recommended course-load (hours) Per week: Per study period: Course method: present				
Number of ECTS credits: 4				
Recommended semester/trimester of	the course:			
Course level: III.				
Prerequisities:				
<b>Conditions for course completion:</b> Obtained citation in a foreign scientifi	e journal.			
researched field, based on the ability problem in such a way that generates source demonstrates the competence contribution to scientific knowledge, a	road and very well-founded scientific knowledge in the to formulate research questions, to reflect on a scientific new knowledge. At the same time, a citation in an indexed to communicate new knowledge, which is a significant t the highest expert level			
Brief outline of the course:				
Recommended literature:				
Course language:				
Notes:				
<b>Course assessment</b> Total number of assessed students: 15				
abs n				
100.0 0.0				
Provides:				
Date of last modification: 08.11.2022				
51				

University: P. J. Šafárik University in KošiceFaculty: Faculty of ScienceCourse ID: ÚCHV/ CDC/22Course ID: ÚCHV/ COU/22Course name: Citation in the Local COU/22Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: presentNumber of ECTS credits: 2Recommended semester/trimester of the course:	l Scientific Journal		
Course ID: ÚCHV/ CDC/22Course name: Citation in the Local Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: presentNumber of ECTS credits: 2	l Scientific Journal		
CDC/22 Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present Number of ECTS credits: 2	l Scientific Journal		
Course type: Recommended course-load (hours): Per week: Per study period: Course method: present Number of ECTS credits: 2			
Recommended semester/trimester of the course:			
Course level: III.			
Prerequisities:			
<b>Conditions for course completion:</b> Citation in a national scientific journal			
Learning outcomes: Obtaining a citation demonstrates broad and very well researched field, based on the ability to formulate resear problem in such a way that generates new knowledge. At source demonstrates the competence to communicate re- contribution to scientific knowledge, at the highest expert	arch questions, to reflect on a scientific t the same time, a citation in an indexed new knowledge, which is a significant		
Brief outline of the course:			
Recommended literature:			
Course language:			
Notes:			
Course assessment Total number of assessed students: 0			
abs n			
0.0	0.0		
Provides:			
Date of last modification: 08.11.2022			
Approved: prof. RNDr. Juraj Černák, DrSc.			

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
Course ID: ÚCHV/ CM/22	<b>Course name:</b> Citation in	the Monograph	
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:		
Number of ECTS cr	edits: 8		
Recommended seme	ester/trimester of the cour	se:	
Course level: III.			
Prerequisities:			
Conditions for course Obtained citation reg	se completion: sistered in SCI or Scopus.		
researched field, bas problem in such a wa source demonstrates contribution to scient	demonstrates broad and sed on the ability to formu ay that generates new know the competence to comm tific knowledge, at the high	very well-founded scientific knowledge in the late research questions, to reflect on a scientific wledge. At the same time, a citation in an indexed nunicate new knowledge, which is a significant est expert level.	
Brief outline of the c			
Recommended litera	iture:		
Course language:			
Notes:			
Course assessment Total number of asse	ssed students: 0		
abs n			
0.0 0.0			
	0.0	0.0	
Provides:	0.0		
Provides: Date of last modifica			

University: P. J. Šafárik University in KošiceFaculty: Faculty of ScienceCourse ID: ÚCHV/ Course name: Co-investigator of the a SPAV/22Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: presentNumber of ECTS credits: 5Recommended semester/trimester of the course: Course level: III.Prerequisities:Conditions for course completion: Co-investigator of the applied research projectLearning outcomes:	applied research project			
Course ID: ÚCHV/ SPAV/22       Course name: Co-investigator of the second sec	applied research project			
SPAV/22 Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: Co-investigator of the applied research project	applied research project			
Course type: Recommended course-load (hours): Per week: Per study period: Course method: present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: Co-investigator of the applied research project				
Recommended semester/trimester of the course:         Course level: III.         Prerequisities:         Conditions for course completion:         Co-investigator of the applied research project				
Course level: III. Prerequisities: Conditions for course completion: Co-investigator of the applied research project				
Prerequisities:         Conditions for course completion:         Co-investigator of the applied research project				
<b>Conditions for course completion:</b> Co-investigator of the applied research project				
Co-investigator of the applied research project				
Learning outcomes:				
The PhD student demonstrates the ability to participate in tea to the solution of the project objective of applied research a tasks. By solving an applied research project, he acquires objective according to the established procedure, to follow to own activities with colleagues, to participate in the creation student gains valuable experience from the practical course of research.	nd to take responsibility for assigned the ability to implement the project he project schedule, to coordinate his of applied research outputs. The PhD			
Brief outline of the course:				
Recommended literature:				
Course language:				
Notes:				
Course assessment Total number of assessed students: 0				
abs n				
0.0 0.0				
Provides:				
Date of last modification: 08.11.2022				
Approved: prof. RNDr. Juraj Černák, DrSc.				

THEFT PERSONAL PLANE	rile I Iniversite in V-	
	rik University in Kos	
Faculty: Faculty of S		
Course ID: UCHV/ SDP/22	Course name: Co-v	vorker of a Local Project
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 10	
Recommended seme	ster/trimester of the	course:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Co-investigator of th	-	
		o participate in teamwork, to bring his own contribution and to take responsibility for the assigned tasks. By
The PhD student dem to the solution of th solving the domestic to the established pro colleagues, to partici from the practical co	ne project objective project, he acquires pcedure, to follow the pate in the creation urse of the grant proj	and to take responsibility for the assigned tasks. By the ability to implement the project intention according project schedule, to coordinate his own activities with of outputs. The PhD student gains valuable experience
The PhD student dem to the solution of th solving the domestic to the established pro colleagues, to partici from the practical cor <b>Brief outline of the c</b>	ne project objective project, he acquires pcedure, to follow the pate in the creation urse of the grant proj	and to take responsibility for the assigned tasks. By the ability to implement the project intention according project schedule, to coordinate his own activities with of outputs. The PhD student gains valuable experience
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The PhD student den to the solution of th solving the domestic to the established pro- colleagues, to partici- from the practical co- <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	ne project objective project, he acquires becedure, to follow the pate in the creation urse of the grant proj course: nture: ssed students: 59 abs	n
The PhD student den to the solution of th solving the domestic to the established pro- colleagues, to partici- from the practical co- <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	he project objective project, he acquires becedure, to follow the pate in the creation urse of the grant proj course: nture: ssed students: 59 abs 100.0	n

e mit er steg t i t et suit	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ SMPR/04	Course name: Co-worker	of an International Project
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 15	
Recommended seme	ster/trimester of the cours	se:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b>	-	
Learning outcomes:	by solving a specific task	
Learning outcomes: Active involvement The PhD student der task, adhere to the til experience from the creation of measurab	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages,
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of <b>ourse:</b>	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages,
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c Recommended litera	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of <b>ourse:</b>	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages,
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c Recommended litera Course language:	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of <b>ourse:</b>	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages,
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c Recommended litera Course language: Notes:	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of <b>ourse:</b>	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages,
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c Recommended litera Course language:	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of ourse:	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages,
Learning outcomes: Active involvement The PhD student der task, adhere to the tir experience from the creation of measurab Brief outline of the c Recommended litera Course language: Notes: Course assessment	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of ourse:	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages,
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of ourse: nture:	within a team of international project solvers. rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages, science.
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of ourse: nture: ssed students: 44 abs	n         within a team of international project solvers.         rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages, science.         n
Learning outcomes: Active involvement The PhD student der task, adhere to the tin experience from the creation of measurab Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	by solving a specific task nonstrates the ability to wo me schedule and fulfill the implementation of an inter le outputs, grant funding of <b>ourse:</b> nture: ssed students: 44 abs 100.0	n         within a team of international project solvers.         rk in a team, take responsibility for the assigned project outputs. The PhD student gains personal rnational project, participation in its key stages, science.         n

COURSE INFO	DRMATION LETTER
University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ Course name: Defence ODZP/15	of Doctoral Thesis
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present	
Number of ECTS credits: 30	
Recommended semester/trimester of the co	urse:
Course level: III.	
Prerequisities:	
elements of academic fraud and must meet th Rector's Decision no. 21/2021, which lays do Šafárik University in Košice and its constitue	student's own scientific research. It must not show he criteria of correct research practice defined in the own the rules for assessing plagiarism at Pavel Jozef ents. Fulfillment of the criteria is verified mainly in of the thesis defense. Failure to do so is grounds for
mastery of the theory and professional termine skills and competences in accordance with the as well as the ability to apply them in an ori of study. The student demonstrates the ability formal and ethical aspects. Further details of the 1/2011 on the essential prerequisites of final to in Košice for doctoral studies. The doctoral student demonstrated the ability activity in the field of study of philology in qualification framework and the profile of the	entific work and the student demonstrates extensive ology of the field of study, acquisition of knowledge, declared profile of the graduate of the field of study, ginal way in solving selected problems of the field of independent scientific work in terms of content, ne Dissertation thesis are determined by Directive no. theses and by the Study Rules of Procedure at UPJŠ and readiness for independent scientific and creative n accordance with the expectations of the relevant graduate.
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
<b>Course assessment</b> Total number of assessed students: 76	
Ν	Р
0.0	100.0

**Provides:** 

Date of last modification: 08.11.2022

Approved: prof. RNDr. Juraj Černák, DrSc.

University: P. J. Šafárik University in Košice
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Faculty: Faculty of Science

**Course ID:** ÚCHV/ **Course name:** Diffraction methods of study of inorganic compounds DDM/13

# Course type, scope and the method:

Course type: Lecture / Practice

**Recommended course-load (hours): Per week:** 2 / 4 **Per study period:** 28 / 56

Course method: present

### Number of ECTS credits: 9

### **Recommended semester/trimester of the course:**

Course level: III.

Prerequisities:

# **Conditions for course completion:**

The course is implemented in a combined form, while direct teaching and consultations contribute to the total hourly allowance of 60%, the remaining 40% is the elaboration of an annual project. The conditions for successful completion of the course are:

1. passing two theoretical written tests, of which the PhD. student must obtain at least 51%,

2. passing the oral exam from the studied theory in the form of a debate of at least 51%,

3. elaboration of an annual project, which consists in solving the crystal structure of an unknown substance and processing its results in the form of text, tables and a structural picture, at the level required for publication in a scientific journal.

### Learning outcomes:

PhD. student handles both theoretical and practical aspects of single crystal structural analysis, and powder diffraction. He is able to solve independently crystal structures by a method of single crystal structural analysis and to evaluate powder diffraction records and use the results of these methods in his 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 an inorganic chemist.

### **Recommended literature:**

Massa, W.: Crystal structure determination. Springer 2000.

Clegg, W. et al.: Crystal structure analysis. Principles and practice. Oxford University Press 2009. Stout, G.H. & Jensen, L.H.: X-ray Structure Determination, 2nd Ed.. John Wiley & Sons 1989. Klug, H.P. & Alexander, L.E.: X-Ray diffraction procedures for polycrystalline and amorphous materials. John Wiley & Sons, Inc. 1970.

Hahn, T.: International tables for crystallography, Vol. A. Kluwer Academic Publishers 2002. Manuals for programs.

### **Course language:**

Slovak, English

# Notes:

Teaching is carried out in person or online using the MS Teams tool. The form of teaching is specified by the teacher at the beginning of the semester, updated continuously.

<b>Course assessment</b> Total number of assesse	d students: 21		
Ν	Р	abs	neabs
0.0	66.67	33.33	0.0
Provides: doc. RNDr. Iv	van Potočňák, PhD.		
Date of last modification	on: 18.11.2021		
Approved: prof. RNDr.	Juraj Černák, DrSc.		

University: P. J. Šafá	rik University in Košice				
<b>Faculty:</b> Faculty of S					
	<b>Course name:</b> Elaboration	of reviewer report			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period:				
Number of ECTS cr	edits: 3				
Recommended seme	ster/trimester of the cours	e:			
Course level: III.					
Prerequisities:					
<b>Conditions for cours</b> Elaboration of review	-				
well as knowledge of assess a professional recommend another sciences to his own fr	a wide range of methods and problem and its proposed solution. He applies know feld.	fically based knowledge in the field approaches. Demonstrates the ability solution, as well as to evaluate it ledge and skills from the field of	ty to critically and possibly		
Brief outline of the course:					
Recommended litera	ture:				
Course language:					
Notes:					
<b>Course assessment</b> Total number of asses	ssed students: 1				
abs n					
100.0 0.0					
Provides:	Provides:				
Date of last modifica	tion: 08.11.2022				
Approved: prof. RNI	Dr. Juraj Černák, DrSc.				

University: P. J. Šafárik University in Košice			
Faculty: Faculty of Science			
Course ID: CJP/       Course name: English Language for PhD Students 1         AJD1/07       AJD1/07			
Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: distance, present			
Number of ECTS credits: 2			
Recommended semester/trimester of the course: 1.			
Course level: III.			
Prerequisities:			
<b>Conditions for course completion:</b> Completion of e-course English for PhD Students (lms.upjs.sk), consultations (1-3). Written assignments - Professional/Academic CV, Short Academic Biography.			
Learning outcomes: The development of students' language skills - reading, writing, listening, speaking; improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects; development of pragmatic competence - students acquire skills for effective and purposeful communication, with focus on Academic English and English for specific/professional purposes, level B2.			
<b>Brief outline of the course:</b> Specific aspects of academic and professional English with focus on correct pronunciation, vocabulary development (noun and verb collocations, phrasal verbs, prepositional phrases, word-formation, formal/informal language, etc.), selected aspects of English grammar (prepositions, grammar tenses, passive voice, etc.), academic writing (professional/academic CV, Short Academic Biography).			
Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí – cvičebnica. Košice, Vydavateľstvo ŠafárikPress, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008. Štepánek, L., J. De Haff a kol.: Academic English-Akademická angličtina. Grada Publishing, a.s., 2011. Armer, T.: Cambridge English for Scientists. CUP, 2011. Ims.upjs.sk			
Course language: English, level B2 according to CEFR			
Notes:			

Course assessment Total number of assessed students: 813							
N Ne P Pr abs neabs							
0.0	0.0	43.79	0.0	56.09	0.12		
Provides: Mgr. Zuzana Kolaříková, PhD., Mgr. Ivana Kupková, PhD.							
Date of last modification: 06.09.2024							
Approved: prof	Approved: prof. RNDr. Juraj Černák, DrSc.						

LD2/07         Course type, scope and the method:         Course type: Practice         Recommended course-load (hours):         Per week: 2 Per study period: 28         Course method: distance, present         Number of ECTS credits: 3         Recommended semester/trimester of the course: 2.         Course level: III.         Prerequisities:         Conditions for course completion:         Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS)         Learning outcomes:         The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2.         Brief outline of the course:         Academic communication (self-presentation, presenting at scientific meetings and conferences).         Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list). English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference.         Recommended literature:       Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017.         Kolafi		COURSE INFORMATION LETTER
Course ID: CJP/ (JD2/07         Course name: English Language for PhD Students 2           Course type, scope and the method: Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: distance, present           Yumber of ECTS credits: 3           Recommended semester/trimester of the course: 2.           Course level: III.           Prerequisities:           Conditions for course completion:           Test, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS)           Acarning outcomes:           The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional surposes, level B2.           Strief outline of the course:           Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference.           Recommended literature:           Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017.           Kolafiková, Z., Pe	University: P. J. Šafá	rik University in Košice
LD2/07         Course type, scope and the method:         Course type: Practice         Recommended course-load (hours):         Per week: 2 Per study period: 28         Course method: distance, present         Number of ECTS credits: 3         Recommended semester/trimester of the course: 2.         Course level: III.         Prerequisities:         Conditions for course completion:         Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS)         Learning outcomes:         The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2.         Brief outline of the course:         Academic communication (self-presentation, presenting at scientific meetings and conferences).         Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list). English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference.         Recommended literature:       Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017.         Kolafi	Faculty: Faculty of S	cience
Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: distance, present Wumber of ECTS credits: 3 Recommended semester/trimester of the course: 2. Course level: III. Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS)	Course ID: CJP/ AJD2/07	Course name: English Language for PhD Students 2
Recommended semester/trimester of the course: 2.         Course level: III.         Prerequisities:         Conditions for course completion:         Test, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS)         cearning outcomes:         The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2.         Brief outline of the course:         Academic communication (self-presentation, presenting at scientific meetings and conferences).         Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference.         Recommended literature:         Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017.         Kolafiková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing.         UpJŠ Košice, 2021.         Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing.         Vydavateľstvo ŠafařikPress, 2021.         McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP,	Course type: Practic Recommended cour Per week: 2 Per stu	ce rse-load (hours): idy period: 28
Course level: III. Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) Learning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠaťaříkPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Number of ECTS cr	redits: 3
Prerequisities: Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) Learning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional burposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Recommended seme	ester/trimester of the course: 2.
Conditions for course completion: Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS) .carning outcomes: The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2. Brief outline of the course: Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. Recommended literature: Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Course level: III.	
<ul> <li>Fest, oral exam in accordance with the exam requirements (available at the web-site of the LTC and in MS TEAMS)</li> <li>Fearning outcomes:</li> <li>The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional burposes, level B2.</li> <li>Brief outline of the course:</li> <li>Academic communication (self-presentation, presenting at scientific meetings and conferences).</li> <li>Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference.</li> <li>Recommended literature:</li> <li>Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017.</li> <li>Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica).</li> <li>UPJŠ Košice, 2021.</li> <li>Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing.</li> <li>Vydavateľstvo ŠafárikPress, 2021.</li> <li>McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.</li> </ul>	Prerequisities:	
The development of students' language skills - reading, writing, listening, speaking, improvement of their linguistic competence - students acquire knowledge of selected phonological, lexical and syntactic aspects, development of pragmatic competence - students can efectively use the anguage for a given purpose, with focus on Academic English and English for specific/professional purposes, level B2. <b>Brief outline of the course:</b> Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development (formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. <b>Recommended literature:</b> Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafařikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.		-
Academic communication (self-presentation, presenting at scientific meetings and conferences). Specific aspects of academic and professional English with focus on vocabulary development formality, academic word-list), English grammar (passive voice, nominalisatio), language functions (expressing opinion, cause/effect, presenting arguments, giving examples, describing graphs/charts/schemes, etc.). Cross-language interference. <b>Recommended literature:</b> Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021.	The development of a of their linguistic co and syntactic aspects	students' language skills - reading, writing, listening, speaking, improvement ompetence - students acquire knowledge of selected phonological, lexical s, development of pragmatic competence - students can efectively use the
Moore, J.: Oxford Academic Vocabulary Practice. OUP, 2017. Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Fomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021.	Academic communic Specific aspects of a (formality, academic functions (expressing	cation (self-presentation, presenting at scientific meetings and conferences). academic and professional English with focus on vocabulary development c word-list), English grammar (passive voice, nominalisatio), language g opinion, cause/effect, presenting arguments, giving examples, describing
Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2021. Tomaščíková, S., Rozenfeld, J. Developing Academic English in Speaking and Writing. Vydavateľstvo ŠafárikPress, 2021. McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008.	Recommended litera	ature:
	Kolaříková, Z., Petru UPJŠ Košice, 2021. Tomaščíková, S., Roz Vydavateľstvo Šafári McCarthy, M., O'De Štepánek, L., J. De H 2011.	nňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). zenfeld, J. Developing Academic English in Speaking and Writing. ikPress, 2021. II, F.: Academic Vocabulary in Use. CUP, 2008. Iaff a kol.: Academic English-Akademická angličtina. Grada Publishing, a.s.,
Course language: B2 level according to CEFR	<b>Course language:</b> B2 level according to	o CEFR
	Notes:	

Course assessment Total number of assessed students: 776					
N	Ne	Р	Pr	abs	neabs
0.26	0.0	94.07	1.03	4.51	0.13
Provides: Mgr.	Zuzana Kolaříko	vá, PhD.			•
Date of last modification: 03.02.2025					
Approved: prof	f. RNDr. Juraj Če	ernák, DrSc.			

University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	cience		
Course ID: ÚCHV/ Course name: Individual Study of Scientific Literature SSOL/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period:		
Number of ECTS cro	edits: 2		
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
documents, obtaining preparation of publica	informations for elaboration tion, respectively.	books, monographies, databases and source n of the thesis, for preparation of experiments or	
Brief outline of the contract of the study of	<b>ourse:</b> literature following the sug	gestions of the tutor.	
Recommended litera Books, monographs, Web of Science, SCOPUS, original papers	ture:		
Course language: English language.			
Notes:			
Course assessment Total number of assessed students: 217			
	abs	n	
	100.0	0.0	
Provides:			
Date of last modifica	tion: 05.11.2021		
Approved: prof. RNI	Dr. Juraj Černák, DrSc.		

Christige 1. 5. Bulu	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ ZC/22	Course name: Internationa	al Journal
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 8	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for course Publication accepted	e completion: in a foreign journal as an au	uthor/co-author.
level of ability to ide: He demonstrates the applying them critica an innovative way, as according to the high	ntify, evaluate, and apply co ability to reflect on a scien lly. He demonstrates the con s well as to generate new ori est qualitative and ethical sta	co-author, the PhD student demonstrates a high rrect scientific methods or research methodology. tific problem by using the latest approaches and mpetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment		
Total number of asse	ssed students: 4	1
Total number of asse	abs	n
Total number of asse		n 0.0
Total number of asse Provides:	abs	
	abs 100.0	

	rik University in Koš	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ ZSP1/22	Course name: Inter	rnational Study Stay less than 30 Days
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 5	
Recommended seme	ester/trimester of the	e course:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Completion of a fore		g less than 30 days.
		D student demonstrates the ability to reflect on research
By completing a short problems and work of while being able to go in more than one lang in a group with the air of research, to practio	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pu	D student demonstrates the ability to reflect on research es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and indaries of knowledge and transferring them to other areas ublic. He can competently argue and explain his ideas.
By completing a shor problems and work of while being able to go in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b>	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pur- course:	es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert leve sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other area
By completing a shor problems and work of while being able to go in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b>	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pur- course:	es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert leve sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other area
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pur- course:	es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert leve sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other area
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b> <b>Recommended litera</b>	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pur- course:	es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert leve sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other area
By completing a shorp problems and work of while being able to g in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pushing course:	es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert leve sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other area
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the of Recommended litera Course language: Notes: Course assessment	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pushing course:	es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert leve sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other area
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the of Recommended litera Course language: Notes: Course assessment	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pushing course:	es at an expert level and in an interdisciplinary context ge. He is able to actively communicate at an expert leve sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other area ublic. He can competently argue and explain his ideas.
By completing a shor problems and work of while being able to gi in more than one lang in a group with the air of research, to praction <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pushing course: ature: ssed students: 8 abs	n
By completing a shor problems and work of while being able to g in more than one lang in a group with the air of research, to practic Brief outline of the of Recommended litera Course language: Notes: Course assessment	critically with source enerate new knowled guage. He acts as a res m of pushing the bounce and to the wider pushing course: ature: ssed students: 8 abs 100.0	n

Faculty: Faculty of S	Science	
Course ID: ÚCHV/ ZSP2/22	Course name: Inter	rnational Study Stay more than 30 Days
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ły period:	
Number of ECTS cr	edits: 10	
Recommended seme	ester/trimester of the	e course:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Completion of a fore	1	g more than 30 days.
Learning outcomes:		student demonstrates the shility to reflect on received
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to practio	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce ce and to the wider p	student demonstrates the ability to reflect on research es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas ublic. He can competently argue and explain his ideas.
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b>	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce ce and to the wider p	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to practio	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce ce and to the wider p	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b>	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce ce and to the wider p	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to practic <b>Brief outline of the c</b> <b>Recommended litera</b>	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce ce and to the wider p	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to praction <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce and to the wider procourse: ature:	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to praction <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce and to the wider procourse: ature:	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to praction <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce and to the wider p course: ature:	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas ublic. He can competently argue and explain his ideas.
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to praction <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce ce and to the wider p course: ature: essed students: 7 abs	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas ublic. He can competently argue and explain his ideas.
By completing the s problems and work of while being able to g in more than one lang in a group with the air of research, to praction <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	study stay, the PhD critically with source generate new knowled guage. He acts as a res m of pushing the bounce and to the wider p course: ature: essed students: 7 abs 100.0	es at an expert level and in an interdisciplinary context, lge. He is able to actively communicate at an expert level sponsible independent scientist, works independently and ndaries of knowledge and transferring them to other areas ublic. He can competently argue and explain his ideas.

University: P. J. Šafá	rik University in Košic	e
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ MKZ/22	Course name: Interna	ational conference abroad
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 10	
Recommended seme	ster/trimester of the c	ourse:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Active participation i	e completion: n an international conf	erence abroad.
demonstrates a high research methodolog scientific problem b competence to use en	level of ability to iden y in his scientific field y using the latest app xisting theories and co owledge and communi	onal scientific conference abroad, the phD student tify, evaluate, and apply correct scientific methods or d. He demonstrates the ability to reflect on a specific proaches and applying them critically. Demonstrates ncepts in an innovative way, as well as generate new cate research results to a wider audience by adequate
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 30	
	abs	n
	100.0	0.0
Provides:		
	4:0m 00 11 2022	
Date of last modifica	<b>uon:</b> 08.11.2022	

E	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ Course name: Local Conference DK/04		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 2	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Active participation i	e completion: in the home conference.	
degree of ability to id in his scientific field using the latest approx	entify, evaluate, and apply co l. He demonstrates the abili	conference, the PhD student demonstrates a high prrect scientific methods or research methodology ity to reflect on a specific scientific problem by
_	s in an innovative way, as we	ically. Demonstrates competence in using existing ll as generating new original scientific knowledge audience using adequate means and through the
and communicating	s in an innovative way, as we research results to a wider	ll as generating new original scientific knowledge
and communicating slovak language.	s in an innovative way, as we research results to a wider	ll as generating new original scientific knowledge
and communicating Slovak language. Brief outline of the c	s in an innovative way, as we research results to a wider	ll as generating new original scientific knowledge
and communicating Slovak language. Brief outline of the c Recommended litera	s in an innovative way, as we research results to a wider	ll as generating new original scientific knowledge
and communicating in Slovak language. Brief outline of the c Recommended litera Course language:	s in an innovative way, as we research results to a wider course: nture:	ll as generating new original scientific knowledge
and communicating a Slovak language. Brief outline of the c Recommended litera Course language: Notes: Course assessment	s in an innovative way, as we research results to a wider course: nture:	ll as generating new original scientific knowledge
and communicating in Slovak language. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	s in an innovative way, as we research results to a wider course: nture: ssed students: 134	Il as generating new original scientific knowledge audience using adequate means and through the
and communicating in Slovak language. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	s in an innovative way, as we research results to a wider course: nture: ssed students: 134 abs	n
and communicating in Slovak language. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	s in an innovative way, as we research results to a wider course: nture: ssed students: 134 abs 100.0	n

	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ DKZU/22	Course name: Local Conf	erence with Foreign Participation
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 5	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Active participation i	se completion: in a national conference with	n foreign participation.
	valuate and apply correct so	signific mothed a on negotial mothed ale are in his
latest approaches and and concepts in an i	emonstrates the ability to real applying them critically. Innovative way, as well as	cientific methods or research methodology in his flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and nee by adequate means and through Slovak or a
latest approaches and and concepts in an i communicate researc	emonstrates the ability to rel applying them critically. I innovative way, as well as th results to a wider audier	flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and
latest approaches and and concepts in an i communicate researc foreign language.	emonstrates the ability to rel applying them critically. I innovative way, as well as the results to a wider audien course:	flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and
latest approaches and and concepts in an i communicate researc foreign language. Brief outline of the c	emonstrates the ability to rel applying them critically. I innovative way, as well as the results to a wider audien course:	flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and
latest approaches and and concepts in an i communicate researc foreign language. Brief outline of the c Recommended litera Course language:	emonstrates the ability to rel applying them critically. I innovative way, as well as the results to a wider audien course:	flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and
latest approaches and and concepts in an i communicate researc foreign language. Brief outline of the c Recommended litera Course language:	emonstrates the ability to ref applying them critically. If innovative way, as well as the results to a wider audier course:	flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and
latest approaches and and concepts in an i communicate research foreign language. Brief outline of the co Recommended litera Course language: Notes: Course assessment	emonstrates the ability to ref applying them critically. If innovative way, as well as the results to a wider audier course:	flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and
latest approaches and and concepts in an i communicate research foreign language. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	emonstrates the ability to ref applying them critically. If innovative way, as well as the results to a wider audier course: nture: ssed students: 41	flect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and the by adequate means and through Slovak or a
latest approaches and and concepts in an i communicate research foreign language. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asses	emonstrates the ability to ref applying them critically. If innovative way, as well as the results to a wider audier course: nture: ssed students: 41 abs	hect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and through adequate means and through Slovak or a
latest approaches and and concepts in an i communicate research foreign language. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	emonstrates the ability to ref applying them critically. E innovative way, as well as ch results to a wider audier course: nture: ssed students: 41 abs 100.0	hect on a specific scientific problem by using the Demonstrates competence to use existing theories generate new original scientific knowledge and through adequate means and through Slovak or a

Chiver Sity. 1. 5. Duru	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ DC/22	Course name: Local Journ	al
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period:	
Number of ECTS cr	edits: 6	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Publication accepted	e completion: in a national journal as auth	or/co-author.
level of ability to iden He demonstrates the applying them critica an innovative way, as according to the higher	ability evaluate, and apply con ability to reflect on a scien lly. He demonstrates the con swell as to generate new ori est qualitative and ethical sta	/co-author, the PhD student demonstrates a high rrect scientific methods or research methodology. tific problem by using the latest approaches and mpetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asses	ssed students: 0	
	abs	n
	abs 0.0	n 0.0
Provides:		
	0.0	

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚCHV/ DMAL/13Course name: Magnetochemistry of Inorganic Compounds	
Course type, scope a Course type: Lectur Recommended cou Per week: 3 / 1 Per Course method: pre	re / Practice rse-load (hours): study period: 42 / 14
Number of ECTS cr	edits: 9
Recommended seme	ster/trimester of the course:
Course level: III.	
Prerequisities:	

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

Continuous active acquisition of the subject is required during the course of Magnetochemistry of Inorganic Compounds, which is necessary for independent mastery of individual tasks in self-study and in solving specific homework assignments. During the semester, the student will get a theoretical project based on the study of foreign journal literature (understanding of a specific scientific article and based on it the elaboration and presentation). Another condition for completing the course is active participation in lectures and seminars. In the exercises, the student will get a concrete idea of how the experimental data are analyzed. Subsequently, the student independently analyzes the experimental data of the selected magnetic compound in the frame of two to three home projects and presents the results of the analysis at a joint meeting. Another condition for obtaining credits is successful completion of the exam from the theoretical part in the form of an extensive oral discussion, where the student demonstrates understanding of basic concepts and relationships between them, finding connections and understanding the course as a coherent whole logically built on the basis of gradual incorporation of individual interactions. The minimum threshold for passing the course is successful completion of self-study projects and individual assignments during the semester and mastering the final oral exam by more than 50 percent.

Credit evaluation takes into account the scope of direct teaching (4 credits), self-study of recommended literature and preparation of presentation (2 credits) elaboration of home assignments (2 credits), consultations and evaluation (1 credit)

### Learning outcomes:

After completing the course, the students will gain a basic perspective, which will allow them to sufficiently orient themselves in the current scientific literature focused on quantum magnetism. Based on the acquired theoretical knowledge and practical experience, they will be able to independently study magneto-structural correlations in electrically non-conductive materials and identify their magnetic state, which is important especially for quantum technologies but also for practical applications such as magnetic cooling especially at low temperatures. Based on the acquired knowledge, discussions and the creation of individual projects, they will also learn the basics of critical thinking in this field.

### Brief outline of the course:

Electronic states in hydrogen atom, electronic configuration, term, multiplet. Paramagnetic and diamagnetic atoms. Atom in magnetic field: specific heat, susceptibility, magnetization and electron paramagnetic resonance (EPR). Atom in the crystal field. Freezing of angular momentum. Spin Hamiltonian. Termodynamics and EPR of paramagnetic atoms in the crystal field. Exchange and dipole interaction. Heisenberg Hamiltonian. Magnetic dimer. Long-range and short- range order. Low-dimensional magnets. Spatial anisotropy of exchange coupling. Exchange anisotropy. Heisenberg, Ising and XY model.

#### **Recommended literature:**

R. L. C. Carlin: Magnetochemistry, Springer-Verlag Berlin, Heidelberg, New York, 1986. J-P.Launay, M. Verdaguer, Electrons in Molecules, Oxford 2018.

A. Abragam, B. Bleaney, Electron Paramagnetic Resonance of Transition Ions, Oxford, 2012.

#### **Course language:**

English Language

#### Notes:

The course Magnetochemistry of Inorganic Compounds is realized in the attendance form. In some special cases (as was pandemics of Covid) the teaching is realized online using software MS Teams, which enables to keep the contact with students and to keep the level and quality of the course.

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100.0

#### **Course assessment**

Total number of assessed students: 8

N	
0.0	

Provides: doc. RNDr. Alžbeta Orendáčová, DrSc.

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Date of last modification: 19.11.2021

Approved: prof. RNDr. Juraj Černák, DrSc.

	rik University in Koš	
Faculty: Faculty of S		
<b>Course ID:</b> ÚCHV/ SIG/22	Course name: Mem	ber of the internal project team
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 3	
Recommended seme	ester/trimester of the	course:
Course level: III.		
Prerequisities:		
Conditions for cours Co-worker of project		l grant schamas (VVCS)
Learning outcomes: The PhD student dem	nonstrates the ability t	o participate in teamwork, to bring his own contribution
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project.	
Learning outcomes: The PhD student den to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project.	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project.	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera Course language:	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project.	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera Course language: Notes:	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project.	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera Course language:	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project. course: ature: ssed students: 23	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project. course: ature: ssed students: 23 abs	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project. course: ature: ssed students: 23	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues . The PhD student gains valuable experience from the
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project. course: ature: ssed students: 23 abs	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues . The PhD student gains valuable experience from the 
Learning outcomes: The PhD student dem to the solution of th the internal VVGS g established procedure and participate in the practical course of th Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	nonstrates the ability to ne project objective v grant, he acquires the e, adhere to the project e creation of outputs. e grant project. course: ature: ssed students: 23 abs 100.0	o participate in teamwork, to bring his own contribution within the internal grant system at UPJŠ. By solving ability to implement the project plan according to the t schedule, coordinate his own activities with colleagues . The PhD student gains valuable experience from the 

University: P. J. Šafá	rik University in Koši	ce
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ POVK/22	Course name: Mem	bership in a Conference organizing Committee
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	redits: 3	
Recommended seme	ester/trimester of the	course:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Work in the organizin	se completion: ng committee of the co	onference
Learning outcomes:		of the conformed the DhD student demonstrates the
By working in the c abilities and compete to manage the implen in writing using vario level with various typ decisions.	organizing committee ences to organize a scie mentation in terms of timous technical means as bes of people, if necessa	of the conference, the PhD student demonstrates the entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional ary, correctly recommend solutions or make independent
By working in the or abilities and compete to manage the implem in writing using vario level with various typ	organizing committee ences to organize a scie mentation in terms of timous technical means as bes of people, if necessa	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional
By working in the c abilities and compete to manage the implen in writing using vario level with various typ decisions.	organizing committee ences to organize a scie mentation in terms of timous technical means as bes of people, if necessa	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional
By working in the c abilities and compete to manage the implen in writing using vario level with various typ decisions. Brief outline of the c	organizing committee ences to organize a scie mentation in terms of timous technical means as bes of people, if necessa	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional
By working in the c abilities and compete to manage the implem in writing using vario level with various typ decisions. Brief outline of the c Recommended litera	organizing committee ences to organize a scie mentation in terms of timous technical means as bes of people, if necessa	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional
By working in the c abilities and compete to manage the implem in writing using vario level with various typ decisions. Brief outline of the c Recommended litera Course language:	organizing committee ences to organize a scie mentation in terms of tim ous technical means as bes of people, if necessa course: ature:	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional
By working in the or abilities and competer to manage the implem in writing using varior level with various typ decisions. Brief outline of the or Recommended literat Course language: Notes: Course assessment	organizing committee ences to organize a scie mentation in terms of tim ous technical means as bes of people, if necessa course: ature:	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional
By working in the or abilities and competer to manage the implem in writing using vario level with various typ decisions. Brief outline of the or Recommended litera Course language: Notes: Course assessment Total number of asse	organizing committee ences to organize a scie nentation in terms of the ous technical means as bes of people, if necessa course: ature: ssed students: 6	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional ary, correctly recommend solutions or make independent
By working in the or abilities and competer to manage the implem in writing using vario level with various typ decisions. Brief outline of the or Recommended litera Course language: Notes: Course assessment Total number of asse	erganizing committee ences to organize a scie nentation in terms of the bus technical means as bes of people, if necessa course: ature: ssed students: 6 abs	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional ary, correctly recommend solutions or make independent
By working in the or abilities and competer to manage the implem in writing using vario level with various typ decisions. Brief outline of the or Recommended litera Course language: Notes: Course assessment Total number of asse	erganizing committee ences to organize a scie nentation in terms of the bus technical means as bes of people, if necessa course: ature: ssed students: 6 abs 100.0	entific or professional event independently or in a team, me and content, to communicate effectively verbally and needed, including in a foreign language at a professional ary, correctly recommend solutions or make independent

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ DMIZ/13	Course name: Molecular inclusion compounds	
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 2 Per Course method: pro	re / Practice rse-load (hours): study period: 28 / 28	
Number of ECTS cr	redits: 9	
Recommended seme	ester/trimester of the course:	
Course level: III.		
Prerequisities:		

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

To successfully complete the course, the student must demonstrate an overview of different types of molecular inclusion compounds, their structures and properties. The course is implemented in a combined form; the direct teaching (full-time form, distance form based on MS Teams/Big Blue Button (BBB) application or combined form) contribution represents 10 % of the total hourly allowance, another 15% are individual consultations and the emphasis is put on self-study. The condition for successful completion of the course is the written elaboration of 4 assignments from the area of the subject and the success on the final test (gain of at least 51 % points). The final evaluation can be "passed" or "failed".

#### Learning outcomes:

After completing the course, the doctoral student will gain an overview of different types of inclusion compounds, their structures and properties, interactions in this type of compounds, as well as on the importance of supramolecular chemistry in general. Theoretical mastery of the content of the course will help him in the successful preparation of the written part of the dissertation exam, subsequent dissertation work, as well as will be helpful in implementation of the experimental part of the doctoral study.

#### Brief outline of the course:

Basic terms. Classification of inclusive compounds (host - gest compounds). Types of interactions in inclusion compounds, physicochemical properties. Inclusion of neutral molecules, anion binding, cation binding. Clathrates, clathrates of hydrates, Hoffman-type inclusion compounds, intercalates, zeolites, cyclodextrins, cyclic ethers, cryptands, calixarenes, ionophores. Materials based on inclusion compounds and their use in various fields of industry, agriculture, in the environment, its use as sorbents, carriers of biochemically, pharmaceutically and agrochemically active substances. Supramolecular electrochemistry, photochemical, photochromic cells. Optical materials. Molecular recognition.

#### **Recommended literature:**

- 1. J. W. Steed, J. L. Atwood: Supramolecular Chemistry, J. Wiley, Chichester 2002.
- 2. J. L. Atwood, J. E. Davies: Inclusion compounds, Oxford University Press, Oxford 1984.
- 3. D. Cram, J. M. Cram: Container molecules and their guests, RSC, Cambridge 1994.

4. J. W. Steed, D. R.Turner, K. J. Wallace: Core Concepts in Supramolecular Chemistry and Nanochemistry. Wiley, Chichester 2007.

5. Jacob N. Israelachvili: Intermolecular and Surface Forces. Academic Press, 3rd edition, 2010. ISBN-10: 0123751829, ISBN-10: 0123751829.

6. Brain D. Wagner: Host–Guest Chemistry: Supramolecular Inclusion in Solution. De Gruyter; 1st edition, 2020.

#### **Course language:**

English language

#### Notes:

Direct teaching and consultations will be carried out in person or in a suitable form of online education (MS Teams or Big Blue Button (BBB)), or using a combination of these methods. The form of teaching will be specified by the teacher at at the beginning of the semester, or according to the current situation.

#### **Course assessment**

Total number of assessed students: 9

Ν	Р
0.0	100.0

Provides: doc. RNDr. Miroslav Almáši, PhD., RNDr. Miroslava Matiková Maľarová, PhD.

Date of last modification: 19.11.2021

Approved: prof. RNDr. Juraj Černák, DrSc.

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ MONB/22	Course name: Monograph	
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 20	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Co-author of the mor	-	
evaluate, and apply c to reflect on a scient demonstrates the con as to generate new o qualitative and ethic	orrect scientific methods or ific problem by using the la npetence to use existing the riginal scientific knowledge al standards of the field. T	demonstrates a high level of ability to identify, research methodology. It demonstrates the ability test approaches and applying them critically. He ories and concepts in an innovative way, as well e, which he can publish according to the highest 'he doctoral student demonstrates the ability to estions, to finalize his own ideas.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asses	ssed students: 0	
	abs	n
	0.0	0.0
Provides:		
Provides: Date of last modifica	tion: 08.11.2022	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ MONA/22	Course name: Monograp	h in a renowned publishing house
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 40	
Recommended seme	ster/trimester of the cour	se:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Co-author of a mono	e completion: graph in a renowned publis	hing house.
level of ability to iden He demonstrates the applying them critica in an innovative way publish according to	ntify, evaluate, and apply co ability to reflect on a scien ally. He demonstrates the c y, as well as to generate r the highest qualitative and	ishing house, the PhD student demonstrates a high prrect scientific methods or research methodology. ntific problem by using the latest approaches and competence to use existing theories and concepts new original scientific knowledge, which he can ethical standards of the field. The doctoral student d respond to reviewers' suggestions, to finalize his
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asse	ssed students: 0	
	abs	n
	0.0	0.0
Provides:		
Date of last modifica	tion: 08.11.2022	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ NRZ/22	Course name: Non-Review	ved International or National Proceedings
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 2	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> A publication publish		n or national journal as an author/co-author.
demonstrates the abi methodology. He de approaches and apply and concepts in an in he can publish accord	lity to identify, evaluate, a monstrates the ability to re- ying them critically. He dem novative way, as well as to g rding to the highest qualitat	al journal as an author/co-author, the PhD student nd apply correct scientific methods or research flect on a scientific problem by using the latest onstrates the competence to use existing theories enerate new original scientific knowledge, which ive and ethical standards of the field. The phD on thoughts in a written speech.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 20	
	abs	n
	100.0	0.0
	100.0	
Provides:	100.0	
Provides: Date of last modifica		

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ PVS/04	Course name: Patents, Inv	entions, Software
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period: esent	
Number of ECTS cr	edits: 2	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Patent filed, invention	e completion: n, software product created.	
	ionstrates the ability to creat interdisciplinary scale or in	e an innovative product in a given scientific field, technical practice.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asses	ssed students: 0	
	abs	n
	0.0	0.0
Provides:		
Date of last modifica	tion: 08.11.2022	
Approved: prof. RNI	Dr. Juraj Černák, DrSc.	

University: P. J. Šafărik University in Košice         Faculty: Faculty of Science         Course ID: KPE/ PgVU/17       Course name: Pedagogy for University Teachers         Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: distance, present         Number of ECTS credits: 5         Recommended semester/trimester of the course: Course level: III.         Prerequisities:         Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation         Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge         Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
Course ID: KPE/ PgVU/17       Course name: Pedagogy for University Teachers         Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: distance, present         Number of ECTS credits: 5         Recommended semester/trimester of the course: Course level: III.         Prerequisities:         Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro university-level professional subjects. Identify and specify educational procedures of a uni teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
PgVU/17         Course type, scope and the method:         Course type: Lecture         Recommended course-load (hours):         Per week: Per study period: 28s         Course method: distance, present         Number of ECTS credits: 5         Recommended semester/trimester of the course:         Course level: III.         Prerequisities:         Conditions for course completion:         1. Development of a teaching diary—100%         2. Compulsory active participation and attendance in accordance with the Study Regulation         Learning outcomes:         After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to:         Knowledge         Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: distance, present Number of ECTS credits: 5 Recommended semester/trimester of the course: Course level: III. Prerequisities: Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro- university-level professional subjects. Identify and specify educational procedures of a uni teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
Recommended semester/trimester of the course:         Course level: III.         Prerequisities:         Conditions for course completion:         1. Development of a teaching diary—100%         2. Compulsory active participation and attendance in accordance with the Study Regulation         Learning outcomes:         After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to:         Knowledge         Define and apply basic didactic principles, methods, forms, and tools in the teaching pro-university-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessment	
Course level: III.         Prerequisities:         Conditions for course completion:         1. Development of a teaching diary—100%         2. Compulsory active participation and attendance in accordance with the Study Regulation         Learning outcomes:         After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to:         Knowledge         Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessmination	
Prerequisities:         Conditions for course completion:         1. Development of a teaching diary—100%         2. Compulsory active participation and attendance in accordance with the Study Regulation         Learning outcomes:         After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to:         Knowledge         Define and apply basic didactic principles, methods, forms, and tools in the teaching prouniversity-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessmed to a sessement.	
Conditions for course completion: 1. Development of a teaching diary—100% 2. Compulsory active participation and attendance in accordance with the Study Regulation Learning outcomes: After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro- university-level professional subjects. Identify and specify educational procedures of a uni- teacher aimed at effective teaching management, pedagogical diagnostics, and assessm	
<ol> <li>Development of a teaching diary—100%</li> <li>Compulsory active participation and attendance in accordance with the Study Regulation</li> <li>Learning outcomes:         <ul> <li>After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to:</li> <li>Knowledge</li> <li>Define and apply basic didactic principles, methods, forms, and tools in the teaching pro-university-level professional subjects. Identify and specify educational procedures of a unit teacher aimed at effective teaching management, pedagogical diagnostics, and assessment</li> </ul> </li> </ol>	
After completing the course, the student will acquire knowledge, skills, and competencies, i. be able to: Knowledge Define and apply basic didactic principles, methods, forms, and tools in the teaching pro- university-level professional subjects. Identify and specify educational procedures of a uni- teacher aimed at effective teaching management, pedagogical diagnostics, and assessme	
learning outcomes. Recognize different approaches to pedagogical evaluation and their implement effective educational process at the university level. Skills Implement effective educational methods and techniques into the teaching of professional su tailored to the needs of university students. Conduct pedagogical diagnostics, assess st progress, and apply appropriate evaluation methods to improve learning outcomes. Analy reflect on one's own teaching process, identify areas for improvement, and enhance the te of professional subjects, including the rationalization of the time and content structure of tea Present specific proposals for improving the teaching process, including the use of new techno and innovative pedagogical approaches. Competencies Confidently and effectively manage the teaching of university subjects, applying educ competencies that consider the specifics of higher education. Critically reflect on one pedagogical practice and the learning outcomes of students to improve teaching metho achieve a higher quality of the educational process. Apply innovative solutions to streamli optimize the teaching process, aiming to increase the engagement and success of university streamling outcomes is process.	iss of ersity nt of ct or jects lents e and ching hing

The personality of a university teacher. Teaching styles. Student in university education. Student learning styles. Possibilities of adapting teaching styles and student learning styles. University teacher–student interaction and communication in the teaching process. Pedagogical competencies

of a university teacher. Didactic analysis of the curriculum; teaching materials and textbooks. Forms of university teaching. Methods of university teaching. Verification methods and student assessment. Creation of a didactic test. Designing university teaching process. University teacher self-reflection.

#### **Recommended literature:**

Beránek, J. (2023). Moderní pedagogické metody a přístupy. Praha: Portál.

Fiala, M. (2023). Didaktika a metodika v současné škole. Praha: Grada Publishing.

Kováč, M. (2023). Vzdelávanie v 21. storočí: Inovatívne prístupy a metódy. Nitra: Vydavateľstvo UKF v Nitre.

Koudelka, J. (2023). Moderní didaktika a její aplikace. Praha: Karolinum.

Křížová, M., & Šebová, P. (2023). Vzdělávání učitelů: Teoretické a praktické přístupy. Praha: Triton.

Kučerová, M. (2023). Vzdělávání učitelů a profesionální rozvoj. Praha: Triton.

Mocová, M., & Lázňovská, M. (2023). Pedagogika a jej aplikácie v praxi. Bratislava:

Vydavateľstvo Spolku slovenských pedagogických pracovníkov.

Novák, J., & Pol, M. (2024). Pedagogické výzkumy a inovace ve vzdělávání. Praha: Portál.

Sikora, J. (2022). Didaktika a metodika vzdelávania: Nové výzvy a trendy. Bratislava: Vydavateľstvo Univerzity Komenského v Bratislave.

Škoda, J. (2022). Efektivní výuka: Praktické strategie a metody. Praha: Grada Publishing.

Švec, J. (2023). Didaktika a školní politika: Teorie a praxe. Praha: Grada Publishing.

Vojtová, K. (2024). Diferenciace a inkluze ve vzdělávání. Praha: Wolters Kluwer.

#### **Course language:**

slovak

#### Notes:

<b>Course assessment</b> Total number of assessed student	s: 152	
abs	n	neabs
98.03	0.66	1.32
Provides: doc. PaedDr. Renáta O	rosová, PhD.	
<b>Date of last modification:</b> 14.09	.2024	
Approved: prof. RNDr. Juraj Čen	rnák, DrSc.	

University: P. J. Šafár	ik University in Košice	
Faculty: Faculty of So	cience	
Course ID: ÚCHV/ POPV/22	Course name: Popularisat	ion of science
Course type, scope an Course type: Recommended cour Per week: Per stud Course method: pre	se-load (hours): y period:	
Number of ECTS cre	edits: 5	
Recommended semes	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Active involvement in	e completion: 1 the popularization of scien	ice.
communication, ident professional knowled	tify the target group and ac	lay public, use interactive methods of scientific lapt the communication language to the level of arouse interest and motivate specific target groups wider context of science
Brief outline of the c	ourse:	
Recommended litera	ture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asses	sed students: 37	
	abs	n
	100.0	0.0
Provides:		
Provides: Date of last modifica	tion: 08.11.2022	

Faculty: Faculty of S	science	
Course ID: ÚCHV/ VYS/22	Course name: Prese	ntation in Seminar
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	redits: 5	
Recommended seme	ester/trimester of the	course:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Presentation at the se	-	
Learning outcomes:		
By actively participa evaluate, and apply of demonstrates the abi and applying them cr an innovative way, a research results by ac	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and thro	the PhD student demonstrates the ability to identify, ods or research methodology in his field of study. He cific scientific problem by using the latest approaches competence in using existing theories and concepts in new original scientific knowledge and communicating bugh Slovak or a foreign language
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac <b>Brief outline of the c</b>	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course:	ods or research methodology in his field of study. He cific scientific problem by using the latest approaches competence in using existing theories and concepts in new original scientific knowledge and communicating
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac <b>Brief outline of the o</b> <b>Recommended litera</b>	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course:	ods or research methodology in his field of study. He cific scientific problem by using the latest approaches competence in using existing theories and concepts in new original scientific knowledge and communicating
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac Brief outline of the of Recommended litera Course language:	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course:	ods or research methodology in his field of study. He cific scientific problem by using the latest approaches competence in using existing theories and concepts in new original scientific knowledge and communicating
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac <b>Brief outline of the o</b> <b>Recommended litera</b>	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course:	ods or research methodology in his field of study. He cific scientific problem by using the latest approaches competence in using existing theories and concepts in new original scientific knowledge and communicating
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b>	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course:	ods or research methodology in his field of study. He cific scientific problem by using the latest approaches competence in using existing theories and concepts in new original scientific knowledge and communicating
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course: ature: ssed students: 9	ods or research methodology in his field of study. He cific scientific problem by using the latest approaches competence in using existing theories and concepts in new original scientific knowledge and communicating bugh Slovak or a foreign language
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course: ature: ssed students: 9 abs	n
By actively participa evaluate, and apply of demonstrates the abi and applying them or an innovative way, a research results by ac <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	correct scientific meth lity to reflect on a spe ritically. Demonstrates as well as generating r dequate means and three course: ature: ssed students: 9 abs 100.0	n

Universites DI Č C		
University: P. J. Safa	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ ZRIG/22	Course name: Principal in	nvestigator of an internal grant (VVGS)
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 10	
Recommended seme	ester/trimester of the cours	se:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Principal investigator	se completion: r of an internal grant (VVG	S)
problem within the in their time schedule, i the internal VVGS g established procedure	ternal grant system at UPJŠ measurable outputs and ade grant acquires the ability to	cess a successful application for his own research Acquires skills with the design of research stages, equate distribution of funds. The very solution of implement the project intention according to the eving the set outputs. As a responsible researcher,
of results.	ires competencies in project	t management, its administration, and presentation
-		
of results.	course:	
of results. Brief outline of the c	course:	
of results. Brief outline of the c Recommended litera	course:	
of results. Brief outline of the c Recommended litera Course language:	course:	
of results. Brief outline of the c Recommended litera Course language: Notes: Course assessment	course:	
of results. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	ssed students: 18	management, its administration, and presentation
of results. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	ssed students: 18 abs	n management, its administration, and presentation
of results. Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	ssed students: 18 abs 100.0	n nanagement, its administration, and presentation

	COURSE INFORMATION LETTER
University: P. J. Šafa	árik University in Košice
Faculty: Faculty of S	Science
<b>Course ID:</b> KPPaPZ/PsVU/17	Course name: Psychology for University Lecturers
Course type, scope a Course type: Lectu Recommended cou Per week: Per stud Course method: di	ure urse-load (hours): dy period: 28s
Number of ECTS c	redits: 5
Recommended seme	ester/trimester of the course:
Course level: III.	
Prerequisities:	
Learning outcomes: After completing the summarize and explay motivation psycholo health psychology. The for the professional, to create and implement and develop the conthe application of pherication of the professional of the the second se	atput, its analysis as of the course are listed in the electronic bulletin board of the course. The course, students will gain knowledge that allows them to understand, ain selected psychological knowledge from cognitive psychology, emotion and gy, personality psychology, developmental, social, educational psychology and They will acquire skills to apply the above psychological knowledge necessary competent performance of university teaching practice of doctoral students nent the teaching of a professional topic with applied psychological knowledge mpetences to create and implement teaching of a professional topic with osychological knowledge, as well as to evaluate their performance and the classmates in the form of constructive feedback.
psychology of emotion psychology and hear interactive, experient of independence, act in the teaching processocial and competent student relationship of	ourse is based on selected psychological knowledge of cognitive psychology, ons and motivation, personality psychology, developmental, social, educational alth psychology. Teaching is realized by a combination of lectures with tial methods, discussion, open communication with mutual respect, support tivity and motivation of students. Syllabus: University teacher and his work cess with a focus on: teachers in relation to themselves (cognitive, personal, ncies in the use of methods), in relation to students and as part of the teacher- on the basis of selected areas of cognitive psychology, psychology of emotions elopmental psychology, social psychology, educational psychology and health

psychology with application to the university environment

#### **Recommended literature:**

Alexitch, L. R. (2005). Applying social psychology to education. Social Psychology.–Ed.: Schneider F., Gruman J., Coutts L.–Sage Publications, Inc, 205-228.

Fry, H., Ketteridge, S., & Marshall, S. (2008). A handbook for teaching and learning in higher education: Enhancing academic practice. Routledge.

Mareš, J.: Pedagogická psychologie. Portál, 2013.

Kniha psychologie. Universum, 2014

Čáp, J., Mareš, J.: Psychologie pro učitele. Praha: Portál 2007.

Vágnerová, M.: Školní poradenská psychológie pro pedagogy. Praha: Karolínum 2005.

Cuevas, J. A., Childers, G., & Dawson, B. L. (2023). A rationale for promoting cognitive science in teacher education: Deconstructing prevailing learning myths and advancing research-based practices. Trends in neuroscience and education, 100209.

<b>Course language:</b> slovak		
Notes:		
<b>Course assessment</b> Total number of assessed students: 87	7	
abs	n	neabs
98.85	0.0	1.15
Provides: PhDr. Anna Janovská, PhD	).	
Date of last modification: 09.12.202	4	
Approved: prof. RNDr. Juraj Černák	, DrSc.	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ Q1SA/22	Course name: Q1 journal	as co-author
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period:	
Number of ECTS credits: 30		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Publication accepted	e completion: in a journal of category Q1	as co-author.
degree of ability to id He demonstrates the applying them critica an innovative way, as according to the high	entify, evaluate, and apply co ability to reflect on a scien lly. He demonstrates the con swell as to generate new or est qualitative and ethical sta	co-author, the PhD student demonstrates a high prrect scientific methods or research methodology. tific problem by using the latest approaches and npetence to use existing theories and concepts in ginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates viewers' suggestions, to finalize his own ideas.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 10	
	abs	n
	100.0	0.0
D 'I		
Provides:		
Provides: Date of last modifica	tion: 08.11.2022	

Faculty: Faculty of S			
Faculty. Faculty of S	cience		
Course ID: ÚCHV/ Q11A/22	Course name: Q1 journal	as first or corresponding author	
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:		
Number of ECTS credits: 40			
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
<b>Conditions for cours</b> Publication accepted	-	as first or corresponding author.	
or research methodo		y, evaluate, and apply correct scientific methods	
theories and concepts which he can publisl PhD student demons to finalize his own id	and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically eas	bility to reflect on a scientific problem by using 7. He demonstrates the competence to use existing 1 as to generate new original scientific knowledge, pualitative and ethical standards of the field. The 7 evaluate and respond to reviewers' suggestions,	
theories and concepts which he can publisl PhD student demons to finalize his own id <b>Brief outline of the c</b>	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically eas	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
theories and concepts which he can publisl PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically eas	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically eas	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
theories and concepts which he can publisl PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically eas	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically eas course: ature:	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
theories and concepts which he can publish PhD student demons to finalize his own id Brief outline of the c Recommended litera Course language: Notes: Course assessment	and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically eas course:	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
theories and concepts which he can publish PhD student demons to finalize his own id Brief outline of the c Recommended litera Course language: Notes: Course assessment	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically leas course: ature: ssed students: 11	y. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The y evaluate and respond to reviewers' suggestions,	
theories and concepts which he can publish PhD student demons to finalize his own id Brief outline of the c Recommended litera Course language: Notes: Course assessment	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically eas course: ature: ssed students: 11 abs	n	
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically eas course: ature: ssed students: 11 abs 100.0	n	

	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ Q2SA/22	Course name: Q2 journal	as co-author
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 20	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for course Publication accepted	e completion: in a journal of category Q2	as co-author.
He demonstrates the applying them critica an innovative way, as according to the high	ability to reflect on a scien lly. He demonstrates the con- s well as to generate new ori est qualitative and ethical sta	brrect scientific methods or research methodology. tific problem by using the latest approaches and mpetence to use existing theories and concepts in iginal scientific knowledge, which he can publish undards of the field. The PhD student demonstrates eviewers' suggestions, to finalize his own ideas.
Brief outline of the c		
	ourse:	
Recommended litera		
Recommended litera		
Recommended litera Course language:	iture:	
Recommended litera Course language: Notes: Course assessment	iture:	n
Recommended litera Course language: Notes: Course assessment Total number of asse	ssed students: 7	n 0.0
Recommended litera Course language: Notes: Course assessment Total number of asse	ssed students: 7 abs	
Recommended litera Course language: Notes: Course assessment Total number of asse	ssed students: 7 abs 100.0	

Faculty: Faculty of S		
racuity. racuity of S	cience	
Course ID: ÚCHV/ Q21A/22	Course name: Q2 journal	as first or corresponding author
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	redits: 30	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Publication accepted		as first or corresponding author.
		y, evaluate, and apply correct scientific methods
the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id	and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	bility to reflect on a scientific problem by using 7. He demonstrates the competence to use existing 1 as to generate new original scientific knowledge, qualitative and ethical standards of the field. The 7 evaluate and respond to reviewers' suggestions,
the latest approaches theories and concepts which he can publish PhD student demons	and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically leas.	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b>	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically leas.	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	and applying them critically in an innovative way, as well h according to the highest q trates the ability to critically leas.	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	and applying them critically is in an innovative way, as wel h according to the highest q trates the ability to critically leas. course: ature:	A. He demonstrates the competence to use existing l as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
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the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id Brief outline of the c Recommended litera Course language: Notes: Course assessment	and applying them critically s in an innovative way, as wel h according to the highest q trates the ability to critically leas. course: ature: ssed students: 17 abs	n
the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	and applying them critically s in an innovative way, as well h according to the highest q trates the ability to critically leas. course: ature: ssed students: 17 abs 100.0	n

	-	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ Q3SA/22	Course name: Q3 journal	as co-author
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS credits: 15		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Publication accepted	e completion: in a journal of category Q3	as co-author.
degree of ability to id He demonstrates the applying them critica an innovative way, as according to the high	entify, evaluate, and apply co ability to reflect on a scien lly. He demonstrates the con s well as to generate new ori est qualitative and ethical sta	co-author, the PhD student demonstrates a high prrect scientific methods or research methodology. tific problem by using the latest approaches and mpetence to use existing theories and concepts in iginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates
	y evaluate and respond to re	viewers' suggestions, to finalize his own ideas.
Brief outline of the c	ourse:	
	ourse:	
Brief outline of the c	ourse:	
Brief outline of the c Recommended litera	ourse:	
Brief outline of the c Recommended litera Course language:	ourse: iture:	
Brief outline of the c Recommended litera Course language: Notes: Course assessment	ourse: iture:	
Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	ourse: nture: ssed students: 5	eviewers' suggestions, to finalize his own ideas.
Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	ourse: nture: ssed students: 5 abs	n
Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	ourse: nture: ssed students: 5 abs 100.0	n

	rik University in Košice		
Faculty: Faculty of S	cience		
Course ID: ÚCHV/ Q31A/22	Course name: Q3 journal	as first or corresponding author	
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:		
Number of ECTS credits: 25			
Recommended seme	ester/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
<b>Conditions for cours</b> Publication accepted	1	as first or corresponding author	
		e first or corresponding author, the PhD student <i>y</i> , evaluate, and apply correct scientific methods	
or research methodo the latest approaches theories and concepts which he can publish	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically	bility to reflect on a scientific problem by using the demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The v evaluate and respond to reviewers' suggestions,	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b>	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b>	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas.	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	logy. He demonstrates the a and applying them critically in an innovative way, as wel h according to the highest q trates the ability to critically leas. course: ature: ssed students: 4	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The v evaluate and respond to reviewers' suggestions,	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	logy. He demonstrates the a and applying them critically is in an innovative way, as wel h according to the highest q trates the ability to critically leas. course: ature: ssed students: 4 abs	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The revaluate and respond to reviewers' suggestions,	
or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	logy. He demonstrates the a and applying them critically is in an innovative way, as well h according to the highest q trates the ability to critically leas. course: ature: ssed students: 4 abs 100.0	bility to reflect on a scientific problem by using . He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The revaluate and respond to reviewers' suggestions,	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ Q4SA/22	Course name: Q4 journal	as co-author
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 10	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for course Publication accepted	e completion: in a journal of category Q4	as co-author.
degree of ability to id He demonstrates the applying them critica an innovative way, as according to the high	entify, evaluate, and apply co ability to reflect on a scien Illy. He demonstrates the co s well as to generate new or est qualitative and ethical sta	co-author, the PhD student demonstrates a high prrect scientific methods or research methodology. tific problem by using the latest approaches and mpetence to use existing theories and concepts in iginal scientific knowledge, which he can publish ndards of the field. The PhD student demonstrates eviewers' suggestions, to finalize his own ideas.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 1	
	abs	n
		0.0
	100.0	
Provides:		
Provides: Date of last modifica		

	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ Q41A/22	Course name: Q4 journa	l as first or corresponding author
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS credits: 20		
Recommended seme	ester/trimester of the cou	rse:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Publication accepted		4 as first or corresponding author.
by puonsining in a p	ournal of calegory Q4 as	the first or corresponding author, the PhD student
demonstrates a high or research methodo the latest approaches theories and concepts which he can publish	degree of ability to identi logy. He demonstrates the and applying them critical in an innovative way, as w h according to the highest trates the ability to critical	the first or corresponding author, the PhD student fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The ly evaluate and respond to reviewers' suggestions,
demonstrates a high or research methodo the latest approaches theories and concepts which he can publish PhD student demons	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas.	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
demonstrates a high or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas.	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
demonstrates a high or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b>	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas.	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
demonstrates a high or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas.	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
demonstrates a high or research methodo the latest approaches theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas. course: ature:	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
demonstrates a high or research methodo the latest approaches theories and concepts which he can publisl PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas. course: ature:	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The
demonstrates a high or research methodo the latest approaches theories and concepts which he can publisl PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	degree of ability to identi logy. He demonstrates the and applying them critical in an innovative way, as w h according to the highest trates the ability to critical leas.	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The ly evaluate and respond to reviewers' suggestions,
demonstrates a high or research methodo the latest approaches theories and concepts which he can publisl PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas. <b>course:</b> <b>ature:</b> ssed students: 0 abs	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The ly evaluate and respond to reviewers' suggestions, n
demonstrates a high or research methodo the latest approaches theories and concepts which he can publisl PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	degree of ability to identi logy. He demonstrates the and applying them critical is in an innovative way, as w h according to the highest trates the ability to critical leas. course: ature: ssed students: 0 abs 0.0	fy, evaluate, and apply correct scientific methods ability to reflect on a scientific problem by using ly. He demonstrates the competence to use existing ell as to generate new original scientific knowledge, qualitative and ethical standards of the field. The ly evaluate and respond to reviewers' suggestions,

	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ RZ/22	Course name: Reviewed I	nternational or Local Proceedings
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS credits: 5		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> A publication publish		n or national proceedings as an author/co-author.
demonstrates a high or research methodo	degree of ability to identify logy. He demonstrates the a	hal journal as an author/co-author, the PhD student y, evaluate, and apply correct scientific methods bility to reflect on a scientific problem by using
theories and concepts which he can publish PhD student demons to finalize his own id	in an innovative way, as wel n according to the highest q trates the ability to critically eas	. He demonstrates the competence to use existing l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The r evaluate and respond to reviewers' suggestions,
theories and concepts which he can publish PhD student demons	in an innovative way, as wel n according to the highest q trates the ability to critically eas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b>	in an innovative way, as well n according to the highest q trates the ability to critically eas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	in an innovative way, as well n according to the highest q trates the ability to critically eas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b>	in an innovative way, as well n according to the highest q trates the ability to critically eas	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	in an innovative way, as well n according to the highest q trates the ability to critically eas course: nture:	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	in an innovative way, as well n according to the highest q trates the ability to critically eas course: nture:	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	in an innovative way, as well n according to the highest q trates the ability to critically eas course: nture: ssed students: 87	l as to generate new original scientific knowledge, ualitative and ethical standards of the field. The v evaluate and respond to reviewers' suggestions,
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	in an innovative way, as well n according to the highest q trates the ability to critically eas course: nture: ssed students: 87 abs	as to generate new original scientific knowledge, ualitative and ethical standards of the field. The evaluate and respond to reviewers' suggestions, n
theories and concepts which he can publish PhD student demons to finalize his own id <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	in an innovative way, as well n according to the highest q trates the ability to critically eas course: nture: ssed students: 87 abs 100.0	as to generate new original scientific knowledge, ualitative and ethical standards of the field. The evaluate and respond to reviewers' suggestions, n

University: P. J. Šafái	rik University in Košice	
Faculty: Faculty of So	cience	
Course ID: ÚCHV/ SCI/22	Course name: SCI Citatio	n
Course type, scope an Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): y period:	
Number of ECTS cre	edits: 8	
Recommended semes	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Obtained citation regi	e completion: istered in SCI or Scopus.	
researched field, base problem in such a wa source demonstrates	ed on the ability to formul by that generates new know	very well-founded scientific knowledge in the ate research questions, to reflect on a scientific ledge. At the same time, a citation in an indexed unicate new knowledge, which is a significant est expert level.
Brief outline of the co	ourse:	
<b>Recommended litera</b>	ture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asses	ssed students: 31	
	abs	n
	100.0	0.0
Provides:		
Provides: Date of last modifica	tion: 08.11.2022	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ VPZ/22	Course name: Scientific w	vork after sending to the editorial office
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 5	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
<b>Conditions for cours</b> Scientific work after	<b>be completion:</b> being sent to the editorial of	ffice as an author/co-author.
demonstrates a high or research methodo the latest approaches theories and concepts which he can publish	degree of ability to identify logy. He demonstrates the a and applying them critically in an innovative way, as wel a according to the highest q	fic journal as an author/co-author, the PhD student y, evaluate, and apply correct scientific methods ibility to reflect on a scientific problem by using y. He demonstrates the competence to use existing Il as to generate new original scientific knowledge, pualitative and ethical standards of the field. The e his own ideas in a structured form.
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Course language: Notes:		
0.0	ssed students: 4	
Notes: Course assessment	ssed students: 4 abs	n
Notes: Course assessment Total number of asse		n 0.0
Notes: Course assessment Total number of asse	abs	
Notes: Course assessment Total number of asse	abs 100.0	

University: P. J. Šafá	rik University in Košice
Faculty: Faculty of S	Science
Course ID: ÚCHV/ DSRM/13	Course name: Spectral & Resenance Methods of Study Inorganic Compounds
Course type, scope a Course type: Lectur Recommended cou Per week: 2 / 2 Per Course method: pro	re / Practice rse-load (hours): study period: 28 / 28
Number of ECTS cr	redits: 9
Recommended seme	ester/trimester of the course:
Course level: III.	
Prerequisities:	
knowledge of the sp At the same time, th spectral properties of	se completion: plete the course, the student must prove sufficient after completing the course ectral properties of inorganic, coordination and biocoordination compounds. ney must be able to demonstrate the relationship between the structural and "the above compounds and the use of the subject matter in practice, in medicine, nd society. Within the subject, students confirm their knowledge by elaborating

pharmacy, industry and society. Within the subject, students confirm their knowledge by elaborating a annual project using current scientific literature on the assigned topic to the extent defined by the teacher. The credit evaluation of the subject takes into account the following student workload: self-study of recommended supplementary literature and direct teaching in the form of consultations - 3 credits, elaboration of an annual project on a selected topic - 3 credits, preparation of ppt presentations from the annual project - 2 credits, exam from the subject - 1 credit. The subject takes place in a combined form, while direct teaching (full - time, suitable distance form in the online space or in combination) contributes to the total hourly subsidy of 5%, another 45 % represent individual consultations and the focus is on self-study (50%). Minimum limit for obtaining the evaluation (passed) is the elaboration of an annual project on a selected topic, preparation of ppt presentations from the annual project and passing the exam from the subject in the assigned scope.

#### Learning outcomes:

After the lectures, consultations and self-study, the student will demonstrate adequate mastery of the course content standard, which is defined by the brief content of the course and the recommended literature. To inform the students with the principles, possibilities and use of selected spectroscopic and resonance methods in the characterization of studied substances in inorganic and coordination chemistry.

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

- 1. Symmetry of compounds as a criterion of spectroscopic properties.
- 2. Vector model of atom and spectroscopic terms.
- 3. Electron spectroscopy.
- 4. Vibrational (infrared and Raman) spectroscopy.
- 5. Resonance study methods EPR and Mössbauer spectroscopy.
- 6. Practical application of spectroscopic methods.

7. Combined application of spectroscopic and resonance methods in the study of coordination compounds.

#### **Recommended literature:**

A. B. P. Lever: Inorganic Spektroscopy, 2nd Ed., Elsevier, N.Y. 1984.

R. S. Drago: Physical Method in Chemistry, W.B.Saunders Comp., London 1977.

E. I. Solomon, A.B.P.Lever: Inorganic electronic structure and spectroscopy, John Wiley & Sons, New Jersey, 2006.

K. Nakamoto: Infrared and Raman Spectra of Inorganic and Coordination Compounds, John Wiley & Sons, New Jersey, 2009,

Shriver & Atkins: Inorganic Chemistry, Ed. P. Atkins, Oxford University Press, 2006.

#### **Course language:**

Slovak language, English language.

Notes:

#### Course assessment

Total number of assessed students: 20

Ν

0.0

100.0

Р

Provides: doc. RNDr. Juraj Kuchár, PhD.

**Date of last modification:** 21.11.2021

Approved: prof. RNDr. Juraj Černák, DrSc.

	<b>University:</b>	P.J.	Šafárik	University	in Košice
I	Chiror Sity.	1.0.	Suluin	Omverbicy	

Faculty: Faculty of Science

Course ID: Dek. PF	Course name: Spring School for PhD Students
UPJŠ/JSD/14	

Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 4d

**Course method:** distance, present

Number of ECTS credits: 2

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

Course level: III.

Prerequisities:

**Conditions for course completion:** 

Active participation in the Spring School of PhD students of UPJŠ.

#### Learning outcomes:

By actively participating in the Spring School of PhD Students of UPJŠ, the PhD student demonstrates a high level of ability to process the issues of his dissertation for a multidisciplinary audience with an emphasis on clarifying the motivation, scientific problem, processing methodology and own contribution to the solution of the selected topic. The PhD student demonstrates the ability to professionally discuss various research topics, present his own positions and accept a plurality of opinions. Demonstrates the ability to communicate research results to a wider professional audience with adequate means and through the Slovak language.

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

1. Interdisciplinary lectures from the fields of medicine, natural sciences, law, public affairs, humanities. Lecturers - top foreign or national experts from the mentioned fields.

2. Scientific lectures in sections created within related disciplines. Lecturers - top experts from UPJŠ from the mentioned fields.

3. Scientific contributions of PhD students in sections of related fields.

4. Panel discussions on the issue of PhD studies and current trends in the development of scientific disciplines at UPJŠ.

#### **Recommended literature:**

Proceedings of the Spring School of Doctoral Students.

#### **Course language:**

Notes:

#### **Course assessment**

Total number of assessed students: 203

abs	n
100.0	0.0

Provides: doc. RNDr. Marián Kireš, PhD.

Date of last modification: 08.11.2022

Approved: prof. RNDr. Juraj Černák, DrSc.

<b>.</b>		
University: P. J. Safá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ VPSV/22	Course name: Supervision	n of a Students Scientific Work
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 8	
Recommended seme	ster/trimester of the cours	se:
Course level: III.		
Prerequisities:		
Conditions for cours Supervision of Stude Learning outcomes:	e completion: nt's Scientific Activity	
	nt within the SOČ or ŠV	OČ, the PhD student demonstrates broad and
By guiding a studer scientifically based ki and approaches. Dem solution, as well as to	nowledge in the field of stud onstrates the ability to critic	OČ, the PhD student demonstrates broad and y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and is own field.
By guiding a stude scientifically based ki and approaches. Dem solution, as well as to	nowledge in the field of study onstrates the ability to critica evaluate it and possibly pro of pedagogical sciences to h	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and
By guiding a stude scientifically based kar and approaches. Dem solution, as well as to skills from the field of	nowledge in the field of study onstrates the ability to critica evaluate it and possibly pro of pedagogical sciences to h <b>course:</b>	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and
By guiding a studer scientifically based kn and approaches. Dem solution, as well as to skills from the field of <b>Brief outline of the c</b>	nowledge in the field of study onstrates the ability to critica evaluate it and possibly pro of pedagogical sciences to h <b>course:</b>	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and
By guiding a studer scientifically based kn and approaches. Dem solution, as well as to skills from the field of <b>Brief outline of the c</b> <b>Recommended litera</b>	nowledge in the field of study onstrates the ability to critica evaluate it and possibly pro of pedagogical sciences to h <b>course:</b>	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and
By guiding a studer scientifically based kn and approaches. Dem solution, as well as to skills from the field of <b>Brief outline of the of</b> <b>Recommended litera</b> <b>Course language:</b>	nowledge in the field of study onstrates the ability to critica o evaluate it and possibly pro of pedagogical sciences to h rourse:	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and
By guiding a stude: scientifically based ki and approaches. Dem solution, as well as to skills from the field of <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b>	nowledge in the field of study onstrates the ability to critica o evaluate it and possibly pro of pedagogical sciences to h rourse:	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and
By guiding a stude: scientifically based kn and approaches. Dem solution, as well as to skills from the field of <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	nowledge in the field of study onstrates the ability to critica o evaluate it and possibly pro- of pedagogical sciences to h ourse: nture: ssed students: 6	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and is own field.
By guiding a stude: scientifically based kn and approaches. Dem solution, as well as to skills from the field of <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asse	nowledge in the field of study onstrates the ability to critica o evaluate it and possibly pro- of pedagogical sciences to h ourse: nture: ssed students: 6 abs	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and is own field.
By guiding a stude: scientifically based ki and approaches. Dem solution, as well as to skills from the field of <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asses	nowledge in the field of study onstrates the ability to critica o evaluate it and possibly pro- of pedagogical sciences to h <b>ourse:</b> <b>nture:</b> ssed students: 6 abs 100.0	y, as well as knowledge of a wide range of methods ally assess a professional problem and its proposed opose another solution. He applies knowledge and is own field.

U U	rik University in Košio	2e
Faculty: Faculty of S	-	
Course ID: ÚCHV/ PPC1/22	Course name: Teach	ing activities 1 h/s
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	redits: 2	
Recommended seme	ester/trimester of the	course:
Course level: III.		
Prerequisities:		
Conditions for course Direct teaching activ	-	
Learning outcomes: Through pedagogica	l activity, the PhD stu	dent demonstrates the ability to transfer and integrate
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c	s own field of study strategies of study gr He is capable of desigr urrent trends in higher digital competencies.	dent demonstrates the ability to transfer and integrate into education. He is able to select and apply the oup management, higher education and evaluation of ning and implementing part of the educational process education and the requirements placed on the level of
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b>	s own field of study strategies of study gr He is capable of desigr urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b> <b>Recommended litera</b>	s own field of study strategies of study gr He is capable of desigr urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language:	s own field of study strategies of study gr He is capable of desigr urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b> <b>Recommended litera</b>	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	s own field of study strategies of study gr He is capable of desigr urrent trends in higher digital competencies. course: ature: ssed students: 12	into education. He is able to select and apply the oup management, higher education and evaluation of ning and implementing part of the educational process education and the requirements placed on the level of
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature: ssed students: 12 abs	n
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature: ssed students: 12 abs 100.0	n

	rik University in Koši	
Faculty: Faculty of S	cience	
Course ID: ÚCHV/ PPC2/22	Course name: Teach	ing activities 2 h/s
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	edits: 4	
Recommended seme	ster/trimester of the	course:
Course level: III.		
Prerequisities:		
Conditions for course Direct teaching activ	-	
<b>Learning outcomes:</b> Through pedagogica	l activity, the PhD stu	dent demonstrates the ability to transfer and integrate
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	dent demonstrates the ability to transfer and integrate into education. He is able to select and apply the oup management, higher education and evaluation of ning and implementing part of the educational process education and the requirements placed on the level of
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b>	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and o <b>Brief outline of the c</b> <b>Recommended litera</b>	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language:	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and o <b>Brief outline of the c</b> <b>Recommended litera</b>	s own field of study strategies of study gr Ie is capable of design urrent trends in higher digital competencies. course:	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment	s own field of study strategies of study gr Ie is capable of design urrent trends in higher digital competencies. course:	into education. He is able to select and apply the oup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature: ssed students: 17	into education. He is able to select and apply the oup management, higher education and evaluation of ning and implementing part of the educational process education and the requirements placed on the level of
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature: ssed students: 17 abs	n
Through pedagogica knowledge from his right techniques and learning outcomes. F in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature: ssed students: 17 abs 100.0	n

	rik University in Koši	
Faculty: Faculty of S	science	
Course ID: ÚCHV/ PPC3/22	Course name: Teach	ing activities 3 h/s
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): ly period:	
Number of ECTS cr	edits: 6	
Recommended seme	ester/trimester of the	course:
Course level: III.		
Prerequisities:		
Conditions for course Direct teaching activ	-	
<b>Learning outcomes:</b> Through pedagogica		dent demonstrates the ability to transfer and integrate
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	dent demonstrates the ability to transfer and integrate into education. He is able to select and apply the roup management, higher education and evaluation of ning and implementing part of the educational process education and the requirements placed on the level of
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b>	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the roup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b> <b>Recommended litera</b>	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the roup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and o <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the roup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b> <b>Recommended litera</b>	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the roup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies.	into education. He is able to select and apply the roup management, higher education and evaluation of hing and implementing part of the educational process
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature:	into education. He is able to select and apply the roup management, higher education and evaluation of ning and implementing part of the educational process reducation and the requirements placed on the level of
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature: ssed students: 5 abs	n
Through pedagogica knowledge from his right techniques and learning outcomes. H in accordance with c communication and o Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	l activity, the PhD stu s own field of study strategies of study gr He is capable of design urrent trends in higher digital competencies. course: ature: ssed students: 5 abs 100.0	n

	rik University in Košice	
Faculty: Faculty of S		
	Course name: Teaching	activities 4 h/s
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro	rse-load (hours): ly period:	
Number of ECTS cr	edits: 8	
Recommended seme	ester/trimester of the cou	rse:
Course level: III.		
Prerequisities:		
Conditions for course Direct teaching activ	-	
		t domonstrates the shility to transfer and integrates
knowledge from his right techniques and learning outcomes. H in accordance with c communication and c	s own field of study int strategies of study group He is capable of designing urrent trends in higher ed digital competencies	t demonstrates the ability to transfer and integrate o education. He is able to select and apply the o management, higher education and evaluation of g and implementing part of the educational process ucation and the requirements placed on the level of
knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b>	s own field of study int strategies of study group He is capable of designing urrent trends in higher ed digital competencies	o education. He is able to select and apply the o management, higher education and evaluation of g and implementing part of the educational process
knowledge from his right techniques and learning outcomes. H in accordance with c communication and c	s own field of study int strategies of study group He is capable of designing urrent trends in higher ed digital competencies	o education. He is able to select and apply the o management, higher education and evaluation of g and implementing part of the educational process
knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language:	s own field of study int strategies of study group He is capable of designing urrent trends in higher ed digital competencies	o education. He is able to select and apply the o management, higher education and evaluation of g and implementing part of the educational process
knowledge from his right techniques and learning outcomes. H in accordance with c communication and c <b>Brief outline of the c</b> <b>Recommended litera</b>	s own field of study int strategies of study group He is capable of designing urrent trends in higher ed digital competencies	o education. He is able to select and apply the o management, higher education and evaluation of g and implementing part of the educational process
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knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment	s own field of study int strategies of study group He is capable of designing surrent trends in higher ed digital competencies course: ature:	o education. He is able to select and apply the o management, higher education and evaluation of g and implementing part of the educational process ucation and the requirements placed on the level of
knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment	s own field of study int strategies of study group He is capable of designing surrent trends in higher ed digital competencies course: ature: essed students: 12 abs	n
knowledge from his right techniques and learning outcomes. H in accordance with c communication and c Brief outline of the c Recommended litera Course language: Notes: Course assessment Total number of asse	s own field of study int strategies of study group He is capable of designing surrent trends in higher ed digital competencies course: ature: essed students: 12 abs 100.0	n

	rik University in Košice
Faculty: Faculty of S	cience
Course ID: ÚCHV/ DTA/13	Course name: Thermal and mechanical properties of inorganic compounds
Course type, scope a Course type: Lectur Recommended cour Per week: 3 / 1 Per Course method: pre	re / Practice rse-load (hours): study period: 42 / 14
Number of ECTS cr	edits: 9
Recommended seme	ster/trimester of the course:
Course level: III.	
Prerequisities:	
completion is conditi Active and mandator	e completion: n of a written test. In accordance with the UPJŠ Study Regulations, successful oned by obtaining at least 51% of the maximum possible points. y participation in seminars, elaboration of seminar papers. Each student will paper on a given topic.
kinetics of decompos Mastering the basic p in the physical and ch	g heating, the equipment used to study thermal properties and the reaction ition processes. principles and methods of thermal analysis and its use to characterize changes memical properties of the substance during heating (inorganic compounds and ostances and pharmaceuticals).
<ul><li>thermal analysis.</li><li>2. Classification of th</li></ul>	ry, definition and development of thermal analysis methods. Terminology of hermal analysis methods. Overview of individual thermoanalytical techniques eters. Description of thermoanalytical curves. Isothermal and non-isothermal nalysis.

9.) Analysis of released gases and coupled techniques in thermal analysis (IČ, MS)

10.) Basics of kinetics.

11.) Methods for determining the kinetics of processes from thermoanalytical measurements (ASTM, OFW, Friedman analysis, model-free methods)

12. Presentation and publication of results of thermoanalytical measurements. Application of TA methods to inorganic, organic materials and minerals.

#### **Recommended literature:**

1. M. E. Brown, P. K. Gallagher: Handbook of Thermal Analysis and Calorimetry, Elsevier, Amsterdam, 2008.

- 2. P. Gabbott: Principles and Applications of Thermal Analysis, Blackwell Publ., Oxford, 2008.
- 3. K. Györyová: Termická analýza, Edičné stredisko PF UPJŠ, Košice, 1992.
- 4. F. Paulik: Special Trends in Thermal Analysis, J. Wiley&Sons, New York, 1995.
- 5. V. Zeleňák, Termická analýza, Interný učebný text, PF UPJŠ, 2020.

#### **Course language:**

Slovak language, English language.

#### Notes:

The course is standardly realized in full-time form, in case of necessary circumstances by distance.

Р

100.0

#### **Course assessment**

Total number of assessed students: 18

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0.0	

Provides: prof. RNDr. Vladimír Zeleňák, DrSc.

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Date of last modification: 22.11.2021

Approved: prof. RNDr. Juraj Černák, DrSc.

	rik University in Košice		
Faculty: Faculty of S	cience		
Course ID: ÚCHV/ KZP/22	Course name: Thesis consultant		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:		
Number of ECTS cr	edits: 4		
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
<b>Conditions for cours</b> Final thesis consultar	-		
By consulting the f	inal thesis, the PhD stude	nt demonstrates broad and scientifically based	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid	d of study, as well as knowl lity to critically assess a pr and possibly propose anothe cal sciences to his own field	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogie <b>Brief outline of the c</b>	d of study, as well as knowl lity to critically assess a pr and possibly propose anothe cal sciences to his own field ourse:	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid <b>Brief outline of the c</b> <b>Recommended litera</b>	d of study, as well as knowl lity to critically assess a pr and possibly propose anothe cal sciences to his own field ourse:	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid Brief outline of the c Recommended litera Course language:	d of study, as well as knowl lity to critically assess a pr and possibly propose anothe cal sciences to his own field ourse:	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid Brief outline of the c Recommended litera Course language: Notes:	d of study, as well as knowl lity to critically assess a pr and possibly propose anothe cal sciences to his own field ourse:	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	d of study, as well as knowl ility to critically assess a pr and possibly propose anothe cal sciences to his own field ourse: hture:	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid Brief outline of the c Recommended litera Course language: Notes: Course assessment	d of study, as well as knowl ility to critically assess a pr and possibly propose anothe cal sciences to his own field ourse: hture:	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asses	d of study, as well as knowl ility to critically assess a pr and possibly propose anothe cal sciences to his own field ourse: nture: ssed students: 46	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogid <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asses	d of study, as well as knowl ility to critically assess a pr and possibly propose anothe cal sciences to his own field ourse: nture: ssed students: 46 abs	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	
knowledge in the fiel Demonstrates the abi well as to evaluate it the field of pedagogic <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b> <b>Notes:</b> <b>Course assessment</b> Total number of asses	d of study, as well as knowl ility to critically assess a pr and possibly propose anothe cal sciences to his own field ourse: nture: ssed students: 46 abs 100.0	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from	

	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚCHV/ VZP/22	Course name: Thesis supervising			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	rse-load (hours): ly period:			
Number of ECTS cr	edits: 8			
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
<b>Conditions for cours</b> Supervisor of the fina	1			
, i C	final thesis, the PhD stude	ent demonstrates broad and scientifically based		
Demonstrates the abi well as to evaluate it the field of pedagogie	ility to critically assess a pr and possibly propose anothe cal sciences to his own field	edge of a wide range of methods and approaches. ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from		
Demonstrates the abi well as to evaluate it the field of pedagogic <b>Brief outline of the c</b>	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course:	ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from		
Demonstrates the abi well as to evaluate it the field of pedagogie	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course:	ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from		
Demonstrates the abi well as to evaluate it the field of pedagogic <b>Brief outline of the c</b>	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course:	ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from		
Demonstrates the abi well as to evaluate it the field of pedagogic <b>Brief outline of the c</b> <b>Recommended litera</b>	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course:	ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from		
Demonstrates the abi well as to evaluate it the field of pedagogic <b>Brief outline of the c</b> <b>Recommended litera</b> <b>Course language:</b>	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course:	ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from		
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Demonstrates the abivell as to evaluate it the field of pedagogic Brief outline of the c Recommended litera Course language: Notes: Course assessment	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course: nture: ssed students: 2	ofessional problem and its proposed solution, as er solution. He applies knowledge and skills from		
Demonstrates the abivell as to evaluate it the field of pedagogic Brief outline of the c Recommended litera Course language: Notes: Course assessment	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course: nture: ssed students: 2 abs	n		
Demonstrates the abivell as to evaluate it the field of pedagogic Brief outline of the consect o	ility to critically assess a pr and possibly propose anothe cal sciences to his own field course: ature: ssed students: 2 abs 100.0	n		

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚCHV/ PDS/22	Course name: Writing Dis	ssertation Work
Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pre	rse-load (hours): y period:	
Number of ECTS cr	edits: 20	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
regulations, preparati Learning outcomes: The PhD student dem the conditions prescr	d number of credits in the pr on and defense of the thesis, onstrated the prerequisites fo	escribed composition according to the UPJŠ study successfully completed dissertation examination. or successful continuation of the study by fulfilling as for the study and scientific part of the doctoral
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
<b>Course assessment</b> Total number of asse	ssed students: 12	
	N	Р
	0.0	100.0
Provides:		
Date of last modifica	tion: 08.11.2022	